ESTRO 36

5 - 9 May 2017
Vienna, Austria

PROGRAMME BOOK & EXHIBITION GUIDE

WWW.ESTRO.ORG

ESTRO

5 - 9 May 2017
Vienna, Austria

ESTRO
European Society for Radiotherapy & Oncology

Rue Martin V, 40
1200 Brussels
Belgium

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Table of contents

GENERAL INFORMATION

Welcome letter

Yolande Lievens
ESTRO President and ESTRO 36 Chair

It is my privilege and great pleasure to welcome you to ESTRO 36.

ESTRO is an interdisciplinary society where radiation oncologists, medical physicists, radiobiologists, brachytherapists and radiation therapists aspire to join forces with other organisations in the oncology field that share ESTRO's vision of excellence in cancer treatment. At ESTRO 36, we draw attention to the multidisciplinary and interdisciplinary components of our practice, with emphasis on the new opportunities that they represent for all professionals of oncology, not only in research but also in the daily care of patients.

The interdisciplinary component of the scientific programme include sessions on the following topics:

- Big data to better radiotherapy
- Costs and value of radiotherapy innovations: how to assess
- Global Task Force on Radiotherapy for Cancer Control
- Is there any ground for boost brachytherapy in the time of high precision IGRT/IMRT?
- MR guided radiotherapy: the new standard of care in 10 years time
- Oligometastatic disease
- Patient Reported Outcomes (PROs) in radiotherapy
- Radiomics and imaging databases for precision radiation oncology
- Radiotherapy plus immunotherapy combination: rationale and results so far
- Response adapted treatment
- Safety and clinical and cost effectiveness of multi-modality IGRT and ART
- Selection of patients and radiotherapy technique for APBI in the light of new phase III trial data
- Targeting tumour heterogeneity
- This house believes that 20 years from now, due to the advances in technology, the need for human input in radiotherapy will be minimal
- Waiting times and QA.

The educational aspects of ESTRO 36 will include pre-meeting courses, contouring workshops, teaching lectures and multidisciplinary tumour board sessions.

As in previous conferences, ESTRO 36 offers a Young scientists track. This track is fully organised by our young members and it enables them to meet young colleagues, share

common interests, network and start to build their own collaborative projects at an international level.

All of the leading exhibitors contribute to ESTRO 36, Europe's largest industrial exhibition in radiation oncology, offering the opportunity to view the latest radiotherapy technology and cancer treatment products.

We are pleased to welcome you in Vienna.

With warm regards,
Yolande Lievens
ESTRO President and ESTRO 36 Chair

Scientific and organising committees

ESTRO 36
Chair of the Congress: Y. Lievens (BE)

Scientific Programme Committee (SPC)
Chair: Y. Lievens (BE)

Scientific Advisory Group (SAG)
Chairs:
R. Coppes (NL), *Chair, SAG for radiobiology*
M. Krause (DE), *Chair, SAG for clinical radiotherapy*
C. Kirisits (AT), *Chair, SAG for brachytherapy*
M. Mast (NL), *Chair, SAG for radiation technology*
G. Meijer (NL), *Chair, SAG for radiation physics*
K. Røe Redalen (NO), *Chair, SAG of Young ESTRO members*
M. Spalek (PL), *Chair, SAG of Young ESTRO members*

Members:
M. Baumann (DE), A. Boejen (DK), S. Faithfull (UK), R. Garcia (FR), J. Lindegaard (DK), L. Mullaney (IE), L. Muren (DK), J. Overgaard (DK), P. Poortmans (FR), U. Ricardi (IT), K. Rouschop (NL), B. Wouters (CA), D. Zips (DE).

Scientific Advisory Group (SAG) of Young ESTRO members
Chairs: K. Røe Redalen (NO), M. Spalek (PL)
Members: J-E Bibault (FR), G. Borst (NL), L. Fog (DK), L. Mullaney (IE), K. Rouschop (NL), M. Schmid (AT), D. Thorwarth (DE), W. van Elmpt (NL).

Scientific Advisory Group (SAG) for clinical radiotherapy
Chair: M. Krause (DE)
Members: G. Borst (NL), C. Faivre-Finn (UK), E. Fokas (DE), K. Haustermans (BE), M. Høyer (DK), J. Kazmierska (PL), P. Lara (ES), E. Lartigau (FR), Y. Lievens (BE), L. Livi (IT), C. Marijnen (NL), U. Ricardi (IT), C. Rödel (DE), D. Zips (DE).

Scientific Advisory Group (SAG) for brachytherapy

Chair: C. Kirisits (AT)
Members: Å. Carlsson Tedgren (SE), C. Chargary (FR), J. Guinot (ES), J. Lindegaard (DK), R. Nout (NL), P. Papagiannis (GR), B. Pieters (NL), C. Polgar (HU), F-A Siebert (DE), V. Strnad (DE), L. Tan (UK).

Scientific Advisory Group (SAG) for radiation physics

Chair: G. Meijer (NL)
Members: C. Clark (UK), A. Dekker (NL), C. Fiorino (IT), D. Georg (AT), B. Heijmen (NL), N. Jornet (ES), B. McClean (IE), L. Muren (DK), T. Nyholm (SE), U. Oelfke (UK), P. Papagiannis (GR), M. Schwarz (IT), J-J Sonke (NL), D. Thorwarth (DE), U. van der Heide (NL), D. Verellen (BE).

Scientific Advisory Group (SAG) for radiobiology

Chair: R. Coppes (NL)
Members: J. Alsner (DK), J. Bussink (NL), N. Cordes (DE), A. Kiltie (UK), M. Pruschy (CH), K. Rouschop (NL), R. Suwinski (PL), P. Van Luijk (NL), C. Vens (NL), M-C Vozenin (CH), B. Wouters (CA).

Scientific Advisory Group (SAG) for radiation therapy

Chair: M. Mast (NL)
Members: B. Bak (PL) A. Boejen (DK), M. Coffey (IE), C. Dickie (CA), A. Duffton (UK), S. Johansen (NO), M. Kamphuis (NL), A. Kostovski (BiH), F. Moura (PT), D. Pasini (IT), P. Scherer (AT), A. Vaandering (BE).

Local Organising Committee

Chairs: B. Casar (SI), K. Dieckmann (AT)
Members: D. Georg (AT), P. Lukas (AT), U. Wolff (AT), B. Zurl (AT), M. Dolezel (CZ), A. Kindlova (CZ), I. Koniarova (CZ), M. Vosmik (CZ), R. Kiraly (HU), T. Major (HU), C. Pesznyak (HU), Z. Takacsi-Nagy (HU), J. Crezdo (SK), P. Dubinsky (SK), M. Paluga (SK), M. Pobijakova (SK), P. Peterlin (SI), I. Ratosa (SI), B. Segedin (SI).

Abstract reviewers

Abacioglu, M.U. (TR), Ahnesjö, A. (SE), Alber, M. (DK), Alderliesten, T. (NL), Aleman, B. (NL), Al-Mamgani, A. (NL), Alonzi, R. (UK), Alsner, J. (DK), Anacak, Y. (TR), Andersen, C.E. (DK), Arcangeli, S. (IT), Aristei, C. (IT), Aspradakis, M.M. (CH), Aznar, M. (DK), Bak, B. (PL), Baker, C. (UK), Baltas, D. (DE), Bangert, M. (DE),

Barillot, I. (FR), Barton, M. (AU), Bastholt, L. (DK), Baumann, M. (DE), Bedford, J. (UK), Bel, A. (NL), Belderbos, J. (NL), Belka, C. (DE), Belli, M.L. (IT), Bert, C. (DE), Bibault, J. (FR), Biete, A. (ES), Blanchard, P. (FR), Boejen, A. (DK), Boerma, M. (USA), Boersma, L. (NL), Bol, G. (NL), Borgmann, K. (DE), Borras, J. (ES), Borst, G. (NL), Bortfeld, T. (USA), Boterberg, T. (BE), Bourgier, C. (FR), Bownes, P. (UK), Brada, M. (UK), Breedveld, S. (NL), Brink, C. (DK), Broggi, S. (IT), Brunner, T. (DE), Budach, W. (DE), Budgell, G. (UK), Bujko, K. (PL), Burnet, N. (UK), Bussink, J. (NL), Buus, S. (DK), Cagni, E. (IT), Calvo, F. (ES), Carlsson Tedgren, A. (SE), Carrasco de Fez, P. (ES), Carrie, C. (FR), Casar, B. (SI), Cavedon, C. (IT), Ceberg, C. (SE), Cella, L. (IT), Cellini, F. (IT), Chalmers, A. (UK), Chargari, C. (FR), Clark, C. (UK), Coffey, M. (IE), Coles, C. (UK), Coppes, R.P. (NL), Cordes, N. (DE), Corvò, R. (IT), Cozzarini, C. (IT), Cozzi, L. (IT), Crehange, G. (FR), Creutzberg, C. (NL), Curic, I. (RS), Damen, E. (NL), Darby, S.(UK), Dasu, A. (SE), de Jong, R. (NL), De Meerleer, G. (BE), de Pooter, J. (NL), De Ruysscher, D. (NL), Dekker, A. (NL), Depuydt, T. (BE), Dickie, C. (CA), Dirkx, M. (NL), do Carmo Oliveira, M. (PT), Dörr, W. (AT), Duffton, A. (UK), Dunscombe, P. (CA), Dziadziuszko, R. (PL), Eich, H.T. (DE), Elstrøm, U.V. (DK), Eriksen, J.G. (DK), Evans, P. (UK), Faivre-Finn, C. (UK), Ferrand, R. (FR), Filippi, A.R. (IT), Fiorentino, A. (IT), Fiorino, C. (IT), Fog, L. (DK), Fogliata, A. (IT), Fokas, E. (DE), Fonteyne, V. (BE), Frasca, S.C. (IT), Freeman, C.R. (CA), Gabrys, D. (PL), Gagliardi, G. (SE), Gambacorta, M.A. (IT), Garcia, R. (FR), Garibaldi, C. (IT), Georg, D. (AT), Gérard, J. (FR), Gershkevitsh, E. (EE), Giralt, J. (ES), Glynne-Jones, R. (UK), Gomà, C. (BE), Grau, C. (DK), Grosu, A. (DE), Guckenberger, M. (CH), Guedea Edo, F. (ES), Guinot, J. (ES), Gulliford, S. (UK), Haas, R. (NL), Haie-Meder, C. (FR), Hannoun-Levi, J.M. (FR), Hansen, V.N. (UK), Haustermans, K. (BE), Heemsbergen, W. (NL), Heijmen, B. (NL), Hellebust, T.P. (NO), Hennequin, C. (FR), Hernandez, V. (ES), Higgins, G. (UK), Hoffmann, A. (DE), Hoogeman, M. (NL), Hoskin, P. (UK), Hounsell, A.R. (UK), Houweling, A. (NL), Hoyer, M. (DK),Hu, W. (CN), Hurkmans, C. (NL), Hysing, L.B. (NO), Jäkel, O. (DE), Jiazhou, W. (CN), Johansen, J. (DK), Johansen, S. (NO), Jornet, N. (ES), Kaanders, J. (NL), Kaidar-Person, O. (IL), Kamphuis, M. (NL), Karadza, V. (HR), Karaiskos, P. (GR), Kazmierska, J. (PL), Kepka L. (PL), Khoo, V. (UK), Kirby, A. (UK), Kirisits, C. (AT), Kirkby, K. (UK), Kirova, Y. (FR), Knöös, T. (SE), Knopf, A. (NL), Koritzinsky, M. (CA), Korreman, S. (DK), Kortmann, R. (DE), Kostovski, A. (BA), Kotte, A. (NL), Kouloulias, V. (GR), Kovács, G. (DE), Krause, M. (DE), Kron, T. (AU), Kry, S. (USA), Kuess, P. (AT), Kukolowicz, P. (PL), Lacornerie, T. (FR), Lagendijk, J. (NL), Lagerwaard, F. (NL), Lambrecht, M. (BE), Langendijk, H. (NL), Lara Jimenez, P.C. (ES), Lartigau, E. (FR), Le Pechoux, C. (FR), Lechner, W. (AT), Lehmann J. (AU), Lievens, Y. (BE), Lindegaard, J.C. (DK), Livi, L. (IT), Lomax, T. (CH), Lopes, M.D.C. (PT), Lopez Torrecilla, J. (ES), Lorentini, S. (IT), Lyng, H. (NO), Maduro, J.H. (NL), Maingon, P. (FR), Maldonado, J. (ES), Malicki, J. (PL), Malinen, E. (NO), Marignol, L. (IE), Marrazzo, L. (IT), Marzi, S. (IT), Mast, M. (NL), Mattiucci, G.C. (IT), Mayles, P. (UK), Mazeron, R. (FR), Mc Andrew, N. (UK), Mc Garry, C. (UK), McClean, B. (IE), McGarry, M. (QA), Meijer, G. (NL), Mijnheer, B. (NL), Mikhaeel, G. (UK),

Mirimanoff, R.O. (CH), Moeckli, R. (CH), Monshouwer, R. (NL),M ontero, A. (ES), Monti, A.F. (IT), Moura, F. (PT), Munck af Rosenschöld, P. (DK), Munoz Montplet, C. (ES), Muren, L.P. (DK), Muschel, R.J. (UK), Nailon, W. (UK), Nestle, U. (DE), Nieder, C. (NO), Nijkamp, J. (NL), Nisbet, A. (UK), Niyazi, M. (DE), Nout, R. (NL), Nuver, T. (NL), Nuyts, S. (BE), Nyholm, T. (SE), Nyström, H. (SE), Oelfke, U. (UK), Offersen, B. (DK), Ojala, J. (FI), Onjukka, E. (SE), Orecchia, R. (IT), O'Sullivan, B. (CA), Osztavics, A. (AT), Overgaard, J. (DK),Oz sahin, E.M. (CH), Ozyigit, G. (TR), Pallotta, S. (IT), Palmans, H. (AT), Palorini, F. (IT), Panettieri, V. (AU), Pantelis, E. (GR), Papagiannis, P. (GR), Paris, F. (FR), Pasini, D. (IT), Peitzsch, C. (DE), Perez Calatayud, M.J. (ES), Perrier, L. (FR), Perrin, R. (CH), Petit, S. (NL), Petric, P. (QA), Pettingell, J. (UK), Philippens, M. (NL), Pieters, B. (NL), Platoni, P. (GR), Polgár, C. (HU), Polo Rubio, J.A. (ES), Poortmans, P. (FR), Pötter, R. (AT), Price, G. (UK), Pruschy, M. (CH), Raaymakers, B. (NL), Ramella, S. (IT), Rancati, T. (IT), Ree, A.H. (NO), Reynaert, N. (FR), Riboldi, M. (IT), Ricardi, U. (IT), Richter, C. (DE), Rieken, S. (DE), Riesterer, O. (CH), Rijnders, A. (BE), Rivera, S. (FR), Rödel, C. (DE), Rodemann, H.P. (DE), Rodríguez Romero, R. (ES), Røe Redalen, K. (NO), Rossi, L. (NL), Rouschop, K. (NL), Russell, N. (NL); Rütten, H. (NL), Sanchez-Doblado, F. (ES), Sarrut, D. (FR), Scalliet, P. (BE), Scherer, P. (AT), Schettino, G. (UK), Schmid, M. (AT), Schwarz, M. (IT), Scoccianti, S. (IT), Sebag-Montefiore, D. (UK), Sedlmayer, F. (AT), Sen, M. (UK), Senan, S. (NL), Seppenwoolde, Y. (AT), Shields, L. (IE), Siebert, F. (DE), Skladowski, K. (PL), Slosarek, K. (PL), Slotman, B. (NL), Smeenk, R.J. (NL), Sobotta, B. (DE), Somaiah, N. (UK), Sonke, J. (NL), Spalek, M. (PL), Specht, L. (DK), Speleers, B. (BE), Stasi, M. (IT), Sterpin, E. (BE), Stevanovic, J. (RS), Stieler, F. (DE), Stock, M. (AT), Stokkevåg, C. (NO), Strnad, V. (DE), Sun Myint, A. (UK), Sundaresan, P. (AU), Suwinski, R. (PL), Tan, L. (UK), Tanderup, K. (DK), Thörnqvist, S. (NO), Thorwarth, D. (DE), Timmermann, B. (DE), Tomé, W. (USA), Torresin, A. (IT), Troost, E. (DE), Tsoutsou, P. (CH), Vaandering, A. (BE), Valentini, V. (IT), van Asselen, B. (NL), Van de Kamer, J. (NL), van der Heide, U. (NL), van der Horst, A. (NL), Van Der Schaaf, A. (NL), van Elmpt, W. (NL), Van Limbergen, E. (BE), Van Loon, J. (NL), van Luijk, P. (NL), van Vulpen, M. (NL), Vanderstraeten, B. (BE), Vasquez Osorio, E.M. (NL), Vens, C. (NL), Verellen, D. (BE), Verhaegen, F. (NL), Verheij, M. (NL), Vestergaard, A. (DK), Vogelius, I.R. (DK), Vordermark, D. (DE), Vozenin, M-C. (CH), Walsh, S. (NL), Welleweerd, H. (NL), Werner, R. (DE), Widesott, L. (IT), Wiegel, T. (DE), Witte, M. (NL), Wittkämper, F. (NL), Woodings, S. (NL), Yahalom, J. (USA), Zapatero, A. (ES), Zilli, T. (CH), Zips, D. (DE), Zubizarreta, E.H. (AT)

About ESTRO

ESTRO Vision 2020

Every cancer patient in Europe will have access to state of the art radiation therapy, as part of a multidisciplinary approach where treatment is individualised for the specific patient's cancer, taking account of the patient's personal circumstances.

ESTRO Mission

Founded in 1980, ESTRO is a non-profit scientific organisation whose role is to foster, in all its aspects, radiation oncology, clinical oncology and related subjects, including physics as applied to radiotherapy, radiation technology and radiobiology.
To fulfill its purpose, ESTRO promotes education, science, research and access to radiotherapy through its teaching courses, workshops, meetings, publications and public affairs activities.

ESTRO School

The ESTRO School has become an internationally recognised provider of high quality education in radiotherapy and oncology and has developed a wide array of educational activities:

- Live teaching courses covering basic and continuing medical educational needs of all professionals working in the field of (radiation) oncology
- Pre-meeting teaching courses, workshops, teaching lectures and tumour boards during congresses
- Live and online workshops courses with FALCON (Fellowship in Anatomic deLineation and CONtouring), the online delineation tool
- Hands-on experience through mobility grants programme.

The ESTRO School promotes multidisciplinary education in oncology, basic science, physics and technology, imaging, and interdisciplinary oncology, with the objective of standardising knowledge and clinical practice, whilst recognising the diversity of radiation oncology practice in different parts of the world.

In 2017, the ESTRO School is organising 34 live courses (30 in Europe and four outside Europe) and two undergraduate courses.

More information on the 2017 course programme on www.estro.org.

ESTRO CONFERENCES

ESTRO next annual conference:

ESTRO 37
20-24 April 2018 | Barcelona, Spain
ESTRO 37 will focus on the latest data in clinical oncology, radiation physics, radiation technology and patient's care, brachytherapy and radiobiology, all contributing to the ultimate goal: a better patients' outcome.

ESTRO Membership

ESTRO is devoted to advancing the goals of radiation oncology. This includes providing its members with a host of advantages such as outstanding science and education, in order to support them in their career advancement:

- Online subscription to *Radiotherapy & Oncology*
- Reduced fees for attending ESTRO conferences or teaching courses
- Online access to scientific material through the e-library (DOVE)
- Eligibility for grants, awards, faculties and governance positions.

ESTRO members are professionals of radiation oncology and beyond: radiation oncologists, clinical oncologists, medical physicists, radiobiologists, radiation therapists (RTTs), dosimetrists, radiotherapy nurses, medical oncologists, surgeons, industry representatives, organ specialists, other medical and non medical professions, coming from more than 100 countries spread all over the world.

2017 membership is available on the ESTRO website and at the ESTRO booth during ESTRO 36, booth # 1000, in the exhibition hall.

More information on www.estro.org.

ESTRO Publications

Radiotherapy & Oncology
ESTRO's official scientific journal, Radiotherapy & Oncology, also known as the Green Journal, publishes original research articles and review articles on all aspects of radiation Oncology.The Journal has a current impact factor of 4,817.

Open access journals
ESTRO and Elsevier have launched three new open access journals in order to extend the publication of high-quality research in the radiation oncology field. They are:

- *Clinical and Translational Radiation Oncology - ctRO*
- *Physics and Imaging for Radiation Oncology - phiRO*
- *Technical Innovations and Patient Support in Radiation Oncology - tipsRO*

General information

Venue

Reed Messe Vienna GmbH Congress Center
Messeplatz 1
A-1021 Vienna

Accommodation

Mondial Congress & Events is the official accommodation agent for ESTRO 36 and will operate an accommodation desk in the registration area on:

- Thursday 4 May 16:00 – 18:00
- Friday 5 May 09:00 – 17:00
- Saturday 6 May 09:00 – 17:00
- Sunday 7 May 09:00 – 17:00
- Monday 8 May 09:00 – 17:00
- Tuesday 9 May 09:00 – 12:00

CME Accreditation

ESTRO 36 is accredited by the European Accreditation Council for Continuing Medical Education (EACCME) to provide the following CME activity for medical specialists. The EACCME is an institution of the European Union of Medical Specialists (UEMS), www.uems.net.

ESTRO 36 is designated for a maximum of (or 'for up to') 21 hours of European external CME credits. Each medical specialist should claim only those hours of credit that he/she actually spent in the educational activity.

Through an agreement between the European Union of Medical Specialists and the American Medical Association, physicians may convert EACCME credits to an equivalent number of AMA PRA Category 1 Credits™. Information on the process to convert EACCME credit to AMA credit can be found at www.ama-assn.org/go/internationalcme.

Live educational activities, occurring outside of Canada, recognized by the UEMS-EACCME for ECMEC credits are deemed to be Accredited Group Learning Activities (Section 1) as defined by the Maintenance of Certification Program of The Royal College of Physicians and Surgeons of Canada.

Select pre-meeting courses have been designated for a maximum of (or 'for up to') 6 hours of European external CME credits.

Assemblies

- The Physics Assembly will be held on Saturday 6 May from 13:30 – 14:30 in Lehar 4
- The GEC-ESTRO Assembly will be held on Sunday 7 May from 13:30 – 14:30 in Lehar 4
- All ESTRO members are invited to attend the General Assembly on Monday 8 May at 17:50 in Stolz 1-2.

Badges

Upon registration participants will receive a personal name badge and are kindly requested to wear this badge when attending scientific sessions and/or social events.

Certificates

Certificates of attendance will be issued as of Monday 8 May through the designated stations in the registration area. Certificates of attendance can also be downloaded online until three months after the event.

Communities Pavilion

The Communities Pavilion will gather institutes, national societies, international radiation oncology societies, patients associations and other oncology associations in the exhibition area that will welcome attendees on dedicated booths in order to exchange information about science, projects and collaborations as well as job opportunities and mutual interests. Entrance to Communities Pavilion is free to all the ESTRO 36 participants and is open from 5-8 May during the exhibition opening times.

Posters

Electronic poster stations will allow you to view the virtual displays at your leisure and to correspond with presenters or forward a presentation to a colleague or home office. A limited number of posters will also be displayed in the poster area during the whole congress.

Exhibition

An exhibition featuring equipment and medical publishers will be held in the exhibition area. The exhibition will open with the Welcome networking on Friday 5 May 2017 at 19:25. The exhibition will remain open from Friday 5 May to Monday 8 May from 09:30 to 17:00. Entrance is free for all registered participants.

Information for abstract authors

ESTRO 36 abstracts were selected for the following types of presentations:

- **Oral communication**
  Abstract is presented in one of the proffered papers sessions.

- **Poster viewing**
  Posters selected for the poster viewing sessions will be highlighted in the conference final programme and will be displayed in a central section of the poster area. Posters on a similar topic will be grouped together. The presenting authors of the selected posters in the group will visit all the posters within each group, along with the audience. At each poster, the presenting author will present his/her poster in five minutes, followed by three minutes for discussion, which will be lead by two chairpersons for the group.

- **Poster**
  Authors are required to display a poster on the designated poster panel. Posters are grouped by topic.

  - poster mounting time: posters can be mounted as of 16:00 on Thursday 4 May 2017 or anytime after that
  - poster removal time: posters should be removed by Tuesday 9 May 2017 before 13:00.

  Any posters remaining after that time will be discarded. Authors are requested to be present next to their poster during the poster reception which will be held on Saturday 6 May 2017 as of 18:30. It will also be indicated in the official schedule, that posters can be viewed during lunch time on Sunday 7 May and Monday 8 May 2017.

- **E-poster**
  Authors upload an electronic poster in the ESTRO system. E-posters will be available for viewing in special stations available at the conference venue, anytime during the conference. There is no designated time slot for viewing. Participants will be able to view all electronic posters as frequently, and as often as they wish.

- **In the electronic abstract book**
  - Oral Communication abstracts are designated with OC + number
  - Poster Viewing abstracts are designated with PV + number
  - Posters are designated with PO + number
  - Electronic Posters are designated with EP + number.

Insurance

The organiser does not accept liability for individual medical, travel or personal insurance. Participants are strongly advised to take out their own personal insurance policies. In case an unforeseen event would force ESTRO to cancel the meeting, the Society will reimburse

the participants the registration fee minus 15% for handling charges. ESTRO will not be responsible for the refund of travel and accommodation costs.

Luncheons and refreshments

The registration fee for the conference includes coffee breaks to all participants and exhibitors wearing their conference badges. Lunch will be available for purchase in the exhibition area and is not included in the registration.

Meeting points

Special designated meeting points for each ESTRO discipline are located near the poster area.

Opening ceremony and welcome networking

All participants and company delegates are invited to the official opening ceremony which will be held in the main auditorium on Friday 5 May 2017 at 18:20. The opening ceremony will be followed by the welcome networking which will take place in the exhibition area.

Satellite symposia

Commercial satellite symposia will be held during lunch breaks. See "Satellite Symposium' section of this book on page xxx for more information

Smoking

There will be a strict non-smoking policy within all areas of the conference facilities.

Social activities

- **Friday 5 May 2017**
  All registered participants and all company delegates are invited to the welcome networking which will take place in the exhibition area as of 19:25 on Friday 5 May.

- **Saturday 6 May 2017**
  All participants and company delegates are invited to the poster reception and poster awards, which will be held in the poster area on Saturday 6 May at 18:30

- **Sunday 7 May 2017**
  The 3rd Super Run will take place on Sunday 7 May at 19:00. The five km run is organised for the benefit of the ESTRO Cancer Foundation

- **Monday 8 May 2017**
  All participants are invited to the after dinner evening which will take place in an exclusive venue in Vienna.

Speaker preview

The speaker preview room is located in the main congress area. Speakers are requested to bring their PowerPoint presentations to the speaker preview room at least three hours prior to the start of the session or the day before if the session is planned in the early morning.

Opening hours

- Thursday 4 May 16:00-18:00
- Friday 5 May 07:30-18:00
- Saturday 6 May 07:00-18:00
- Sunday 7 May 07:00-18:00
- Monday 8 May 07:00-18:00
- Tuesday 9 May 07:30-12:00

Wifi

Free wireless internet will be available in all meeting rooms.

Acknowledgements

ESTRO would like to extend a special thank you for the Chair of ESTRO 36, Yolande Lievens and the Chairs of the Advisory Groups, Mechthild Krause, Christian Kirisits, Gert Meijer, Rob Coppes, Mirjam Mast, Kathrine Røe Redalen and Mateusz Spalek for having accepted the responsibility to develop the scientific programme.

Special thanks to all the members of the scientific advisory groups, local organising committee and abstract reviewers for their valuable contribution to the conference.

ESTRO welcomes as special guests:

ASTRO – American Society for Radiation Oncology
CARO – Canadian Association of Radiation Oncology
ESR – European Society for Radiology
RANZCR – The Royal Australian and New Zealand College of Radiologists
JASTRO – Japanese Society for Therapeutic Radiology and Oncology

ESTRO 36 APP

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ESTRO AWARDS

Awards overview

Lifetime Achievement Award

Annette Bøjen (DK)
Alan Nahum (UK)
Jens Overgaard (DK)
Hans-Peter Rodemann (DE)
Paul Van Houtte (BE)

ESTRO Award Lectures

- **Emmanuel van der Schueren Award**
  Substantial and "for free" improvement of radiotherapy practice in high and low income countries
  Ben Heijmen (NL)
  Saturday 6 May from 11:40-12:10

- **Iridium Award**
  Brachytherapy physics developments: look back in anger, grateful, and with hope
  Jack Venselaar (NL)
  Saturday 6 May from 12:15-12:40

- **Jens Overgaard Legacy Award**
  Individual patient data meta-analysis in head and neck cancer: an international and multidisciplinary collaboration
  Jean-Pièrre Pignon (FR), Jean Bourhis (CH) and Pierre Blanchard (FR)
  Sunday 7 May from 12:10-12:30

- **Regaud Award**
  More than one century after the serendipitous discovery of X-rays, there is still a bright future for radiation oncology…
  Jean Bourhis (CH)
  Sunday 7 May from 12:30-13:00

- **Donal Hollywood Award**
  In vitro prediction of DNA repair defects reveals association with poor clinical outcome in HNSCC
  Paul Essers (NL)
  Monday 8 May from 11:40-11:50

- **Klaas Breur Award**
  The 5 R(elevant) principles of radiotherapy in multimodal cancer treatment
  Claus Rödel (DE)
  Monday 8 May from 12:30-13:00

Honorary Member Lectures

- Optimising the treatment of HPV-related oropharyngeal cancer: the difficult journey back
  Brian O'Sullivan (CA)
  Saturday 6 May from 17:40-17:55

- Potential of radiation therapy to convert the tumor into an *in situ* vaccine
  Silvia Formenti (USA)
  Saturday 6 Mary from 17:55-18:10

- Quality improvement in radiotherapy: history, significance and impact of dosimetry audits
  Joanna Izewska (AT)
  Saturday 6 May from 18:10-18:25

Honorary Physicist Award

Cognitive perspective in the radiation oncology physics domain
Vincenzo Valentini (IT)
Saturday 6 May from 12:40-13:00

ESTRO Academic Award

Jack Fowler University of Wisconsin Award
Dosimetric quantification of the "true" ano-inguinal lymphatic drainage of anal cancer patients
Hendrik Dapper (DE)
Sunday 7 May from 17:40-17:50

Awardees' biographies

LIFETIME ACHIEVEMENT AWARD

Annette Bøjen

Department of Oncology, Aarhus University Hospital
Aarhus, Denmark

Annette Bøjen

Annette Bøjen was educated as a registered nurse and radiation therapist. She is the Head of the Learning Centre at Aarhus University Hospital and has been leader of the Radiation Therapist Education Programme in the Western part of Denmark since the beginning of 2000.

From the onset of working in the field of radiation therapy, her main interest has been dedicated to secure the best quality of treatment performed by well-educated radiation therapists (RTTs). She was active in the establishment of a formal national education programme for RTTs.

Annette Bøjen participated in the second (2002) and third (2011) revision of the ESTRO RTT core curriculum. She has been a member of the RTT Committee since 2012 and the Scientific Programme Committee of the annual ESTRO meetings for the past three years. In a newly started RTT collaboration with the Canadian Association of Medical Radiation Technologies (CAMRT), Annette is co-chairing the first project. She is the RTT Committee's representative in the National Society Committee and is an editorial board member on the ESTRO open access journal *TipsRO* (Technical Innovations & patient Support in Radiation Oncology).

Aarhus University Hospital was the first institution to implement the use of a 3D virtual reality (VR) environment in radiation therapy learning. Annette Bøjen is responsible for the ongoing progress with the Danish-UK collaboration and integration of VR in the education of all professions. She has developed and organised several systematic learning programmes such as research methodology for RTTs and qualifying of RTTs to manage daily online IGRT and ART in large scale. She has also contributed to scientific papers and Danish text books.

LIFETIME ACHIEVEMENT AWARD

Alan Effraim Nahum

Clatterbridge Cancer Centre
Liverpool, UK

Alan Effraim Nahum

Alan Effraim Nahum, born Manchester 1949, studied physics at Oxford University, UK. For his PhD (Edinburgh, 1975), supervised by John Greening, he wrote a photon-electron Monte-Carlo code, applied to the Fricke dosimeter and to ionisation chamber response. After three years' school teaching he joined Hans Svensson at 'Institutionen för Radiofysik', Umeå, working on NACP dosimetry protocols; He had a three-month sabbatical at NRCC, Ottawa in 1983, working on simulating ion-chamber response with Dave Rogers and Alex Bielajew.

1985 - 2002 was spent at Institute of Cancer Research, UK. With advice from Gordon Steel he developed the 'Marsden' TCP model, incorporated into BIOPLAN by postdoc Beatriz Sanchez-Nieto to explore iso-NTCP tumour dose individualisation. PhD students Charlie Ma and Richard Knight applied Monte-Carlo simulation to kilovoltage x-ray dosimetry. Spells as 'visiting scientist' followed at Fox-Chase CC (Philadelphia), where he and Don Chapman challenged the 'low prostate α/β' hypothesis, at Reggio Emilia and Copenhagen.

In 2004 he joined Clatterbridge Cancer Centre as Head of Physics Research, becoming 'Visiting Professor' at Liverpool University Physics Department. He co-edited with Philip Mayles and Jean-Claude Rosenwald, *Handbook of Radiotherapy Physics – Theory and Practice* in 2007. He created and organised the Clatterbridge Radiobiology course (later ESTRO-supported) 2006 - 2015. His postdoc Julien Uzan wrote *BioSuite*, for 'isotoxic' tumour-dose and fraction-number individualisation. He co-wrote with Don Chapman, *Radiotherapy Treatment Planning* - Linear-*Quadratic Radiobiology* (CRC Press), in 2015. He retired in October 2015. He has co-authored with Pedro Andreo, David Burns, Jan Seuntjens and Frank Attix, *Fundamentals of Ionizing Radiation Dosimetry*, 2nd Edition (Wiley VCH), to appear in 2017.

LIFETIME ACHIEVEMENT AWARD

Jens Overgaard

Department of Experimental Clinical Oncology, Aarhus University Hospital
Aarhus, Denmark

Jens Overgaard

Today, Professor Jens Overgaard might be the only remaining person who has been an active part of ESTRO during its entire lifetime - from its start in 1981 to date. He became interested in radiotherapy related research as a medical student, and was further inspired by spending a period of his training with Professor Herman Suit at Massachusetts General Hospital and Harvard Medical School in the mid 1970's. This brought him into a research career focused on translational research and clinical trials addressing the issue of optimising radiotherapy on a biological basis. He has co-authored more than 750 scientific papers, and supervised more than 100 PhD and DMSc students, of whom several of the candidates subsequently became leaders in ESTRO.

Jens was a founding member of ESTRO and has participated as a speaker or chair in all annual ESTRO meetings ever since. He was involved at an early stage in the organisation and development of the Society. In 1985 he became the first chair of the educational committee. He was also part of the *Green Journal* from its beginning, and has been the Editor-in-Chief of *Radiotherapy & Oncology* for more than 25 years (1990-2016). He has been member of the ESTRO Board for more than 30 years, including being president 1995-97. Among many honours, he has received the Breur Award (1989), the Regaud Medal Award (2002), the ESTRO 30th Anniversary Award (2011), and The Pezcoller Award (2011).

LIFETIME ACHIEVEMENT AWARD

Hans-Peter Rodemann

Division of Radiation Biology & Molecular Environmental Research,
Dept of Radiation Oncology, University of Tuebingen
Tuebingen, Germany

Hans-Peter Rodemann

After studying cell biology (1970-1975) Prof Rodemann received his doctoral degree from the University of Hohenheim, Germany in 1979. From 1979-1982 he worked as postdoc in the Department of Physiology at Harvard Medical School and focussed on regulatory mechanisms of protein degradation. Having returned to the Department of Cell Biology at the University of Hohenheim, he concentrated on mechanisms of cell differentiation and received the Habilitation for Cell Biology in 1986. Thereafter, he joined the Department of Developmental Biology at the University of Bielefeld as group leader and started to focus on the molecular effects of radiation on cell differentiation. In 1992 he was appointed as Full Professor of Radiation Biology and Head of the Div. of Radiobiology & Molecular Environmental Research, Department of Radiation Oncology, University of Tübingen. Since then, his research group has focussed on the molecular mechanisms of normal and tumour cell responses to radiation.

Prof Rodemann has to date authored more than 190 research articles. He has been a member of ESTRO since 1992 and chaired the ESTRO radiobiology committee from 2002 to 2010. In recognition of his research achievements he received the Klaus Breur award in 2006. Besides having been presented with other several scientific awards, Prof Rodemann was elected as member of the Leopoldina - National Academy of Sciences, Germany, in 2011. Together with Prof Stephan Bodis in Switzerland, he founded and is still the organiser of the Wolfsberg Meeting Series on Molecular Radiation Biology/ Oncology. This meeting has developed into one of the most important international conferences in the field.

LIFETIME ACHIEVEMENT AWARD

Paul Van Houtte

Jules Bordet Université Libre Bruxelles
Brussels, Belgium

Paul Van Houtte

Paul Van Houtte graduated from the Université Libre de Bruxelles, completed his postgraduate training at the Institut Bordet and earned a license of radiation oncology in nuclear medicine in 1978. Except for two years spent in Rochester, New York, in the department of P. Rubin, all his medical activities took place in Brussels. He was head of department of radiation oncology from 1986 to 2014 and is currently Professor Emeritus of radiation oncology at the Université Libre de Bruxelles.

His main area of research and activities was related to lung, gastro-intestinal and prostatic cancer. He was active within the EORTC Radiotherapy group, the European Lung Working Party and the International Association for the Study of Lung Cancer (IASLC). One main interest has been not only to promote the treatment of lung cancer especially the multimodality approach including the chemo-radiotherapy approach, but also to promote radiation treatment of quality through active participation in teaching activities at national and international level.

He actively served within ABRO-BVRO and ESTRO and was the scientific chair of the Praha congress. He coordinated and participated in several teaching courses on lung cancer within ESTRO, ESO and ERS and delivered many lectures on this topic worldwide. He is the author/co-author of more than 240 peer-reviewed articles, editorials and book chapters. He received the IASLC scientific award for his activities. He is a member of the Belgian Royal Academy of Medicine.

EMMANUEL VAN DER SCHUEREN AWARD

Ben Heijmen

Erasmus MC Cancer Institute
Rotterdam, The Netherlands

Ben Heijmen

After obtaining MSc and PhD degrees in experimental molecular and laser physics, Ben Heijmen started with a residency in medical physics for radiotherapy at the Erasmus Medical Center Cancer Institute. He then joined the medical physics staff of the department of Radiation Oncology. Since 2005 he has also been full professor in radiation oncology physics at the Erasmus University Rotterdam.

Ben Heijmen has been active in several research areas in radiotherapy, including automated treatment plan generation, computer optimisation of (non-coplanar) beam angles, image-guided radiotherapy (IGRT), adaptive radiotherapy (ART), stereotactic body radiation therapy (SBRT) with a Cyberknife robotic treatment unit, proton therapy, and development of procedures and software for enhancement of patient safety, including electronic portal imaging (EPID) based *in-vivo* dosimetry. His main current interest is development of automated treatment planning, and the use of automated planning for bias-free comparison of treatment strategies and for development of novel treatment approaches. He is member of the Physics Committee and the Board of the Education Council of ESTRO, Director of the ESTRO course 'Physics for Modern Radiotherapy' and the ESTRO 'Research Masterclass in Radiotherapy Physics'. He is also member of the Editorial Board of *Radiotherapy & Oncology* (*Green Journal*), associate editor of *Medical Physics*, and member of the Research Steering Group of the Holland Particle Therapy Center (Holland PTC). Ben Heijmen is (co-)author of over 175 peer-reviewed papers, with a scopus H-index of 40. Many of the investigations had an impact on clinical practice.

IRIDIUM AWARD

Jack L.M. Venselaar

Instituut Verbeeten, Dept of Clinical Physics
Tilburg, The Netherlands

Jack LM Venselaar

Dr Jack Venselaar received his PhD in 2000 at Leiden University in The Netherlands on the topic of accuracy requirements of external beam therapy treatment planning. He is a senior specialist medical physicist, appointed in 1979, in the department of Medical Physics & Engineering of Instituut Verbeeten, Tilburg, The Netherlands. He has experience in the field of radiotherapy and brachytherapy physics, radiation protection and hyperthermia. He has pursued research in the field of dosimetry, quality assurance and technology of brachytherapy since the 80s. His contributions to brachytherapy physics and technology include dosimetry of high-activity sources, development and establishment of dosimetry protocols, advanced quality control procedures and systems, development of quality audit systems, and brachytherapy radiation protection data. He was a board member of The Netherlands Commission of Radiation Dosimetry (NCS) and participated in several of the NCS committees including one chair position. From 2001 to 2008 he chaired the Brachytherapy Physics Quality Systems (BRAPHYQS) group of GEC-ESTRO. Dr Venselaar also acted as a liaison between the GEC-ESTRO Committee of ESTRO and the AAPM Brachytherapy Subcommittee and the ABS Physics Committee. He was the national coordinator of the Patterns of Care in Brachytherapy study project of GEC-ESTRO. He furthermore was a consultant on several assignments for the International Atomic Energy Agency (IAEA) for both teaching and advisory activities. In 2013 he co-authored a book published by CRC Taylor & Francis on Comprehensive Brachytherapy, Physical and Clinical Aspects (Venselaar JLM, Baltas D, Meigooni AS, and Hoskin PJ, Eds.). From 2001-2009 he taught on brachytherapy physics lectures on the international ESTRO teaching course on Modern Brachytherapy Techniques. Together with Prof Dimos Baltas from Offenbach, he shared the course directorship of the first and successful ESTRO teaching course on Advanced Brachytherapy Physics which was held in Brussels in May 2014.

JENS OVERGAARD LEGACY AWARD

Jean-Pierre Pignon

Institut Gustave Roussy
Villejuif, France

Jean-Pièrre Pignon

Dr. Pignon earned his Medical degree (1980) at the University of Paris XI, a Master's degree in immunology (Paris VI University, Institut Pasteur), a PhD in biostatistics (1993) and his Accreditation for supervising PhD student in clinical research (2001) at the University of Paris XI. He completed his Internal Medicine Internship and Gastroenterology Residency in the Paris University Hospitals (1988). He is senior clinical epidemiologist in the Department of Biostatistics and Epidemiology at Gustave-Roussy Cancer Campus (Villejuif, France) since 1990 and head of its Meta-Analysis Team since 2002. He has been senior scientist in the Oncostat team of the INSERM Unit U1018 since 2015. As a statistician, he participated in more than 20 clinical trials in GI tract or lung cancer and in more than 15 individual patient data (IPD) meta-analyses, mainly in lung and head and neck cancer. His research interests focus on treatment of patients with locally advanced lung or head and neck cancer with emphasis on the association of chemotherapy and radiation, use of IPD meta-analysis to validate predictive value of tumour markers and on IPD meta-analysis methodology. He serves as the Principal Investigator for a series of government, charities and industry sponsored research grants for individual patient data meta-analysis of chemotherapy, radiotherapy or their association in lung or head and neck cancer. Dr. Pignon has (co)-authored over 200 articles in international peer-reviewed papers that relate primarily to treatment of GI tract, lung, and head and neck cancer, and to meta-analysis. He was the recipient of the ESTRO Honorary Member Award in 2010.

JENS OVERGAARD LEGACY AWARD

Pierre Blanchard

Institut Gustave Roussy
Villejuif, France

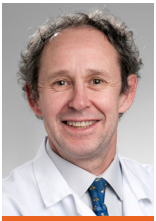
Pierre Blanchard

Dr Blanchard is a member of the faculty at Gustave Roussy Cancer Centre, France. He has developed a strong clinical background in the field of head and neck radiotherapy, genitourinary radiotherapy and brachytherapy as well as proton therapy and quality of life studies. In parallel to his medical training, he performed a PhD in Public Health on biostatistics and individual patient data meta-analyses. He is frequently invited for talks on statistics and methodology applied to clinical research. He is currently the clinical manager of the head and neck meta-analyses performed at Gustave Roussy (more than 150 trials, four individual patients meta-analysis, a consortium of more than 15 institutions). He is very active within the internationally recognised head and neck research groups GORTEC (head and neck oncology) and GETUG (urologic oncology). He is the co-primary investigator of an international phase III trial on pelvic lymph node radiotherapy in high risk prostate cancer. Dr Blanchard also serves as faculty for different courses organised at Gustave Roussy and is currently responsible for a national teaching course on head and neck radiotherapy. He has published more than 80 articles in peer-reviewed journals. He also serves as reviewer for the *Journal of Clinical Oncology*, *Radiotherapy and Oncology*, and the *International Journal of Radiation Oncology, Biology and Physics*. He is currently a visiting Faculty at MD Anderson Cancer Center, and has recently been appointed as co-Editor-in-Chief of *Clinical and Translational Radiation Oncology*, one of ESTRO's newly launched open access journals.

REGAUD AWARD AND JENS OVERGAARD LEGACY AWARD

Jean Bourhis

Centre Hospitalier Universitaire Vaudois
Lausanne, Switzerland



Jean Bourhis

Prof Jean Bourhis graduated in Paris as a Medical Doctor (MD) and was board certified in radiation oncology. From 2002 to 2012 he served as Chair of the Radiation Oncology Department at the Institute Gustave Roussy (Villejuif, France), which is one of the most prominent Cancer Centres in Europe. His clinical activity has been focused on radiation oncology and he is also well versed in head and neck oncology. He has been principal investigator of about 15 multicentric randomised trials in this field. He also coordinated several large-scale international collaborative meta-analyses in head and neck oncology, the contributions of which have been recognised worldwide. He is Chair of the GORTEC, one of the major cooperative group conducting clinical trials in head and neck oncology. Besides his clinical activities, Prof Bourhis has a major interest in promoting translational research in radiation oncology. He obtained a PhD in Molecular Oncology at the University of Paris and for the last 15 years been director of a laboratory dedicated to experimental research in radiation oncology. He has authored about 300 peer-reviewed scientific papers, now associated with an H factor over 50. In 2012 Jean Bourhis moved to the Swiss Cancer Centre Lausanne where he was appointed Professor and Chair of Radiation Oncology at the University Hospital. Prof Bourhis was also very honoured to serve as President of ESTRO and of the ESTRO Cancer Foundation.

DONAL HOLLYWOOD AWARD

Paul Essers

Netherlands Cancer Institute
Amsterdam, The Netherlands

Paul Essers

Paul Essers received his PhD in 2013 at the University of Utrecht for his work at the Hubrecht Institute in the laboratory of Alyson MacInnes, where he worked on models of ribosome biogenesis defects and regulation of protein synthesis. In 2014, he joined the laboratory of Prof Linda Partridge at the Max Planck Institute for Biology of Ageing (Cologne, Germany), where he received a Marie Curie Individual Fellowship, to continue his work studying the role of protein synthesis regulation in long-lived animal models. In 2015, he shifted his attention to oncology and moved to the Netherlands Cancer Institute (Amsterdam, The Netherlands), where he uses machine learning techniques to predict DNA repair defects.

KLAAS BREUR AWARD

Claus Rödel

Department of Radiotherapy and Oncology, University of Frankfurt
Frankfurt, Germany

Claus Rödel

Claus Rödel (born in 1966) graduated from Erlangen Medical School, Germany, in 1994, and completed his medical speciality training degree in radiation oncology in 2002. He was attending physician and consultant at the Department of Radiation Therapy, University of Erlangen, Germany, until 2006. In 2007, he was appointed Director and Chair of the Department of Radiotherapy and Oncology at the University of Frankfurt, Germany. Since 2008, he has also served as Clinical Director of the Comprehensive Cancer Centre (UCT) of the University Hospital of Frankfurt, and is a principal investigator within the German Cancer Consortium (DKTK). His main research interests focus on combined modality treatment, including targeted therapies, for patients with rectal and bladder cancer, as well as molecular prediction of tumour response. As speaker of the German Rectal Cancer Study Group he led several phase I-III clinical trials to establish and optimise chemoradiotherapy for rectal cancer patients. His scientific work has been honoured with the Herman-Holthusen Award of the German Society of Radiation Oncologist (DEGRO), the Clinical Science Award of ARO, and the German Cancer Society's (DKG) Award for the best clinical trial in 2015. He also serves as member of the ESTRO Clinical Committee and is Director of the ESTRO teaching course for lower gastrointestinal cancers.

HONORARY MEMBER AWARD

Brian O'Sullivan

Princess Margaret Hospital
Toronto, Canada

Brian O'Sullivan

Brian O'Sullivan is a Professor in the Department of Radiation Oncology and in the Department of Otolaryngology / Head and Neck Surgery at the University of Toronto, Canada. He holds the Bartley-Smith/Wharton Chair in Radiation Oncology in the Department of Radiation Oncology at the Princess Margaret Hospital, University of Toronto. He received his medical degree from the National University of Ireland at University College Dublin in 1976, and completed internship and general internal medicine at St. Vincent's Hospital in Dublin, and a fellowship in medical oncology, and a residency and clinical fellowship in radiation oncology at Princess Margaret Hospital, Canada.

Professor O'Sullivan is the immediate past-Chair of the Head and Neck Oncology Committee of the Canadian Clinical Trials Group (CCTG) and current co-Chair of the US National Cancer Institute (NCI) Head and Neck Steering Committee of the Coordinating Center for Clinical Trials, Cancer Therapy Evaluation Program (CTEP). He is the recipient of numerous international awards, and research grants. He has published almost 350 peer reviewed papers, more than 50 book chapters, and written or edited six oncology textbooks. He is a Commissioner, International Commission on Radiation Units and Measurements (ICRU). He is a member of the TNM Committee of the Union for International Cancer Control (UICC), Chair of the UICC Prognostic Factors Sub-Committee, Editor-in-Chief of the UICC Manual of Clinical Oncology, and the UICC liaison to the American Joint Committee on Cancer (AJCC) for head and neck cancer, and bone and soft tissue sarcoma. His interests include sarcoma and head and neck cancer.

HONORARY MEMBER LECTURE

Silvia C. Formenti

NYP/Weill Cornell Medicine
New York, USA

Silvia C. Formenti

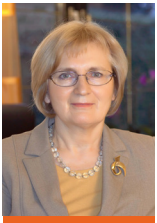
Dr Formenti is the Chair of Radiation Oncology at Weill Cornell Medical College and the Associate Director of the Cancer Center.

Trained as a medical and radiation oncologist she devoted her career to translate novel preclinical information to the clinic. Key to her formation was a year spent in Malcolm Mitchell's laboratory at University of Southern California, in cancer immunology. Her initial research on how to best combine radiation and systemic therapy, both pre-clinically and clinically evolved on focusing on the systemic effects of radiotherapy, particularly on the immune system. Her laboratory's original demonstration that the abscopal effect of radiotherapy is immune-mediated has opened a fertile field of research to understand the immune-stimulatory and immune-suppressive effects of ionising radiation, and to develop strategies directed at harnessing anti-tumour immunity in irradiated subjects. This work has introduced a paradigm shift in radiation and cancer biology. In this novel application, radiotherapy contributes at recovering an immunological equilibrium in the setting of metastatic cancer, by converting an irradiated metastasis into an *in situ*, individualised vaccine in the presence of immune checkpoint blockade (anti-CTLA4, anti-PDL-1). Once successfully immunised against the irradiated site, the host can develop an anti-tumour immune response capable to reject the other metastases. In some patients with metastatic disease the combination of radiation and immune checkpoint blockade has resulted in complete remissions, sustained for years after treatment (without any other additional interventions). Dr Formenti's work has been funded by grants from NIH, DOD, ACS and Breast Cancer Research Foundation and is currently leading four investigator-initiated clinical trials of immunotherapy and radiotherapy.

HONORARY MEMBER LECTURE

Joanna Izewska

International Atomic Energy Agency
Vienna, Austria



Joanna Izewska

Joanna Izewska graduated from the Warsaw Technical University in Poland in 1981, receiving a MSc. degree in physics. From 1981 - 1986 she worked at the Soltan Institute for Nuclear Studies, Otwock-Swierk, Poland; and since 1987 at the Cancer Centre, Warsaw, Poland, at the Medical Physics Department and at the Secondary Standards Dosimetry Laboratory. She attained a PhD in physical sciences in 1991. In 1992-1993 she held a postdoctoral training position in Houston, USA. In 1994-1995 she worked at the University Hospital in Leuven, Belgium, on a QA project for radiotherapy centres in Central Europe. In 1996 she joined the International Atomic Energy Agency (IAEA) as the TLD Officer in Dosimetry and Medical Radiation Physics Section, Division of Human Health. In 1997 she was appointed Head of the IAEA Dosimetry Laboratory.

Her early professional experience was related to dosimetry and accelerator physics, including design of the beam shaping systems for linacs applied in radiotherapy, industrial radiography and food irradiation. Her more recent scientific activities have mainly been focused on radiotherapy dosimetry, including quality assurance in radiotherapy and quality audits. She is responsible for the IAEA/WHO TLD postal dose audit programme for radiotherapy, IAEA developments for national audit networks and involved in other radiotherapy audit programmes by the IAEA such as Quality Assurance Team for Radiation Oncology (QUATRO). She has published more than 130 scientific papers, abstracts and conference proceedings. Joanna Izewska has been a scientific secretary for several IAEA publications and is a co-author of book chapters on dosimetry and QA in radiotherapy.

HONORARY PHYSICS AWARD

Vincenzo Valentini

Gemelli ART – Fondazione Policlinico Universitario A.Gemelli – Università Cattolica S. Cuore
Rome, Italy

Vincenzo Valentini

Vincenzo Valentini is a full professor in radiation oncology. He is also Chair of both the Oncology and Haematology Department as well as the Radiation Oncology Department – Gemelli ART, at the Università Cattolica S. Cuore of Rome. He had graduated from the latter as Medical Doctor in 1979 and became a specialist in radiation oncology, radiology, and oncology.

His main field of interest was the optimisation of radiation treatments by using different imaging techniques for the definition of target volumes; integration between radiotherapy and surgery, in which he collaborated for the conduction of pre-operative and intra-operative programmes; integration between radiotherapy and chemotherapy, in which he applied different schedules for the treatment of locally advanced neoplasm especially in gastro-intestinal, genitourinary, lung and head and neck.

He also directed his interest to computer applications in the fields of health care, research and teaching. He promoted tutorials for delineation of target volume (TIGER and FALCON by ESTRO); and the on line dissemination of ESTRO knowledge repository (DOVE, EAGLE). He recently opened two knowledge based oncology laboratories for research in large data base data mining and radiomics.

Vincenzo was the general secretary of ISIORT (International Society of Intraoperative Radiotherapy) from 2000 to 2011; member of the Core group of the ESTRO Educational and Training Committee; and served as President of ESTRO from 2011 to 2014.

Vincenzo has authored more than 350 publications in peer-reviewed journals as well as many review articles, book chapters, books on computer applications in teaching, and books on different neoplasms. He is a member of Editorial Boards of different radiotherapy and oncology international journals.

JACK FOWLER UNIVERSITY OF WISCONSIN AWARD

Hendrik Dapper

Department of Radiation Oncology, Klinikum rechts der Isar, Technical University of Munich, Public Law Institution Munich, Germany

Hendrik Dapper

Hendrik Dapper was born in 1987 in Göttingen, Germany. He passed his A-levels and finished school at the "Kaiserin-Auguste-Viktoria-Gymnasium" in Celle in 2007.

In 2008 he started his medical studies at Ludwig-Maximilians-Universität in Munich. During these studies he spent several months working in hospitals in Uganda and Australia and got valuable practical experience. He obtained his medical degree at Technische Universität München in 2015.

Since October 2015 he has been working as a radiation oncologist at Klinikum rechts der Isar in Munich. He is very interested in medical research and enjoys the cooperation with his colleagues at his department.

Ever since he was a child, he loved music. He was a member of different choirs among them the choir of the students of medical school with whom he participated in several demanding (international) performances. He especially enjoyed playing the bass in several regionally renowned bands. Another important hobby is to practice sports, especially tennis where he has participated in several competitions.

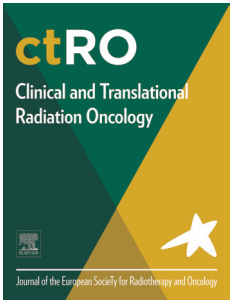
After his A-levels, Hendrik took a gap year to do voluntary work in the social sector in Uganda. He mainly worked with people in one specific community and was able to help bring solar energy to this community. It was during his trip to Uganda that he discovered his love for travelling. In the meantime he has been to many places on different continents.

ELSEVIER

ESTRO
European Society for RADIOTHERAPY & ONCOLOGY

A Family of Radiation Oncology Journals from ESTRO

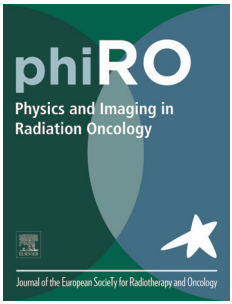
ESTRO and Elsevier proudly announce three new open access journals in the field of radiation oncology to accompany the premier journal in the field, *Radiotherapy & Oncology*. ESTRO's family of journals further the Society's mission to foster the role of radiation oncology to improve the care of patients with cancer.



Clinical and Translational Radiation Oncology – ctRO

All aspects of clinical and translational radiation oncology research, particularly new developments in radiobiology, clinical interventions and treatments, data sciences, epidemiology, and oncopolicy.

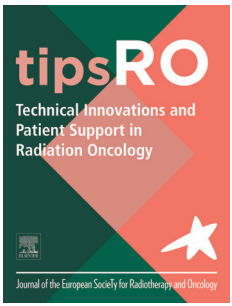
Editors-in-Chief:
Pierre Blanchard, *Villejuif, France*
Daniel Zips, *Tübingen, Germany*



Physics and Imaging in Radiation Oncology – phiRO

Medical physics and imaging in radiation oncology.

Editors-in-Chief:
Lorenzo Bonomo, *Rome Italy*
Ludvig Muren, *Aarhus, Denmark*



Technical Innovations and Patient Support in Radiation Oncology – tipsRO

Technology and patient care, including treatment planning, workflows and delivery; treatment verification; supportive care; psycho-oncology; patient reported outcome measures; risk management; radiotherapy quality management and control; and personalisation.

Editors-in-Chief:
Sara Faithfull, *Guildford, UK*
Michelle Leech, *Dublin, Ireland*

Read volume 1 and submit your own work

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PROGRAMME

Pre-meeting courses

CLINICAL PRE-MEETING COURSE

Patient Reported Outcome Measures (PROMs) in radiotherapy research and clinical practice

FRIDAY 5 MAY, 2017

08:15-17:00 | SCHUBERT

Course directors: C. Grau (DK) and T. Holch (UK)

Course aim

To provide an overview of the current and potential future roles of PROMs in radiotherapy research and routine care settings.

Learning objectives

On completion of this course, participants will be able to:

- Assess the role of PROMs in clinical practice and within clinical trials
- Evaluate the use of PROM-based models to predict patient risk of toxicity after radiotherapy and ion beam therapy
- Examine radiotherapy dose-volume relationships involved in normal tissue complication probability (NTCP).

Who should attend?

Clinicians, allied health care professionals and researchers interested in:

- Improving their knowledge of the current and future role of PROMs
- Improving patient outcomes in radiotherapy
- Developing models predicting risk of radiotherapy toxicity.

Programme

08:15-08:25 **Introduction and overview – setting the scene**
C. Grau (DK) and T. Holch (UK)

08:25-08:55 **The value of patient-reported outcomes (PROMs) in cancer care**
C. Johansen (DK)

08:55-09:55 **Session 1: What are the methodological and practical challenges associated with the collection and use of PROMs?**

08:55-09:25 **Selection of measures; Time points; Electronic vs paper**
B. Holzner (AU)

09:25-09:35 **Translation into different languages**
S. Davidson (UK)

09:35-09:55 **Patient understanding and non-compliance**
T. Holch (UK)

09:55-10:25 **Coffee break**

10:25-12:05 **Session 2: Implementation of PROM in research and clinical practice in different cancer sites**

10:25-10:50 **Prostate and lung cancer**
A. Henry (UK)

10:50-11:15 **Breast and head and neck cancer**
P. Bidstrup (DK)

11:15-11:40 **Gynaecological cancer**
S. Davidson (UK)

11:40-12:05 **REQUITE study (radiogenomics)**
C. West (UK)

12:05-13:05 **Lunch**

13:05-14:05 **Session 3: Using PROMs and dose-volume parameters to understand treatment complications**

13:05-13:35 **The advantages of using PROMs as the basis for complication probability modelling**
J. Deasy (USA)

13:35-14:05 **Role of PROMs in the model-based selection of patients for proton therapy**
H. Langendijk (NL)

14:05-15:35 **Session 4: ePROMs**

14:05-14:35 **eRAPID: feasibility of completion during and six months post treatment**
T. Holch (UK)

14:35-15:05 **OPTIMAL: longitudinal follow up using ePROMS**
A. Gilbert (UK)

15:05-15:35 **Development and feasibility of an ePROM in an ongoing RCT in breast cancer follow-up**
P. Bidstrup (DK)

15:35-15:55 **Coffee break**

15:55-16:20 **Standard of PROM reporting in trials**
T. Holch (UK)

16:20-16:45 **Discussion: how to integrate PROMs into clinical practice?**
All

16:45-17:00 **Future directions and research priorities in the development of PROM measures and the applications of PROM data**
Moderator: C. Grau (DK)

GEC-ESTRO WORKSHOP

Innovations in brachytherapy

FRIDAY 5 MAY 2017

08:00-17:00 | STOLZ 1-2

Course directors: C. Kirisits (AT) and P. Petric (QA)

Workshop aim

Brachytherapy is a treatment modality with long tradition, based on standardised techniques and extensive experience of different schools for several decades. In the last years we have witnessed an increasing amount of exciting developments in terms of brachytherapy technology, imaging, intervention methods and dose delivery devices. In some cases, these developments have not yet reached the level of state of the art in general, but are discussed between different traditional 'schools' The aim of this workshop is to give an overview of some of the most promising new tools and techniques available. It will allow a moderated debate about pros and cons and interactive discussion with the participants. The optimal use of each technique for each patient group will be discussed. Instead of comparing the technologies in a competitive manner, the workshop will aim to emphasise their complementarity.

Learning objectives

- Discover the clinical benefits and limitations of different kind of applicators for intracavitary and superficial brachytherapy techniques (including customised and 3D printed applicators)
- Distinguish dosimetric properties of shielded, rotational and electronic brachytherapy dose delivery devices
- Compare state of the art balloon and interstitial techniques for partial breast brachytherapy
- Interpret the evidence and experience with modern techniques for anorectal brachytherapy
- Justify the use of current state of the art prostate brachytherapy by comparison with modern external beam treatments
- Modify current practice by using MRI and different ultrasound approaches for prostate, gynecological and anorectal interventions and treatment planning.

Who should attend?

- Radiation and clinical oncologists
- Physicists
- Radiologists
- Urologists
- Gynaecologists
- Surgeons
- Brachytherapy technologists
- Specialist nurses.

Programme

08:00-09:50 **Modulation of implant geometry**

08:00-08:30 **Modern IC/IS application techniques I**
U. Mahantshetty (IN)

08:30-09:00 **Modern IC/IS application techniques II**
J. L. Guinot (ES)

09:00-09:30 **Stereolitography / Individualised 3D printed applicators**
R. Hudej (SI)

09:30-09:50 **Discussion/Debate**

09:50-10:20 **Coffee break**

10:20-11:00 **Modulation of direction and intensity of dose emission**

10:20-10:50 **Applicators: shielding techniques**
W. Y. Song (CA)

10:50-11:00 **Discussion/Debate**

11:00-12:20 **Modulation of implant environment**

11:00-11:30 **Thermobrachytherapy**
O. J. Ott (DE)

11:30-12:00 **Exploring other directions of applicator development**
C. Kirisits (AT) / P. Petric (QA)

12:00-12:20 **Debate**

12:20-13:20 **Lunch**

13:20-15:10 **Navigation of applicator insertion and verification of dose delivery**

13:20-13:50 **Dose delivery verification: principles and methods**
K. Tanderup (DK)

13:50-14:20 **Real-time navigation of insertion**
D. Baltas (DE)

14:20-14:50 **Do we need brachytherapy when using modern external beam methods? Or how does this compare to EBRT?**
P. Hoskin (UK)

14:50-15:10 **Discussion/Debate**

15:10-15:40 **Coffee break**

15:40-17:00 **Imaging for brachytherapy treatment planning**

15:40-16:10 **Ultrasound vs. MRI for brachytherapy treatment planning**
M. Schmid (AT)

16:10-16:40 **Multi-parametric MRI for target volume definition in brachytherapy – where are we now?**
B. Carey (UK)

16:40-17:00 **Discussion/Debate**

INTERDISCIPLINARY PRE-MEETING COURSE

Integration of multimodality imaging in radiation oncology to improve target definition and modified dose prescription

FRIDAY 5 MAY 2017

08:45-17:00 | STRAUS 2-3

Course directors: U. van der Heide (NL) and D. Zips (DE)

Learning objectives

- To learn how modern imaging technology such as functional MRI and PET influences today's radiotherapy
- To better understand the concept how functional imaging can be used for better target definition and individual dose-prescriptions
- To discuss with experts the current state-of-the-art in main disease sites including cancers of the prostate, lung, rectum, head and neck, brain and cervix
- To understand limitations and potential pitfalls when using advanced imaging
- To gain knowledge in how to implement advanced imaging in routine radiation oncology.

Who should attend?

Radiation oncologists, medical physicists, biologists and RTTs with interest in functional imaging for better radiation oncology. The course will provide 'teaching level' lectures with basics for attendees who want to refresh their knowledge in the field and, in addition it will provide 'in-depth' discussions with experts in specific indications.

Programme

08:45-10:15 **Introduction, biology, imaging technology and transfer in radiation oncology**

- 08:45-09:15 **Clinical background**
  U. van der Heide (NL) and D. Zips (DE)
- 09:15-09:45 **Imaging biology for radiation oncology**
  J. Bussink (NL)
- 09:45-10:15 **Update on advanced imaging technology, including hybrid imaging**
  V. Goh (UK)

10:15-10:45 **Coffee break**

10:45-11:15 **Specific requirements and workflows to integrate multimodality imaging for target definition and modified dose-prescriptions**
T. Nyholm (SE)

11:15-11:45 **Lessons learned: the example of DCE-MRI in radiation oncology**
J. Kallehauge (DK)

11:45-12:15 **Discussion**

12:15-13:15 **Lunch**

13:15-15:15 **Disease-specific application of multimodality imaging in radiation oncology**

13:15-13:45 **Prostate cancer**
U. van der Heide (NL)

13:45-14:15 **Lung cancer**
U. Nestle (DE)

14:15-14:45 **Head and neck cancer**
D. Thorwarth (DE)

14:45-15:15 **Rectal cancer**
K. Haustermans (BE)

15:15-15:45 **Coffee break**

15:45-16:15 **Glioma**
A. Laprie (FR)

16:15-16:45 **Cervical cancer**
H. Lyng (NO)

16:45-17:00 **Final discussion and summary**
U. van der Heide (NL) and D. Zips (DE)

PHYSICS PRE-MEETING COURSE

Medical physics aspects of particle therapy

FRIDAY 5 MAY 2017

08:30-17:00 | LEHAR 1-3

Course directors: M. Schwarz (IT) and J. Farr (USA)

Course aim

The use of 'heavy' charged particles (mostly protons and carbon ions) is an expanding modality in radiation oncology and such expansion is in advance of the number of trained medical physicists in the field. In addition, patients who may benefit from particle therapy are often referred from X-ray treatment facilities. To assist in external referrals, all therapeutic medical physicists should have some knowledge of particle therapy, and this course seeks to provide this introductory education. Due to the evolutionary nature of particle therapy, a balance of fundamental and current topics will be covered.

Learning objectives

Upon completion of the course, successful learners will be able to:

- Comprehend basic particle interactions with matter and radiobiology
- Compare aspects of particle therapy systems
- Know methods of particle beam dosimetry
- Discover insight into particle therapy specific imaging
- Know about acceptance testing and clinical commissioning
- Comprehend machine and patient specific quality assurance methods
- Critique particle therapy specific treatment planning techniques
- Compare particle therapy with photon therapy treatment plans
- Interpret particle therapy uncertainties, detections, and their mitigations
- Appraise how to select the most appropriate patient indications for particle therapy.

Who should attend?

The target group consists of medical physicists, medical physics assistants, dosimetrists and researchers who are interested in improving their knowledge of clinical particle therapy.

Programme

08:30-08:40 **Introduction to the course**

M. Schwarz (IT) and J. Farr (USA)

08:40-09:20	**Current status of particle therapy: clinical aspects and RBE** *P. Fossati (IT)*
09:20-10:00	**Reminder of 'heavy' charged particles physics** *H. Palmans (AT)*
10:00-10:30	**Coffee break**
10:30-11:10	**Acceptance testing and commissioning of particle therapy systems and their associated methods** *J. Farr (USA)*
11:10-11:50	**Uncertainties in particle therapy and their mitigation** *M. Moyers (USA)*
11:50-12:30	**Treatment planning** *M. Schwarz (IT)*
12:30-13:30	**Lunch**
13:30-14:15	**Motion management** *A. Knopf (NL)*
14:15-15:00	**Dose and range verification** *K. Parodi (DE)*
15:00-15:30	**Coffee break**
15:30-16:10	**Volumetric image guidance and adaptive treatments in particle therapy** *K. Teo (USA)*
16:10-16:40	**Treatment planning comparisons for patient selection** *M. Hoogeman (NL)*
16:40-17:00	**What will medical physics in particle therapy look like ten years from now?** *A. Lomax (CH)*
17:00	**Conclusions** *M. Schwarz (IT) and J. Farr (USA)*

RADIOBIOLOGY PRE-MEETING COURSE

Clinical application of biomarkers: how to discover, explore, and validate biomarkers for normal tissue toxicity and tumour response

FRIDAY 5 MAY 2017

08:45-17:00 | LEHAR 4

Course directors: J. Alsner (DK) and MC. Vozenin (CH)

Course aim

Enable participants to understand the scientific and clinical aspects associated with discovery, exploration, and validation of biomarkers for personalised/precision radiation oncology (PRO) and raise awareness of key challenges in this important field.

Learning objectives

- To understand the basic principles of prognostic and predictive biomarkers
- To become familiar with biomarkers for normal tissue toxicity
- To become familiar with biomarkers for tumour response
- To appreciate the need for imaging and molecular biomarkers for PRO
- To understand the principles for validation of biomarkers
- To become familiar with legal and patent aspects for the clinical use of biomarkers.

Who should attend?

- Radiation oncologists, particularly those in the early stage of their career, who are keen to understand how biomarkers are important for PRO
- Radiation biologists seeking information on how to maximise the clinical impact of their scientific discoveries
- Radiation physicists and RTTs looking for an overview and update of recent and ongoing developments in the field of biomarkers.

Programme

08:45-09:00 **Introduction and overview**
J. Alsner (DK)

09:00-09:30 **Prognostic and predictive biomarkers**
J. Alsner (DK)

09:30-12:30 **Session 1: Tumour response**

09:30-10:00 **Genetic biomarkers: mutations**
G. Higgins (UK)

10:00-10:30 **Coffee break**

10:30-11:00 **Genetic biomarkers: mRNA/miRNA profiles**
M. De Jong (NL)

11:00-11:30 **Imaging biomarkers: PET/MR**
C. Gani (DE)

11:30:12:00 **Imaging biomarkers: radiomics**
R. Leijenaar (NL)

12:00-12:30 **Circulating tumour cells and cell-free DNA/RNA**
C. Decraene (FR)

12:30-13:30 **Lunch**

13:30-15:00 **Session 2: Normal tissue**

13:30-14:00 **Genetic biomarkers, genomic DNA**
N. Andreassen (DK)

14:00-14:30 **Genetic biomarkers, mitochondrial DNA**
P. Lambin (NL)

14:30-15:00 **Functional biomarkers**
C. Talbot (UK)

15:00-15:30 **Coffee break**

15:30-16:30 **Session 3: Validation**

15:30-16:00 **Design methodology for biomarker based radiotherapy trials**
S. Collette (BE)

16:00-16:30 **Clinical trial example (EORTC-1219): randomised multicenter study testing a radiosensitiser and a predictive biomarker**
B. Sørensen (DK)

16:30-17:00 **Final discussion**
M.C Vozenein (CH) and J. Alsner (DK)

RTT PRE-MEETING COURSE

Quality and risk management in practice

FRIDAY 5 MAY 2017

09:00-17:00 | LEHAR 5

Course directors: M. Coffey (IE) and S. Johansen (NO)

Course aim

The course has two main aims: to explore some of the issues surrounding reporting and managing incidents and near incidents in the clinical setting and to consider a practical approach to quality management that enhances safety.

Learning objectives

On completion of this course, participants will be able to:

- Appreciate the concept of risk management and a safety culture
- Evaluate the issues surrounding reporting and how to address them in the clinical setting
- Consider how quality indicators, benchmarking, reporting and learning and LEAN management can be introduced into a department to improve overall quality of the service
- Participate in a lean exercise and evaluate its applicability in practice.

Who should attend?

The course is primarily for radiation therapists (RTTs) but is applicable to all professionals and trainees.

Programme

09:00-09:50	**Welcome and overview of risk management and safety culture** *M. Coffey (IE)*
09:50-10:10	**Issues surrounding whistleblowing** *M. Coffey (IE)*
10:10-11:00	**Benchmarking in the clinical setting** *A. Vaandering (BE)*

11:00-11:30	**Coffee break**
11:30-12:10	**How to approach whistleblowing** *L. Fog (DK)*
12:10-13:00	**Investigating a reported incident** *P. Scalliet (BE)*
13:00-14:00	**Lunch**
14:00-14:30	**LEAN management improving safety** *P. Simons (NL)*
14:30-15:30	**A practical exercise using LEAN** *P. Simons (NL)*
15:30-16:00	**Coffee break**
16:00-17:00	**Feedback and discussion** *Faculty and participants*
17:00	**Concluding remarks** *M. Coffey (IE) and S. Johansen (NO)*

ESTRO-EORTC workshop

Methodologies for conducting trials and other studies, including data handling and analysis

FRIDAY 5 MAY 2017

13:30-18:00 | GALLERIA 11-12

Course directors: V. Grégoire (BE) and D. Lacombe (BE)

Programme

13:30-14:00	**Specifics of radiotherapy studies: designs and endpoints that work, or do not work so well** *S. Collette (BE)*
14:00-14:45	**Studies of novel radiation technologies** *M. Baumann (DE)*
14:45-15:30	**Methodological aspects of studies of combinations drug-radiation** *E. Deutsch (FR)*
15:30-16:00	**Coffee break**
16:00-16:30	**Recycling old studies: how to use data from the past to inform about today's and tomorrow's treatments: experience in lymphoma** *M. Maraldo (DK)*
16:30-17:00	**Recycling old studies: how to use data from the past to inform about today's and tomorrow's treatments: Experience in early breast cancer** *M. Mast (NL)*
17:00-17:30	**Long term survivors of radiation: outcome after first local failure of early breast cancer** *C. Vrieling (CH)*
17:30-18:00	**Discussion**

Contouring workshops

STOLZ 0

FALCON (Fellowship in Anatomic DeLineation and CONtouring) is the multifunctional ESTRO platform for contouring and delineation. Eight such workshops have been planned for ESTRO 36.

Programme

- Intraprostatic relapses: Friday 5 May 2017 from 08:00-10:00
  (repeated Saturday 6 May from 14:45-16:45)
  Chair: C. Salembier (BE)
  Panellist: F. Alongi (IT) and F. Giammarile (FR)

- Liver SBRT: Friday 5 May 2017 from 10:30-12:30
  (repeated Sunday 7 May from 14:45-16:45)
  Chair: B. de Bari (FR)
  Panellist: EM Ozsahin (CH)

- Anal canal: Friday 5 May 2017 from 13:30-15:30
  (repeated Monday 8 May from 14:45-16:45)
  Chair: M. Hawkins (UK)
  Panellist: A. Gambacorta (IT) and Giuditta Chiloiro (IT)

- Spine SBRT: Friday 5 May 2017 from 16:00-18:00
  (repeated Tuesday 9 May from 08:30-10:30)
  Chair: Matthias Guckenberger (CH)
  Panellist: L. Schiappacasse (CH) and M. Dahele (NL)

Educational aims of the workshops

- Provide attendees with the opportunity for interactive training on contouring CTV, GTV and when relevant OAR and to discuss their results with international experts in the field
- Provide the participants with knowledge on how contouring is performed in different institutions and on the existing recommendations and guidelines
- Provide the participants with consistent information to validate or modify/improve their daily contouring practice.

Methodology for the workshops

- Clinical case presentation
- Two delineations: pre- and post guidelines
- Presentation of the contouring guidelines recommended by the experts for the delineation of the CTV, GTV +/- OAR and bibliographic references for the therapeutic strategy chosen
- Inter-comparison of the contours by the participants and by the experts
- Justification and comments
- Analysis of the heterogeneity index.

Requirements

Participants are required to bring their own computer for contouring.

About FALCON

FALCON workshops have been organised at ESTRO congresses since 2010 and have been growing steadily in popularity.

Attending a FALCON workshop offers the opportunity for individual professionals to:

- Validate their contouring practice during live workshops by comparing them with those from experts and other participants
- Learn the indications proposed by the experts that coordinate the workshops
- Discuss with other participants, experts and panellists
- Communicate and use the delineation guidelines in order to further integrate them into daily practice.

CONTOURING OPPORTUNITIES AT THE ESTRO BOOTH

How to improve your contouring skills? ESTRO can show you at ESTRO 36 how the FALCON Educase tool can support you.

Find on site at ESTRO 36 several opportunities to improve your contouring skills. Short demonstrations or, if you have a bit more time available, hands on mini workshops have been tailored specifically to your busy agenda during the congress: concise, interactive and very educational.

15 minutes during coffee breaks: FALCON demonstrations

During coffee breaks, find out what all the hype is about FALCON Educase. See, learn and experience how it and the workshops could open avenues of knowledge for you.

30 minutes during lunchtime: FALCON mini workshops

Browsing through the company booths looking for the latest innovation? Then just make a detour to the ESTRO booth to learn how the FALCON workshops can help you understand the theory and improve your daily clinical practice.

Join us at the ESTRO booth # 1000 in the exhibition area

Multidisciplinary tumour board sessions

HEAD AND NECK SQUAMOUS CELL CARCINOMA

6 MAY 2017 FROM 10:30-11:30

Chair: V. Grégoire (BE)

ESTRO fellow: N. Dinapoli (IT)

Panellists:

1. Surgeon: C. Simon, Lausanne (CH)
2. Medical oncologist: Füreder Thorsten, Medical University of Vienna, Department of Internal Medicine I (AU)
3. Diagnostician: Stefan Nemec, Medical University of Vienna, Department of Radiology and Nuclear medicine (AU)

LYMPHOMA

7 MAY 2017 FROM 10:30-11:30

Chair: L. Specht (DK)

ESTRO fellow: B. De Bari (FR)

Panellists:

1. Radiologist: Marius Mayerhöfer, Medical University of Vienna, Department of Radiology and Nuclearmedicine (AU)
2. Medical oncologist/haematologist: Ulrich Jäger, Medical University of Vienna, Department of Internal Medicine I, Division of Hematology (AU)
3. Pathologist: Ingrid Simonitsch-Klupp , Medical University of Vienna, Institut of Pathology (AU)

BRAIN METASTASES

8 MAY 2017 FROM 10:30-11:30

Chair: M. Hoyer (DK)

ESTRO fellow: O. Person (IS)

Panellists:

1. Surgeon: Thomas Czech, Medical University of Vienna, Department of Neurosurgery (AU)
2. Medical oncologist: Rupert Bartsch, Medical University of Vienna, Department of Internal Medicine I (AU)

Young scientists programme

YOUNG TRACK PROGRAMME
Monday 8 May 2017

08:00 - 08:40 **TEACHING LECTURE**

How to write a research proposal for a grant

Chair: Tobias Gauer (DE)

Speaker: Philippe Lambin (NL)

08:45 - 10:00 **CAREER SYMPOSIUM – EDUCATION AND RESEARCH GRANTS**

Chair: Ludwig Dubois (NL)

Co-chair: Laure Marignol (IE)

1. **ERC grants – how to succeed**
   Speaker: Marc Vooijs (NL)

2. **ESTRO educational grants and mobility grants**
   Speaker: Marie-Catherine Vozenin (CH)

3. **Three reports ESTRO grant awardees**

   ESTRO Educational Grant - if you don't try, you won't win
   Speaker: Mateusz Spalek (PL)

   ESTRO mobility grant - Establishing intravital brain imaging in preclinical models
   Speaker: Joanna Birch (UK)

   Experience with the ESTRO mobility grant: proton irradiation of a 3D dosimeter
   Speaker: Ellen-Marie Høye (DK)

10:00 - 10:30 **Coffee break**

10:30 - 11:30 **KEYNOTE LECTURE**

Chair: Wouter van Elmpt (NL)

Co-chair: Daniela Thorwarth (DE)

Title TBC
Speaker TBC

13 :00-15 :00 **LUNCH SYMPOSIUM - New journals *phiRO, ctRO, tipsRO* - Meet the editors**
Chair: Kathrine Røe Redalen (NO)
Co-chair: Pierrefrancesco Franco (IT)

13:00 - 13:10 **How to write a good paper - Editor's view**
Ludvig Muren (DK)

13:10 - 13:20 **How to do a good paper review - Editor's view**
Daniel Zips (DE)

13:20 - 13:30 **How to make a paper high impact - Editor's view**
Sara Faithfull (UK)

13:30 - 13:50 **The scholarly publishing cycle and open access publishing**
Sarah Jenkins (UK)

13:50 - 14:15 **Questions from the audience**

14:15 - 15:00 **Meet the editors (individual slots with sign-up)**

14:45 – 16:15 **SCIENTIFIC SYMPOSIUM - Young ESTRO meets ESTRO School**
Students and specialists discuss guidelines and current controversies related to clinical cases
Chair: Berardino De Bari (FR)
Co-chair: Yannick Eller (CH)

Introduction and presentation of FALCON (Fellowship in Anatomic delineation and CONtouring) on-line contouring system as a tool for e-learning
Speaker: Jesper G. Eriksen (DK)

SPEAKERS:
Lung cancer: literature overview and discussion of clinical case
Medical student: Lukas Käsmann (GE)
Senior: Branislav Jeremic (Serbia)

Cervical cancer: literature overview and discussion of clinical case
Medical student: Louisa Bolm (DE)
Senior: Laura Motisi (IT)

Rectal cancer: literature overview and discussion of clinical case
Medical student: Imon Barua (NO)
Senior: Karin Haustermans (BE)

16:15 – 16:45 **Coffee break**

16:45 - 17:00 **INFORMATION FROM YOUNG ESTRO COMMITTEE**
Report back and follow up on Agora meeting

17:00 – 17:15 **Interactive quiz**

17:15 – 18:00 **Young networking**

SCIENTIFIC PROGRAMME

Saturday 6 May 2017

TEACHING LECTURE

The role of radiotherapy in small cell lung cancer -current status and future developments

08:00 - 08:40 | AUDITORIUM

Chair: U. Nestle (Germany)

08:00 > The role of radiotherapy in small cell lung cancer -current status and future developments
Speaker: R. Dziadziuszko (Poland) SP-0001

TEACHING LECTURE

Immunotherapy

08:00 - 08:40 | SCHUBERT

Chair: J. Bussink (The Netherlands)

08:00 > Immunotherapy
Speaker: G. Coukos (Switzerland) SP-0002

TEACHING LECTURE

MRI for RO physicists: what is what? QA geometrical distortions

08:00 - 08:40 | STRAUS 2-3

Chair: M. Philippens (The Netherlands)

08:00 > MRI for RO physicists: what is what? QA geometrical distortions
Speaker: E. Paulson (USA) SP-0003

TEACHING LECTURE

Cavity Theory: separating the facts from the myths

08:00 - 08:40 | LEHAR 1-3

Chair: N. Jornet (Spain)

08:00 > Cavity Theory: separating the facts from the myths.
Speaker: A. Nahum (UK) SP-0005

TEACHING LECTURE

High tech or low tech for metastatic disease, how does one decide and what is the cost-benefit?

08:00 - 08:40 | STRAUS 1

Chair: C. Dickie (Canada)

08:00 > High tech or low tech for metastatic disease, how does one decide and what is the cost-benefit?
Speaker: Y. Van der Linden (The Netherlands) SP-0006

TEACHING LECTURE

Gene editing: How this technique can be used to study radiation responses?

08:00 - 08:40 | LEHAR 4

Chair: R. Bristow (Canada)

08:00 > Gene editing: How this technique can be used to study radiation responses?
Speaker: L. Marignol (Ireland) SP-0007

TEACHING LECTURE

Target delineation and target definition for PBI

08:00 - 08:40 | STOLZ 1-2

Chair: E. Van Limbergen (Belgium)

08:00 > Target delineation and target definition for Partial Breast Irradiation after closed cavity surgery and oncoplastic surgery
Speaker: V. Strnad (Germany) SP-0008

08:20 > Target delineation and target definition for PBI after open cavity surgery
Speaker: T. Major (Hungary) SP-0009

JOINT SYMPOSIUM

ESTRO-ASTRO: Cutting edge combined modality therapies (Focus on NSCLC)

08:45 - 10:00 | AUDITORIUM

Chair: Y. Lievens (Belgium)

Chair: S. Hahn (USA)

08:45	>	The gains to be made by combined modality treatment in NSCLC: setting the scene of new possibilities *Speaker: M. Stuschke (Germany)*	SP-0010
09:03	>	The use of biomarkers for individualised treatment in NSCLC *Speaker: J. Belderbos (The Netherlands)*	SP-0011
09:21	>	Abscopal responses in metastatic non-small cell lung cancer (NSCLC): a phase II study of combined radiotherapy and ipilimumab *Speaker: S. Formenti (USA)*	SP-0012
09:39	>	The use of novel technologies (e.g. protons) in NSCLC *Speaker: Z. Liao (USA)*	SP-0013

SYMPOSIUM WITH PROFFERED PAPERS

Radiotherapy plus immunotherapy combination: rationale and results so far

08:45 - 10:00 | SCHUBERT

Chair: R. Nout (The Netherlands)

Co-chair: H. Geinitz (Austria)

08:45	>	*In situ* Cancer Vaccines: Tumor destruction and immune stimulation for local and systemic tumor control. *G. Adema (The Netherlands)*	SP-0014
09:03	>	The impact of tumour infiltrating lymphocytes on clinical outcome after (chemo)radiotherapy *J. Galon (France)*	SP-0015
09:21	>	Radiotherapy and immunotherapy combination: paradigm changing or just hype? *S.J. Dovedi (UK)*	SP-0016
09:39	>	Combined High Dose Radiation and Ipilimumab in Metastatic Melanoma, a Phase I Dose Escalation Trial. *K. De Wolf, V. Kruse, L. Brochez, N. Sundahl (Belgium), M. Van Gele, R. Speeckaert, P. Ost*	OC-0017
09:49	>	Chemoradiation-induced altered profile of PD-L1 and CD8+ TILs indicated prognosis in rectal cancer *Y.J. Lim (Republic of Korea), J. Koh, S. Kim, S.R. Jeon, E.K. Chie, K. Kim, G.H. Kang, S.W. Han, T.Y. Kim, S.Y. Jeong, K.J. Park, H.G. Wu*	OC-0018

JOINT SYMPOSIUM

ESTRO-AAPM: New technological and computational developments in particle therapy

08:45 - 10:00 | STRAUS 2-3

The session will focus on three aspects:

The role of 'compact solutions' in proton therapy. We'll review what is available, see an example of how a centre did fit its department to the new needs, what it takes to 'shrink' these facilities further to fit in a conventional bunker and whether a fixed line may still be adequate.

Concerning imaging, we'll discuss the role of Cone beam CT(CBCT), i.e. design of different CBCT systems, their use for different treatment sites, its quantitative applications, the limitations of different methods for using CBCT for dose calculation, and the use of CBCT in an adaptive ion therapy.

On treatment planning, we'll outline the limitations of compensating systematic and random uncertainties by dose planning, argue whether probabilistic planning can achieve risk minimisation of geometric uncertainties via direct consideration in dose optimisation and finally we'll bring up the issue of the uncertainties associated with estimating uncertainties.

Chair: M. Schwarz (Italy)
Co-chair: T. Bortfeld (USA)

08:45 > Scaling down proton therapy facilities to fit into photon vaults
Speaker: T. Bortfeld (USA) SP-0019

09:10 > Integrating CBCT in ion beam therapy: challenges and opportunities beyond anatomical guidance
Speaker: K. Teo (USA) SP-0020

09:35 > New horizons in probabilistic and robust treatment planning in particle therapy
Speaker: M. Alber (Germany) SP-0021

SYMPOSIUM

CT imaging, new developments

08:45 - 10:00 | LEHAR 1-3

Modern radiotherapy relies heavily on pre-treatment imaging, both to determine the target volumes, delineate organs at risk and to build an attenuation model of the patient to facilitate accurate dose calculations. Magnetic resonance and positron

emission imaging are attracting a lot of attention, but the developments of computerised tomography (CT) is also significant. The session will provide an overview of some of the latest advancements in CT and their potential to improve current practice in radiotherapy.

Chair: T. Nyholm (Sweden)
Co-chair: M. Aznar (Denmark)

08:45 > Current status and potential of dual energy and spectral CT
Speaker: J. Andersson (Sweden) SP-0022

09:10 > CT image quality: Using a model observer for clinically relevant optimisation
Speaker: N. Ryckx (Switzerland) SP-0023

09:35 > The potential of new CT technologies for radiotherapy with photons and protons
Speaker: W. Van Elmpt (The Netherlands) SP-0024

SYMPOSIUM

High tech or low tech for metastatic disease, how does one decide and what is the cost-benefit?

08:45 - 10:00 | STRAUS 1

This session will explore the potential for curative treatment in metastatic disease, available treatment options, 'pros' and 'cons' of using high technology in metastatic disease, the limitations and the presence or absence of clear patient selection criteria. The findings of a single institutions study on clinician preference for low and high technology will be presented. With respect to palliation the patient perception of a single fraction option for painful bone metastases and the application of LEAN Six Sigma in optimising work-flow. The final presentation will outline trial findings on technical equipment and medical staff resource requirements for stereotactic radiotherapy and radiosurgery (QUIRO-DEGRO trial)

Chair: M. Coffey (Ireland)
Co-chair: A. Wegmayr (Austria)

08:45 > High tech approaches for curative treatment, when is enough enough?
Speaker: J. Kazmierska (Poland) SP-0025

09:10 > Optimising the workflow of palliative treatment using Lean Six Sigma methodology
Speaker: M. Kamphuis (The Netherlands) SP-0026

09:35 > Evaluation of time, attendance of medical staff,and resources during stereotactic radiotherapy/radiosurgery: QUIRO-DEGRO trial
Speaker: J. Hörner-Rieber (Germany) SP-0027

SYMPOSIUM WITH PROFFERED PAPERS

Novel approaches in heart / lung matters

08:45 - 10:00 | LEHAR 4

Recent data suggesting that cardiac toxicity is not an exclusively late occurring complication has revived that interest in it mechanistic basis and approaches for prevention and treatment. Therefore, pathogenic mechanisms, associated therapeutic targets and experimental work testing potential therapeutics to modulate the induction of cardiac damage by (chemo-) radiotherapy, will be discussed.

Chair: P. Van Luijk (The Netherlands)
Co-chair: A. De Vries (Austria)

08:45 > State of the art in heart effects
M.C. Vozenin (Switzerland) SP-0028

09:12 > Pharmacological modulation of cardiac radiation injury
M. Boerma (USA) SP-0029

09:39 > *In vitro* study of FLASH vs. conventional dose-rate irradiation: Cell viability and DNA damage repair
A. Beddok (France), C. Fouillade, E. Quelennec, V. Favaudon OC-0030

09:49 > Global changes in the glycosylation of irradiated endothelial cells with functional consequences
C. Jaillet, W. Morelle, M.C. Slomianny, V. Paget, G. Tarlet, V. Buard, S. Selbonne, F. Caffin, E. Rannou, P. Martinez, A. François, F. Foulquier, F. Allain, F. Milliat, O. Guipaud (France) OC-0031

SYMPOSIUM

Expanding brachytherapy indications

08:45 - 10:00 | STOLZ 1-2

Integrating modern imaging modalities or tools of interventional radiology as part of the management of cancer patients might provide new opportunities for brachytherapy in a variety of indications. In fact, the next step of treatment optimisation in brachytherapy might rely on multidisciplinary therapeutic strategies, based either on a more accurate definition of target volumes, or providing a minimally invasive access to treat target lesions in deep anatomic sites or close to critical organs. This session will give an overview on how could brachytherapy indications be expanded or refined by a comprehensive integration of high-tech

radiology in brachytherapy treatment planning. Moreover, the speakers will illustrate their visions and strategies on how to implement this perspective in clinical practice and how to improve treatment safety.

Chair: C. Chargari (France)
Co-chair: T. Knocke-Abulesz (Austria)

08:45 > The technique for CT/MR guided hepatic implantations
Speaker: N. Tselis (Germany) SP-0032

09:10 > Optical and tracking technologies for navigation in brachytherapy
Speaker: R. Weersink (Canada) SP-0033

09:35 > Using multiparametric US to redefine target volumes in brachytherapy
Speaker: H. Wijkstra (The Netherlands) SP-0034

PROFFERED PAPERS

Radiobiological modeling

08:45 - 10:00 | LEHAR 5

Chair: J. Overgaard (Denmark)
Chair: P. Munck af Rosenschöld (Denmark)

08:45 > Characterization and validation of a radiomics signature for NSCLC and head and neck cancer patients
A. Jochems (The Netherlands), F. Hoebers, D. De Ruysscher, R. Leijenaar, F. Walsh, B. O´Sullivan, J. Bussink, R. Monshouwer, R. Leemans, P. Lambin OC-0035

08:55 > Does androgen deprivation therapy result in lowering the alpha / beta values in prostate cancers?
N.R. Datta (Switzerland), E. Stutz, S. Rogers, S. Bodis OC-0036

09:05 > Low dose volume effect is a critical determinant for radiation-induced lung fibrosis
G. Defraene (Belgium), M. La Fontaine, S. Van Kranen, B. Reymen, J. Belderbos, J.J. Sonke, D. De Ruysscher OC-0037

09:15 > Patterns in ano-rectal dose maps and the risk of late toxicity after prostate radiotherapy
E. Onjukka (Sweden), C. Fiorino, F. Palorini, A. Cicchetti, I. Improta, C. Cozzarini, C. Degli Esposti, P. Gabriele, R. Valdagni, G. Gagliardi, T. Rancati OC-0038

09:25 > Unique sparing of spatial memory in mice after whole brain irradiation with dose rates above 100Gy/s
K. Petersson (Switzerland), P. Montay-Gruel, M. Jaccard, G. Boivin, J. Germond, B. Petit, F. Bochud, C. Bailat, J. Bourhis, M. Vozenin OC-0039

09:35 > Validation of prospective electronic toxicity registration to audit dose constraints
T.M. Janssen (The Netherlands), A. Dikstaal, M. Kwint, S. Marshall, A.L. Wolf, J. Knegjens, L. Moonen, J. Belderbos, J.J. Sonke, M. Verheij, C. Van Vliet-Vroegindeweij OC-0040

09:45 > Predictors of asymptomatic radiation induced vascular damage to infradiaphragmatic vessels
L. Cella (Italy), R. Liuzzi, P. Romanelli, M. Conson, V. D'Avino, M. Ottaviano, V. Damiano, G. Palmieri, R. Pacelli, M. Mancini OC-0041

POSTER VIEWING 1

Haematology / Paediatrics / Sarcoma

08:45 - 10:00 | POSTER AREA

Chair: R. Haas (The Netherlands)

Chair: M. Lambrecht (Belgium)

> Fractionated-TBI schedules prior to allograft: Study from the Acute Leukemia Working Party (EBMT)
Y. Belkacemi (France), M. Labopin, S. Giebel, L. MiszyK, G. Loganadane, M. Michallet, G. Socié, N. Schaap, J. Cornelissen, I. Yakoub-Agha, A. Nagler PV-0042

> Radiotherapy to the mediastinum in Hodgkin's lymphoma: Is B-VMAT the only arc solution?
C. Hanna (UK), C. Featherstone, S. Smith PV-0043

> Is involved-node radiotherapy for Hodgkin lymphoma safe in routine?
A. Boros (France), R. Sun, J. Arfi Rouche, J. Lazarovici, D. Ghez, J.M. Michot, A. Beaudré, A. Danu, J. Bosq, V. Ribrag, R. Mazeron PV-0044

> Estimation of internal risk volume for coronary arteries after motion evaluation with ECG-gated CT
M. Levis (Italy), C. Fiandra, A.R. Filippi, F. Cadoni, V. De Luca, A. Cannizzaro, D. Garabello, S. Veglia, R. Ragona, U. Ricardi PV-0045

> Comparison of respiratory-induced diaphragm motion during radiotherapy between children and adults
S. Huijskens (The Netherlands), I. Van Dijk, J. Visser, C. Rasch, T. Alderliesten, A. Bel PV-0046

> Whole lung irradiation in patients with osteosarcoma and Ewing sarcoma: a systematic review
L. Ronchi (Italy), E. Farina, A. Zamagni, V. Panni, A. Arcelli, A. Farioli, A. Paioli, S. Ferrari, G.P. Frezza, G. Macchia, F. Deodato, M. Ferro, G. Torre, S. Cilla, A. Ianiro, S. Cammelli, A.G. Morganti PV-0047

> Prognostic impact of tumor size and response in neoadjuvant radiotherapy of soft tissue sarcoma

A. Cortesi (Italy), A. Arcelli, R. Frakulli, L. Giaccherini, S. Bisello, G. Bianchi, D.M. Donati, M. Gambarotti, S. Ferrari, A. Farioli, R. Vanini, G. Macchia, F. Deodato, S. Cilla, V. Picardi, G. Torre, G. Ghigi, A. Romeo, G.P. Frezza, A.G. Morganti, S. Cammelli PV-0048

> Recurrent skull base and extra-cranial chordoma following proton therapy: clinical outcomes.
M. Kountouri (Switzerland), M. Walser, R. Schneider, A. Bolsi, A. Lomax, D. Weber PV-0049

> A randomised controlled study of decision aids to improve clinical trial decisions and recruitment
P. Sundaresan (Australia), B. Ager, P. Butow, S. Tesson, A. Kneebone, D. Costa, H. Woo, M. Pearse, I. Juraskova, S. Turner PV-0050

PROFFERED PAPERS

Joint Clinical - GEC ESTRO: Cervix cancer

10:30 - 11:30 | AUDITORIUM

Chair: R. Pötter (Austria)
Chair: P. Scalliet (Belgium)

10:30 > Fatigue, insomnia, hot flashes (CTCAE) after definitive RCHT+IGABT for cervical cancer (EMBRACE)
S. Smet (Austria), D. Najjari-Jamal, N. BK Jensen, L. Fokdal, J.C. Lindegaard, C. Kirisits, C. Haie-Meder, U. Mahantshetty, I.M. Jürgenliemk-Schulz, E. Van Limbergen, B. Segedin, P. Hoskin, K. Tanderup, R. Pötter, K. Kirchheiner OC-0051

10:40 > Physician assessed and patient reported bladder morbidity after RCHT and IGABT for cervical cancer
L.U. Fokdal (Denmark), K. Kirchheiner, N. Kibsgaard Jensen, J.C. Lindegaard, K. Kirisits, C. Chagari, U. Mahantshetty, I.M. Jürgenliemk-Schulz, B. Segedin, P. Hoskin, R. Pötter, K. Tanderup OC-0052

10:50 > Physician assessed and patient reported limb edema after RCHT + IGABT for cervical cancer (EMBRACE)
D. Najjari Jamal (Austria), S. Smet, N. BK Jensen, L. Fokdal, J.C. Lindegaard, C. Kirisits, C. Chargari, U. Mahantshetty, I.M. Jügenliemk-Schulz, B. Segedin, P. Hoskin, K. Tanderup, R. Pötter, K. Kirchheiner OC-0053

11:00 > Dynamics of patient reported QoL and symptoms after IGRT for locally advanced cervical cancer
S.T. Heijkoop (The Netherlands), R.A. Nout, S. Quint, J.W.M. Mens, B.J.M. Heijmen, M.S. Hoogeman OC-0054

11:10 > Local failures after radiochemotherapy and MR-image-guided brachytherapy in cervical cancer patients

M. Schmid (Austria), C. Haie-Meder, U. Mahanshetty, I.M. Jürgenliemk-Schulz, B. Segedin, P. Hoskin, C. Kirisits, J. Lindegaard, K. Tanderup, R. Pötter OC-0055

11:20 > Bowel morbidity in cervix cancer after RCHT+IGABT; physician and patient reported outcome -EMBRACE
N.B.K. Jensen (Denmark), K. Kirchheiner, L.U. Fokdal, J.C. Lindegaard, C. Kirisits, R. Mazeron, U. Mahantshetty, B. Segedin, I.M. Jürgenliemk-Schulz, P.J. Hoskin, R. Pötter, K. Tanderup OC-0056

SYMPOSIUM

Response adapted treatment

10:30 - 11:30 | SCHUBERT

In this multidisciplinary symposium the potential of response adapted treatment will be explored. At first the mechanism for response heterogeneity will be discussed. The role of cancer stem cells and the hypoxic microenvironment in radiation response will be described. Subsequently, the biological concept of delta-imaging for individualised patient management will be discussed and preclinical proof-of-concept using PET/fMRI will be described together with a review of current clinical evidence. Finally, it will be discussed how to translate treatment response to dose modification and how to realise dose modification in treatment planning and delivery.

Chair: J. Sonke (The Netherlands)
Co-chair: J. But Hadzic (Slovenia)

10:30 > Mechanisms and biomarkers of tumour response heterogeneity
Speaker: S. Chopra (India) SP-0057

10:50 > Current status and future perspective of response adaptation
Speaker: D. Zips (Germany) SP-0058

11:10 > Response optimised treatment planning and guidance
Speaker: B. Vanderstraeten (Belgium) SP-0059

PROFFERED PAPERS

Dosimetry and detector development for particle therapy

10:30 - 11:30 | STRAUS 2-3
Chair: C. Richter (Germany)
Chair: S. Greilich (Germany)

10:30 > Reference dosimetry of proton pencil beams based on dose-area product
C. Gomà (Belgium), S. Safai, S. Vörös OC-0060

10:40 > Development of a 3D plastic Scintillator detector for a fast verification of ocular proton beam
H. Ziri (USA), D. Robertson, S. Beddar OC-0061

10:50 > Correcting for linear energy transfer dependent quenching in 3D dosimetry of proton therapy
E.M. Høye (Denmark), M. Sadel, L.P. Muren, J.B.B. Petersen, P. Skyt, L.P. Kaplan, J. Swakon, L. Malinowski, G. Mierzwińska, M. Rydygier, P. Balling OC-0062

11:00 > Energy resolution and range reproducibility of a dedicated phantom for proton PBS daily QA
L. Placidi (Switzerland), J. Hrbacek, M. Togno, D.C. Weber, A.J. Lomax OC-0063

11:10 > A Fano test for proton beams and the influence of nuclear interactions on ionisation chamber factors
A. Lourenco (UK), H. Bouchard, S. Galer, G. Royle, H. Palmans OC-0064

11:20 > Ion recombination in scanned light-ion beams combining Boag's and Jaffé's theory
S. Rossomme (Belgium), J. Horn, S. Brons, A. Mairani, M. Ciocca, V. Floquet, F. Romano, D. Rodriguez Garcia, S. Vynckier, H. Palmans OC-0065

PROFFERED PAPERS

Quantitative and functional imaging

10:30 - 11:30 | LEHAR 1-3

Chair: M. Philippens (The Netherlands)
Chair: U. Simoncic (Slovenia)

10:30 > Are quality improved CBCT images superior for measuring lung ventilation?
K.R. Jensen (Denmark), U. Bernchou, O. Hansen, C. Brink OC-0066

10:40 > 4DCT imaging to assess radiomics feature stability: an investigation for thoracic cancer
R.T.H.M. Larue (The Netherlands), L. Van De Voorde, J.E. Van Timmeren, R.T.H. Leijenaar, M. Berbée, M.N. Sosef, W.M.J. Schreurs, W. Van Empt, P. Lambin OC-0067

10:50 > Heterogeneous dose escalation in lung: How robust are high FDG-uptake volumes during radiotherapy?
A. Haraldsen (Denmark), C. Lutz, L. Hoffmann, A. Khalil, D. Møller OC-0068

11:00 > Influence of PET radiomics implementation on reproducibility of tumor control prognostic models
M. Bogowicz (Switzerland), R. Leijenaar, S. Tanadini-Lang, O. Riesterer, M. Pruschy, G. Studer, M. Guckenberger, P. Lambin OC-0069

11:10 > 18F-FDG PET image biomarkers improve prediction of late radiation-induced xerostomia

N.M. Sijtsema (The Netherlands), L.V. Van Dijk, W. Noordzij, C.L. Brouwer, J.G.M. Burgerhof, J.A. Langendijk, R.J.H.M. Steenbakkers OC-0070

11:20 > Clustering of multi-parametric functional imaging: identifying high risk subvolumes in NSCLC tumours
A.J.G. Even (The Netherlands), M.D. La Fontaine, B. Reymen, M. Das, D. De Ruysscher, P. Lambin, W. Van Elmpt OC-0071

PROFFERED PAPERS

Improvements in positioning and motion management

10:30 - 11:30 | STRAUS 1

Chair: R. De Jong (The Netherlands)
Chair: M. Mascarin (Italy)

10:30 > 4D-MRI based evaluation of moving lung tumor target volumes
M. Düsberg (Germany), S. Neppl, S. Gerum, F. Roeder, M. Reiner, N. Nicolay, H.P. Schlemmer, J. Debus, C. Thieke, J. Dinkel, K. Zink, C. Belka, F. Kamp OC-0072

10:40 > Shoulder girdle impairment evaluation in breast cancer patients undergoing surgery and radiotherapy
V. Masiello (Italy), D. Smaniotto, D. Marchesano, L. Boldrini, M. Giraffa, L. Maggi, E. Amabile, P.E. Ferrara, F. Landi, V. Valentini, G. Mantini OC-0073

10:50 > Analysis of diaphragm motion at various levels of abdominal compression by dynamic MRI
K.F. Cheng (Hong Kong SAR China), P.H. Fok, J. Yuan, O.L. Wong, G. Chiu OC-0074

11:00 > Simple spatula improves the geometrical accuracy of a cranial mask for brain tumor radiotherapy
N. Wolffs (The Netherlands), R. De Jong, L. Van Gurp, K. Goudschaal, N. Van Wieringen, L. Stalpers, A. Bel OC-0075

11:10 > Motion Capture Pillow shows potential to replace thermoplastic masks in H&N radiotherapy
S. Goldsworthy (UK), T. Dapper, G. Griffiths, A. Morgan, S. McCormack, S. Dogramadzi OC-0076

11:20 > Comparison of setup accuracy, intrafraction movement and comfort for two stereotactic masks
C. Meunier (Belgium), M. Pauvert, V. Wergifosse, M. Delree, M. Wanet, B. Bihin, J.F. Daisne OC-0077

SYMPOSIUM WITH PROFFERED PAPERS

Novel approaches in gut matters

10:30 - 11:30 | LEHAR 4

Chair: A. Kiltie (UK)

Co-chair: W. Dörr (Austria)

10:30 > Best of both worlds: can novel pathways be targeted for reduced gut toxicity but improved tumour response?
M.M. Olcina (USA) SP-0078

10:55 > Bowel radiation injury: complexity of the pathophysiology and promises of cell and tissue engineering
L. Moussa (France) SP-0079

11:20 > Normal tissue toxicity and *in vivo* dose-equivalence of synchroton radiotherapy modalities
L. Smyth (Australia), J. Crosbie, J. Ventura, J. Donoghue, S. Senthi, P. Rogers OC-0080

PROFFERED PAPERS

Skin

10:30 - 11:30 | STOLZ 1-2

Chair: G. Kovács (Germany)

Chair: L. Tagliaferri (Italy)

10:30 > Patient Safety Is Improved With An Extensive Incident Learning System—9 Years Of Clinical Evidence
C. Deufel (USA), L. McLemore, L. Fong de los Santos, K. Classic, S. Park, K. Furutani OC-0081

10:40 > Novel Valencia-type skin applicators: Dosimetry and implementation of a TG-43 hybrid technique
D. Baltas, G. Anagnostopoulos (Greece), M. Andrassy OC-0082

10:50 > High-dose-rate surface brachytherapy for basal cell cancer
P. Wojcieszek (Poland), M. Szlag, A. Cholewka, S. Kellas-Ślęczka, A. Pruefer, M. Fijałkowski, B. Białas OC-0083

11:00 > Results of excision and 13 Gy single dose HDR brachytherapy for keloids
C. Hafkamp, O. Lapid, R. Dávila Fajardo, A. Van de Kar, C. Koedooder, L. Stalpers, B. Pieters (The Netherlands) OC-0084

11:10 > In search for the optimal HDR brachytherapy radiation scheme after excision in keloid treatment.
E. Bijlard, G.M. Verduijn (The Netherlands), J.X. Harmeling, H. Dehnad, M.A.M. Mureau OC-0085

11:20 > Perioperative interstitial high-dose-rate (HDR) brachytherapy for the treatment of recurrent keloids
P. Jiang (Germany), M. Geenen, F.A. Siebert, R. Baumann, P. Niehoff, D. Druecke, J. Dunst OC-0086

MULTIDISCIPLINARY TUMOUR BOARD

HNSCC

10:30 - 11:30 | LEHAR 5

Chair: V. Grégoire (Belgium)
ESTRO Fellow: N. Dinapoli (Italy)
Panellist: C. Simon (Switzerland)
Panellist: T. Füreder (Austria)
Panellist: S. Nemec (Austria)

POSTER VIEWING 2

Palliative and health services research

10:30 - 11:30 | POSTER AREA
Chair: J. Jaal (Estonia)
Chair: P. Franco (Italy)

> Improvement of models for survival prediction through inclusion of patient-reported symptoms
C. Nieder (Norway), T. Kämpe, B. Mannsåker, A. Dalhaug, E. Haukland PV-0087

> Half body irradiation schedule in patients with multiple bone metastases: a phase I-II trial
M. Ferro (Italy), F. Deodato, F. Dello Iacovo, G. Macchia, S. Di Santo, M. Nuzzo, S. Cilla, A. Farioli, A. Zamagni, L. Ronchi, A. Arcelli, S. Mignona, R. Frakulli, E. Farina, S. Cammelli, G.P. Frezza, V. Valentini, A.G. Morganti PV-0088

> Relation between pain control and bone mineral density change in bone metastases
H. Kobayashi (Japan), H. Takagi, K. Tanaka, T. Matsuyama, K. Yamazaki, M. Matsuo, T. Yanase, M. Tanaka PV-0089

> The risk of myelopathy after reirradiation of the spinal cord.
M. Hiul Suppli (Denmark), P. Munck af Rosenchold, H. Pappot, S.A. Engelholm PV-0090

> Quantifying the Gap Between Radiotherapy in the Elderly and the Demand for Age-Agnostic Treatment.
T. Mee (UK), N.F. Kirkby, K.J. Kirkby, R. Jena, A. Choudhury PV-0091

> Criterion-Based Benchmarking approach of the appropriate use of radiotherapy in NSW-ACT, Australia
G. Gabriel (Australia), G. Delaney, M. Barton PV-0092

> Availability of radiotherapy in Africa: past and present of an unsolved problem
E.H. Zubizarreta (Austria), A. Polo PV-0093

AWARD LECTURE

Van der Schueren Award lecture

11:40 - 12:10 | AUDITORIUM

11:40 > Chair and introduction
Chair: P. Poortmans (France)

11:45 > Substantial and "for free" improvement of radiotherapy practice in high and low income countries.
Speaker: B. Heijmen (The Netherlands) SP-0094

AWARD LECTURE

Iridium Award Lecture

12:10 - 12:40 | AUDITORIUM

12:10 > Chair and introduction
Chair: F. Siebert (Germany)

12:15 > Brachytherapy physics developments: Look back in anger, grateful, and with hope
Speaker: J. Venselaar (The Netherlands) SP-0095

AWARD LECTURE

Honorary Physicist Award Lecture

12:40 - 13:00 | AUDITORIUM

Chair: G. Meijer (The Netherlands)

12:40 > Chair and introduction
Chair: N. Jornet (Spain)

12:45 > Cognitive perspective in the radiation oncology physics domain
Speaker: V. Valentini (Italy) SP-0096

SYMPOSIUM

The optimal approach to treat oligometastastic disease: different ways to handle an indication quickly gaining acceptance

14:45 - 16:00 | AUDITORIUM

Radical radiotherapy in the form of stereotactic body radiotherapy (SBRT) has become a routine practice in many institutions for patients with oligo-metastatic disease. This rapid development was observed despite the lack prospective evidence proofing the value of SBRT, despite oligo-oligometastasis is poorly defined and despite patient selection criteria are still limited. This symposium summarises the challenges of the oligo-metastatic concept, the role of radiotherapy and surgery and appropriate patient selection for these local treatment options. A clinical approach to the abscopal effect – investigated in many pre-clinical studies but observed rarely in daily clinical practice – is presented and discussed.

Chair: M. Guckenberger (Switzerland)
Co-chair: I. Ratosa (Slovenia)

14:45	>	Clinical approach to abscopal effects *Speaker: P.C. Lara Jimenez (Spain)*	SP-0097
15:03	>	What is the purpose of surgical metastasectomy and do we achieve it? *Speaker: T. Treasure (UK)*	SP-0098
15:21	>	What is the indication and what is the aim of clinical treatment: radiotherapy *Speaker: E. Lartigau (France)*	SP-0099
15:39	>	Oligometastastic cancer: a therapeutic challenge *Speaker: K. Van der Hoeven (The Netherlands)*	SP-0100

SYMPOSIUM WITH PROFFERED PAPERS

Targeting tumour heterogeneity

14:45 - 16:00 | SCHUBERT

It is well known that a tumour is not a homogeneous collection of malignant cells. In contrast to that a tumour lump consist of e.g. areas with cells of different differentiation grade and different oxygenation caused by development of multiple subclones at the same time. These subclones are often spatially segregated. An example is prostate cancer with areas of different Gleason patterns and oxygenation as has been shown by BOLD-MRI. Focal treatment of prostate cancer has evolved to treat only the dominant intraprostatic lesion(s) leaving out non-significant disease. One reason to differentiate treatment between areas of the same tumour is that genotypes and phenotypes that evolve often differ between primary tumours and metastases. The resulting subclonal heterogeneity complicates effective targeting. New challenges are arising for targeting

tumor heterogeneity in the field of radiation oncology. One solution is the use of brachytherapy for the so-called ' dose-painting'. Because of the high dose gradients of brachytherapy dose distribution, separate areas can effectively be treated distinctly. Combination therapy approaches and focal therapies are thus key strategies to address this heterogeneity.

Chair: B. Pieters (The Netherlands)
Co-chair: K. Kapp (Austria)

14:45 > Using heterogeneous brachytherapy dose distributions to target tumour cell heterogeneity
R. Alonzi (UK) SP-0101

15:03 > MRI assisted focal boost integrated with HDR monotherapy for low/ intermediate risk prostate cancer
L. Dalimonte (Canada), J. Helou, G. Morton, H. Chung, M. McGuffin, A. Ravi, A. Loblaw OC-0102

15:13 > The challenges of targeting tumour heterogeneity in the field of radiation oncology
P. Lambin (The Netherlands) SP-0103

15:31 > The impact of tumour heterogeneity on radiation therapy outcomes
M. Gerlinger (UK) SP-0104

15:49 > Hybrid F-MISO PET/MRI for radiation therapy response assessment in cervix cancer
M. Daniel (Austria), P. Andrzejewski, A. Sturdza, K. Majercakova, P. Baltzer, K. Pinker, W. Wadsak, R. Pötter, T. Hellbich, P. Georg, D. Georg OC-0105

SYMPOSIUM

Innovations in ion beam therapy

14:45 - 16:00 | STRAUS 2-3

Chair: L.P. Muren (Denmark)
Co-chair: M. Navratil (Czech Republic)

14:45 > Reducing range uncertainties: new approaches for stopping power determination and *in-vivo* range verification
Speaker: K. Parodi (Germany) SP-0106

15:10 > Mechanisms and Models of Particle Relative Biological Effectiveness (RBE)
Speaker: D.J. Carlson (USA) SP-0107

15:35 > New horizons in radiobiology: from Relative Biological Effectiveness to "new biology"
Speaker: M. Durante (Italy) SP-0108

SYMPOSIUM

Imaging for therapeutic response / toxicity evaluation

14:45 - 16:00 | LEHAR 1-3

Predictive imaging markers may help define patients who benefit most from a specific treatment or intervention. Early imaging markers of response may be used to adapt the therapeutic strategy. Validation of such markers is key to translation in clinical practice. This symposium will highlight MRI and PET techniques related to hypoxia-guided interventions, show an overview of PET data for the tri-modality treatment of rectum and oesophageal cancer and discuss the potential of diffusion-weighted and dynamic contrast-enhanced MRI as imaging markers for these cancers. Imaging markers also may reflect normal-tissue response. This will be illustrated with examples of liver and brain.

Chair: U. Van der Heide (The Netherlands)
Co-chair: A. Lopez Medina (Spain)

14:45 > Functional imaging as biomarker for toxicity response
Speaker: Y. Cao (USA) SP-0109

15:10 > Imaging tumour response to neoadjuvant treatment in GI tumours
Speaker: G. Meijer (The Netherlands) SP-0110

15:35 > Imaging biomarkers to predict and early assess the response to radiation therapy. Potential impact of studies in small animals
Speaker: B. Gallez (Belgium) SP-0111

SYMPOSIUM

Comprehensive motion management and immobilisation solutions in radiation therapy

14:45 - 16:00 | STRAUS 1

The primary aim of radiation therapy treatments is to deliver an optimal dose to the target volume while minimising dose to the surrounding normal structures. There remain a number of challenges posed by the inaccuracies of treating patients, where tumours and critical structures are constantly moving and adapting with normal physiological functions. Speakers will focus on different approaches to immobilisation; answering the question: are we able to solve all 'problems' only with technical solutions; etc. Session will focus on modern technics like ExacRack or Active breathing control.

Chair: B. Bak (Poland)
Co-chair: S. Jäger (Austria)

14:45 > Immobilising the patient to be as comfortable as possible. A general overview
Speaker: A. Osztavics (Austria) SP-0112

15:10 > Added value of mechanical ventilation in the treatment of moving tumours with photon and proton therapies
Speaker: X. Geets (Belgium) SP-0113

15:35 > Motion of liver tumours using Active Breathing Control: keeping the margins small and the patient comfortable
Speaker: M. Mast (The Netherlands) SP-0114

SYMPOSIUM WITH PROFFERED PAPERS

Novel approaches in brain matters

14:45 - 16:00 | LEHAR 4

Long term survivors of brain tumours, especially children often suffer the debilitating consequences of the radiation therapy. Neural stem cells are responsible for the development, regeneration and potential carcinogenesis after insult of the brain tissue. Therefore, the DNA damage response of adult neuronal stem cells at different ages also in relation to radiation-induced carcinogenesis is will be discussed. As a consequence of radiation of the brain neurogenesis will be changed leading to cognitive defect especially in patients irradiated at a young age. Therefore, a cranial irradiation mouse model studying neurogenesis, synaptic plasticity and neuro-inflammation will be discussed.

Chair: R. Coppes (The Netherlands)
Co-chair: H. Herrmann (Austria)

14:45 > Response of adult neural stem cells to radiation-induced DNA damage
L. Barazzuol (The Netherlands) SP-0115

15:07 > The cognitive defects of neonatally irradiated mice are accompanied by changes in adult neurogenesis
S. Tapio (Germany) SP-0116

15:29 > Cisplatin sensitizes radioresistant mesenchymal stem cells
A. Rühle (Germany), R. Lopez Perez, K.J. Weber, J. Debus, P.E. Huber, N.H. Nicolay OC-0117

15:39 > Mesenchymal stem cells are resistant to ionizing radiation irrespective of their tissue of origin
N.H. Nicolay (Germany), A. Rühle, O. Xia, R. Lopez Perez, J. Debus, P.E. Huber OC-0118

15:49 > Dermatan sulfate mitigates radiation-induced oral mucositis (mouse) – biological mechanisms
S. Gruber (Austria), E. Bozsaky, M. Arnold, S. Pfaffinger, S. Hetzendorfer, V. Gernedl, A. Rohorzka, L. Kowald, S. Morava, J. Mayer, P. Kuess, W. Dörr OC-0119

SYMPOSIUM

Brachytherapy pays

14:45 - 16:00 | STOLZ 1-2

Chair: L.T. Tan (UK)

Co-chair: T. Major (Hungary)

14:45 > Introducing the Brachy-HERO initiative
Speaker: L.T. Tan (UK) SP-0122

15:10 > Review of health related quality of life measures with brachytherapy and application to QALY for economic evaluation
Speaker: H. Kim (USA) SP-0123

15:35 > Optimal utilisation of brachytherapy in Europe -can it be measured?
Speaker: J.M. Borras (Spain) SP-0124

PROFFERED PAPERS

Prostate

14:45 - 16:00 | LEHAR 5

Chair: V. Fonteyne (Belgium)

Chair: A. Zapatero (Spain)

14:45 > Outcomes of concurrent chemo-radiotherapy in elderly patients with advanced bladder cancer
M. Christodoulou (UK), C. Hodgson, A. Zeniou, F. Slevin, J. Kennedy, P.J. Hoskin, A. Henry, A. Choudhury OC-0124

14:55 > Relevance of central pathology review in prostatectomy specimens: data from the SAKK 09/10 trial.
P. Ghadjar (Germany), S. Hayoz, V. Genitsch, D. Zwahlen, T. Hölscher, P. Gut, M. Guckenberger, G. Hildebrandt, A.C. Müller, M. Putora, A. Papachristofilou, L. Stalder, C. Biaggi-Rudolf, M. Sumila, H. Kranzbühler, Y. Najafi, P. Ost, N. Azinwi, C. Reuter, S. Bodis, K. Khanfir, V. Budach, D. Aebersold, A. Perren, G. Thalmann OC-0125

15:05 > A gene expression assay to predict the risk of distant metastases in localized prostate cancer
S. Jain (UK), C. Lyons, S. Walker, S. McQuaid, S. Hynes, D. Mitchell, B. Pang, G. Logan, A. McCavigan, D. O'Rourke, C. Davidson, L. Knight, A. Sheriff, V. Berge, D. Neal, H. Pandha, R. Watson, M. Mason, E. Kay, D. Harkin, J. James, M. Salto-Tellez, R. Kennedy, J. O'Sullivan, D. Waugh OC-0126

15:15 > Individualized prediction of nodal involvement based on Sentinel-node dissection of prostate cancer
A.C. Müller (Germany), D. Zips, A. Ernst, R. Bares, P. Martus, D. Weckermann, D. Schilling, J. Bedke, A. Stenzl OC-0127

15:25 > Patient-reported outcome in the prostate HYPRO trial: gastrointestinal toxicity
W. Heemsbergen (The Netherlands), R. Wortel, F. Pos, R. Smeenk, S. Krol, S. Aluwini, M. Witte, B. Heijmen, L. Incrocci OC-0128

15:35 > 5-year safety, efficacy and quality of life outcomes from multi-center SBRT trial for prostate cancer
R. Meier (USA), I. Kaplan OC-0129

15:45 > Prostatic sarcomas: a large multicentric Rare Cancer Network study
B. De Bari (France), B. Stish, R. Miller, M. Krengli, A. Bossi, P. Sargos, C. Solé Pesutic, A. Stabile, R. Smeenk, N. Zaorsky, L. Lestrade, G. Crehange, M. Ozsahin OC-0130

POSTER VIEWING 3

Treatment planning

14:45 - 16:00 | POSTER AREA

Chair: W. Verbakel (The Netherlands)

Chair: L.B. Hysing (Norway)

> MR-only prostate external radiotherapy treatment planning - a multi-center/multi-vendor validation
E. Persson (Sweden), C. Gustafsson, F. Nordström, M. Sohlin, A. Gunnlaugsson, K. Petruson, N. Rintelä, K. Hed, L. Blomqvist, B. Zackrisson, T. Nyholm, L.E. Olsson, C. Siversson, J. Jonsson PV-0131

> Comparison of planned versus simulated delivered dose in IMRT for endometrial cancer
I. White (UK), D. McQuaid, A. Dunlop, N. Hopkins, M. Caputo, S. Mason, S. Lalondrelle PV-0132

> Re-irradiation of pelvic recurrence of rectal cancer: Developing an adaptive plan selection strategy
L. Nyvang (Denmark), C.S. Byskov, M.G. Guren, L.P. Muren, K.L.G. Spindler PV-0133

> Isotoxic stereotactic radiotherapy for central pelvic recurrence in gynecological cancer
M. Llewelyn (UK), A. Taylor PV-0134

> Short tangential arcs in VMAT based breast and chest wall radiotherapy planning
A. Munshi (India), B. Sarkar, S. Roy, T. Ganesh, B.K. Mohanti PV-0135

> Linear energy transfer in normal tissues in spot scanning proton therapy of prostate cancer
J. Pedersen (Denmark), J. BB Petersen, C. H. Stokkevåg, K. S. Ytre-Hauge, O. Casares-Magaz, N. Mendenhall, L. P. Muren PV-0136

> Validation of fast motion-including dose reconstruction for proton scanning therapy in the liver
E. Colvill (Denmark), J. Petersen, M. Høyer, E. Worm, R. Hansen, P. Poulsen PV-0137

> Pencil beam scanning treatments in free-breathing lung cancer patients – is 5 mm motion a limit?
A. Jakobi (Germany), R. Perrin, A. Knopf, C. Richter PV-0138

PROFFERED PAPERS

Lung

16:30 - 17:30 | AUDITORIUM

Chair: S. Ramella (Italy)

Chair: E. Troost (Germany)

16:30 > Induction of pulmonary hypertension may explain early mortality after thoracic radiotherapy
P. Van Luijk (The Netherlands), T.M. Gorter, T.P. Willems, R.P. Coppes, J. Widder, J.A. Langendijk OC-0139

16:40 > Updating QUANTEC and clinically adjusted QUANTEC models for pneumonitis at external validation
A. Van Der Schaaf (The Netherlands), J. Lodeweges, A. Niezink, J. Langendijk, J. Widder OC-0140

16:50 > Validation of dose-sensitive heart regions affecting survival in SABR lung cancer patients
A. McWilliam (UK), J. Kennedy, C. Faivre-Finn, M. Van Herk OC-0141

17:00 > Incidental dose to cardiac subvolumes does not improve prediction of radiation pneumonitis in NSCLC
R. Wijsman (The Netherlands), F. Dankers, E. Troost, A. Hoffmann, J. Bussink OC-0142

17:10 > Adaptive radiotherapy reduces pneumonitis without increasing the risk of failure in lung cancer
A.A. Khalil (Denmark), M.M. Knap, M.T. Petersen, M. Kandi, H.H. Schmidt, D.S. Møller, L. Hoffman OC-0143

17:20 > Dosimetric analysis of randomized lung proton and photon plans with respect to radiation toxicity
T. Deist (The Netherlands), P. Yang, C. Oberije, P. Allen, Y. Luo, Y. Van Wijk, D. Gomez, T. Xu, S. Tucker, R. Mohan, S. Hahn, P. Lambin, Z. Liao OC-0144

JOINT SYMPOSIUM

ESTRO-JASTRO: Oligometastatic disease

16:30 - 17:30 | SCHUBERT

Chair: Y. Lievens (Belgium)

Chair: Y. Nishimura (Japan)

16:30 > Biological rationale and clinical evidence
Speaker: P. Ost (Belgium) SP-0145

16:45 > Oligometastatic disease: Radiophysics implementation and pitfalls
Speaker: D. Verellen (Belgium) SP-0146

17:00 > Interpretation and management of oligometastases
Speaker: H. Onishi (Japan) SP-0147

17:15 > SBRT for oligometastases
Speaker: T. Kimura (Japan) SP-0148

PROFFERED PAPERS

Best of particles

16:30 - 17:30 | STRAUS 2-3

Chair: T. Lomax (Switzerland)

Chair: B. Knäusl (Austria)

16:30 > Lateral response heterogeneity of Bragg peak ion chambers for narrow-beam photon and proton dosimetry
P. Kuess (Austria), T. Böhlen, W. Lechner, A. Elia, D. Georg, H. Palmans OC-0149

16:40 > Dual-energy CT-based proton treatment planning to assess patient-specific range uncertainties
P. Wohlfahrt (Germany), C. Möhler, W. Enghardt, S. Greilich, C. Richter OC-0150

16:50 > Experimental assessment of relative stopping power prediction by single energy and dual energy CT
J.K. Van Abbema (The Netherlands), M.J. Van Goethem, A.K. Biegun, G.J. Pelgrim, M. Vonder, M.J.W. Greuter, A. Van der Schaaf, S. Brandenburg, E.R. Van der Graaf OC-0151

17:00 > Innovative solid state microdosimeters for Radiobiological effect evaluation in particle therapy
T.L. Tran (Australia), L. Chartier, D. Bolst, D. Prokopovich, A. Pogossov, M. Lerch, S. Guatelli, A. Kok, M. Povoli, A. Summanwar, M. Reinhard, M. Petesecca, V. Perevertaylo, A. Rozenfeld OC-0152

17:10 > Sensitivity evaluation of prompt γ-ray based range verification with a slit camera
L. Nenoff, M. Priegnitz, A. Trezza, J. Smeets, G. Janssens, F. Vander Stappen, L. Hotoiu, D. Prieels, W. Enghardt, G. Pausch, C. Richter (Germany) OC-0153

17:20 > Proton therapy patient selection for oropharyngeal cancer patients: the impact of treatment accuracy
M. Hoogeman (The Netherlands), S. Breedveld, M. De Jong, E. Astreinidou, L. Tans, F. Keskin-Cambay, R. Bijman, S. Krol, S. Van de Water, T. Arts OC-0154

PROFFERED PAPERS

Imaging and image analysis

16:30 - 17:30 | LEHAR 1-3

Chair: K. Poels (Belgium)

Chair: P. Remeijer (The Netherlands)

16:30 > Automated lung tumour delineation in cine MR images for image guided radiotherapy with an MR-Linac
B. Eiben (UK), M.F. Fast, M.J. Menten, K. Bromma, A. Wetscherek, D.J. Hawkes, J.R. McClelland, U. Oelfke OC-0155

16:40 > Automated reference-free local error assessment in clinical multimodal deformable image registration
M. Nix (UK), R. Speight, R. Prestwich OC-0156

16:50 > Atlas-based segmentation of prostatic urethra in the planning CT of prostate cancer
O. Acosta (France), M. Le Dain, C. Voisin, R. Bastien, C. Lafond, K. Gnep, R. De Crevoisier OC-0157

17:00 > A priori scatter correction of cone-beam CT projections in photon vs. proton therapy gantries
A.G. Andersen (Denmark), Y. Park, O. Casares-Magaz, U. Elstrøm, J. Petersen, B. Winey, L. Dong, L. Muren OC-0158

17:10 > Dual energy CBCT increases soft tissue CNR ratio and image quality compared to standard CBCT in IGRT
M. Skaarup (Denmark), D. Kovacs, M.C. Aznar, J.P. Bangsgaard, J.S. Rydhög, L.A. Rechner OC-0159

17:20 > Radiomics Features Harmonization for CT and CBCT in Rectal Cancer
R. Luo (China), J. Wang, H. Zhong, J. Gan, P. Hu, L. Shen, W. Hu, Z. Zhang OC-0160

PROFFERED PAPERS

Novelties in image guidance

16:30 - 17:30 STRAUS 1

Chair: I. Lobato (Portugal)

Chair: J. Daisne (Belgium)

16:30 > Patient tolerance of stereotactic MR-guided adaptive radiation therapy: an assessment using PRO's
R. Bakker (The Netherlands), M. Jeulink, S. Tetar, S. Senan, B. Slotman, F. Lagerwaard, A. Bruynzeel OC-0161

16:40 > Optimizing sequences for MRI-guided radiotherapy in cranial and head and neck regions
W.W.K. Fung (Hong Kong SAR China), S.Y. Man, J. Yuan, L.H. Fung, W.P. Luk, G. Chiu OC-0162

16:50 > Online workflow for the First-in-Man study on bone metastases at the MRI-linear accelerator
L.T.C. Meijers (The Netherlands), S.J. Hoogcarspel, A.N.T.J. Kotte, C.N.N. Nomden, G.G. Sikkes, I.H. Kiekebosch, E.N. Groot de, G.H. Bol, B. Asselen van, I.M. Jurgenliemk-Schulz, L.G.W. Kerkmeijer, B.W. Raaymakers OC-0163

17:00 > Set-up reproducibility on an MR-Linac
A. Betgen (The Netherlands), T. Vijlbrief, L. Wiersema, V.W.J. Van Pelt, J.J. Sonke, U.A. Van der Heide OC-0164

17:10 > TPUS vs CBCT: comparison of daily inter-modality derived setup shifts for prostate radiotherapy.
E.P.P. Pang (Singapore), K. Knight, M. Baird, J.M.Q. Loh, E.T.Y. Chen, G.K. Low, C.C.C. Yap, A.H.S. Boo, J.K.L. Tuan OC-0165

17:20 > Fast 3D CBCT imaging for Lung SBRT: Is image quality preserved?
B. De Rijcke, R. Van Geeteruyen, E. De Rijcke, Y. Lievens, E. Bogaert (Belgium) OC-0166

SYMPOSIUM

Novel approaches in particle biology

16:30 - 17:30 | LEHAR 4

Chair: M. Pruschy (Switzerland)
Co-chair: R. Jäger (Austria)

16:30 > The ESTRO initiative on biological effects of particle therapy
Speaker: B.S. Sørensen (Denmark) SP-0167

16:45 > RBE of protons
Speaker: B. Jones (UK) SP-0168

17:00 > A small animal tumour model for low-energy laser-accelerated particles
Speaker: J. Pawelke (Germany) SP-0169

17:15 > Novel models in particle biology research
Speaker: P. Van Luijk (The Netherlands) SP-0170

PROFFERED PAPERS

Prostate 1

16:30 - 17:30 | STOLZ 1-2

Chair: P. Hoskin (UK)

Chair: S. Buus (Denmark)

16:30 > Multiparametric MRI margin characterization for focal brachytherapy in low-grade prostate cancer
S. Ken (France), F. Arnaud, R. Aziza, D. Portalez, B. Malavaud, J. Bachaud, P. Graff-Cailleaud, S. Arnault, A. Lusque, T. Brun OC-0171

16:40 > Interstitial salvage HDR-brachytherapy for recurrent prostate cancer after radiation therapy
P. Jiang (Germany), C. Van der Horst, B. Kimmig, F. Zinsser, B. Poppe, U. Luetzen, K.P. Juenemann, F.A. Siebert, J. Dunst OC-0172

16:50 > Low incidence of severe toxicity by focal salvage HDR brachytherapy in prostate cancer recurrences
M. Maenhout (The Netherlands), M. Van Vulpen, M.A. Moerland, M. Peters, M.A.A. Van den Bosch, J.R.N. Van der Voort van Zyp OC-0173

17:00 > Salvage LDR-brachytherapy for recurrent prostate cancer: results from a single institution
S. Magrini (Italy), F. Barbera OC-0174

17:10 > Salvage HDR-BT in prostate local recurrence after radiation therapy: Retrospective analysis
C. De la Pinta (Spain), T. Muñoz, C. Vallejo, S. Sancho, F. López, M. Martin, A. Hervás OC-0175

17:20 > Identifying Patients Who Benefit the Most from Salvage HDR Brachytherapy
G. Valdes (USA), A.J. Chang, O. Kenton, A. Cunha, T.D. Solberg, H. I-Chow OC-0176

PROFFERED PAPERS

Breast

16:30 - 17:30 | LEHAR 5

Chair: J. Hannoun-Levi (France)

Chair: M. Schmid (Austria)

16:30 > Brachytherapy for the Palliation of Dysphagia Owing to Esophageal Cancer: A Systematic Review.
L. Fuccio, D. Mandolesi, A. Farioli, C. Hassan, L. Frazzoni, A. Guido, F. Violante, C. Pierantoni, A. Galuppi, F. Bazzoli, A. Repici, A. Morganti (Italy) OC-0177

16:40 > Demonstration of Catheter Insertion Using Electromagnetic Guidance

in Breast Brachytherapy
H. Brastianos (Canada), T. Vaughan, A. Lasso, M. Westerland, J. Gooding, T. Ungi, G. Fichtinger, C. Falkson OC-0178

16:50 > Dosimetric impact of errors in HDR-iBT of the breast using a catheter tracking method
C. Bert (Germany), M. Kellermeier, B. Hofmann, V. Strnad OC-0179

17:00 > Prospective study of APBI With Multicatheter Brachytherapy in Local Relapses of Breast Cancer
E. Villafranca Iturre (Spain), L. Rubi, M. Barrado, A. Sola, P. Navarrete, A. Manterola, M. Dominguez, G. Asin, M. Campo, I. Visus, G. Martinez OC-0180

17:10 > Long-term clinical and cosmetic outcomes of high-dose-rate brachytherapy for early breast cancer
F. Arcidiacono (Italy), L. Chirico, M. Italiani, P. Anselmo, M. Casale, L. Draghini, F. Trippa, S. Fabiani, M. Basagni, E. Maranzano OC-0181

17:20 > 2nd breast conserving therapy with interstitial BT vs mastectomy for treatment of local recurrences
V. Smanykó (Hungary), N. Mészáros, M. Ujhelyi, G. Stelczer, T. Major, Z. Mátrai, C. Polgár OC-0182

POSTER VIEWING 4

Brachytherapy miscellaneous

16:30 - 17:30 | POSTER AREA

Chair: D. Baltas (Germany)

Chair: L.U. Fokdal (Denmark)

> Microbrachytherapy: even more localised dose profiles?
R. Brown (France), X. Franceries, M. Bardiès PV-0183

> Quantitative study on position margin in Intraluminal Brachytherapy Planning for lung treatment
C.W. Kong (Hong Kong SAR China), H. Geng, Y.W. Ho, W.W. Lam, K.Y. Cheung, S.K. Yu PV-0184

> Retina dose as risk factor for worse visual outcome in 106Ru plaque brachytherapy of uveal melanoma
G. Heilemann (Austria), L. Fetty, M. Blaickner, N. Nesvacil, D. Georg, R. Dunavoelgyi PV-0185

> MaxiCalc: a tool to calculate dose distributions from measured source positions in HDR brachytherapy
M. Hanlon (Australia), R.L. Smith, R.D. Franich PV-0186

> Source dwell time and transit time measurement for a HDR afterloading unit
T.L. Chiu (Hong Kong SAR China), B. Yang, H. Geng, W.W. Lam, C.W. Kong, K.Y. Cheung, S.K. Yu PV-0187

> Improved class solutions for prostate brachytherapy planning via evolutionary machine learning
S.C. Maree (The Netherlands), P.A.N. Bosman, Y. Niatsetski, C. Koedooder, N. Van Wieringen, A. Bel, B.R. Pieters, T. Alderliesten PV-0188

> Ring applicator source path determination using a high resolution ionisation chamber array
M. Gainey (Germany), M. Kollefrath, D. Baltas PV-0189

> The analysis of prostate cancer with median lobe hyperplasia treated I-125 brachytherapy
K. Muraki (Japan), H. Suefuji, E. Ogo, H. Eto, C. Tsuji, C. Hattori, Y. Miyata, H. Himuro, T. Abe, S. Hayashi, K. Chikui, M. Nakiri, T. Igawa PV-0190

AWARD LECTURE

Honorary Members' Award Lectures

17:40 - 18:25 | AUDITORIUM

Chair: P. Poortmans (France)
Chair: Y. Lievens (Belgium)

17:40 > Optimising the treatment of HPV-related oropharyngeal cancer: the difficult journey back
Speaker: B. O'Sullivan (Canada) SP-0191

17:55 > Potential of radiation therapy to convert the tumour into an *in situ* vaccine
Speaker: S. Formenti (USA) SP-0192

18:10 > Quality improvement in radiotherapy: history, significance and impact of dosimetry audits
Speaker: J. Izewska (Austria) SP-0193

Sunday 7 May 2017

TEACHING LECTURE

Role of radiotherapy in extranodal lymphomas

08:00 - 08:40 | AUDITORIUM

Chair: J. Kazmierska (Poland)

08:00 > Role of radiotherapy in extranodal lymphomas
Speaker: L. Specht (Denmark) SP-0194

TEACHING LECTURE

Strategies to increase safety in radiation oncology: how to make accidents less likely to occur

08:00 - 08:40 | SCHUBERT

Chair: L. Fog (Denmark)

08:00 > Strategies to increase safety in radiation oncology: how to make accidents less likely to occur
Speaker: P. Scalliet (Belgium) SP-0195

TEACHING LECTURE

Automated planning, knowledge-based planning and other novel developments in treatment planning - how do they work and perform?

08:00 - 08:40 | STRAUS 2-3

Chair: B. Vanderstraeten (Belgium)

08:00 > Automated planning, knowledge-based planning and other novelties in treatment planning - how do they work and perform?
Speaker: B. Heijmen (The Netherlands) SP-0196

TEACHING LECTURE

Building of NTCP models that contain non-dosimetric parameters

08:00 - 08:40 | LEHAR 1-3

Chair: S. Gulliford (UK)

08:00 > Building of NTCP models that contain non-dosimetric parameters
Speaker: T. Rancati (Italy) SP-0197

TEACHING LECTURE

Particle therapy: how to start up and carry out daily clinical practice

08:00 - 08:40 | STRAUS 1

Chair: A. Boejen (Denmark)

08:00 > Particle therapy – how to start up and carry out daily clinical practice
Speaker: H. Hentschel (Austria) SP-0198

TEACHING LECTURE

Three-dimensional cell culture system

08:00 - 08:40 | LEHAR 4

Chair: M. Boerma (USA)

08:00 > Three-dimensional cell culture systems
Speaker: N. Cordes (Germany) SP-0199

TEACHING LECTURE

Commissioning of dose calculations in brachytherapy TPS

08:00 - 08:40 | STOLZ 1-2

Chair: Å. Carlsson Tedgren (Sweden)

08:00 > Commissioning of dose calculations in brachytherapy TPS
Speaker: J. Steenhuijsen (The Netherlands) SP-0200

SYMPOSIUM

New developments in Personalised Radiation Oncology (PRO)

08:45 - 10:00 | AUDITORIUM

Chair: D. Zips (Germany)

Co-chair: P. Lukas (Austria)

08:45 > E-health and Personalised Radiation Oncology: cloud technologies and advanced sensing
Speaker: S. Kyriazakos (Belgium) SP-0201

09:03 > Integration and analysis of complex data for Personalised Radiation

Oncology
Speaker: A. Dekker (The Netherlands) SP-0202

09:21 > Innovative clinical trial designs for Personalised Radiation Oncology
Speaker: S. Brown (UK) SP-0203

09:39 > Decision support systems and shared decision making
Speaker: M.A. Gambacorta (Italy) SP-0204

SYMPOSIUM

Safety and clinical and cost effectiveness of multi-modality IGRT and ART

08:45 - 10:00 | SCHUBERT

Chair: X. Geets (Belgium)
Co-chair: B. Casar (Slovenia)

08:45 > What evidence is needed to assess cost-effectiveness of new technology and how can we get it (easily)?
Speaker: M. Johannesma (The Netherlands) SP-0205

09:03 > Tips and tricks for safe and effective routine clinical application
Speaker: F. Duprez (Belgium) SP-0206

09:21 > Do we have the tools for safe application of adaptive radiotherapy?
Speaker: L.B. Hysing (Norway) SP-0207

09:39 > Development of procedures for safe clinical application of plan-of-the-day adaptive radiotherapy
Speaker: S. Quint (The Netherlands) SP-0208

SYMPOSIUM

Robust optimisation in protons and photons

08:45 - 10:00 | STRAUS 2-3

Image-guided therapy and other technology can minimise geometrical uncertainties in radiotherapy. In treatment planning, measures are taken to account for expected residual uncertainties, e.g. by applying a CTV-PTV margin, aiming at making the treatment plan robust for those uncertainties. CTV-PTV margins have limitations. In this session, alternatives for the CTV-PTV margin approach will be discussed, both for photon and particle beam therapy. Novel approaches for robust plan optimisation will be highlighted, as well as practical approaches for making treatment plans robust using commercial planning systems, and methods to evaluate the robustness of plans. Limitations of robust optimisation will also covered, together with possible solutions.

Chair: B. Heijmen (The Netherlands)
Co-chair: M. Söhn (Germany)

08:45 > What is the actual robustness of the plans we deliver in particle therapy and what measures do we take to obtain it
Speaker: S. Molinelli (Italy) SP-0209

09:10 > Minimax robust optimisation applied to IMPT for oropharyngeal tumours
Speaker: S. Van de Water (The Netherlands) SP-0210

09:35 > Clinical implementation of coverage probability planning in cervix cancer
Speaker: J.C. Lindegaard (Denmark) SP-0211

SYMPOSIUM

Ultra-fast online therapy adaptation (replanning, dose accumulation QA)

08:45 - 10:00 | LEHAR 1-3

Chair: U. Oelfke (UK)

Co-chair: C. Pesznyak (Hungary)

08:45 > Automatic image segmentation and structure evaluation for on-line adaptive RT
Speaker: S. Mutic (USA) SP-0212

09:10 > Ultra-fast treatment planning and dose reconstruction
Speaker: P. Ziegenhein (UK) SP-0213

09:35 > Online tumour tracking – technology and quality assurance
Speaker: E. Colvill (Denmark) SP-0214

SYMPOSIUM

Particle therapy: how to start up and carry out daily clinical practice

08:45 - 10:00 | STRAUS 1

Recently, there has been a steady increase in particle therapy facilities.
In this session, speakers will discuss the important points that need to be considered when starting up and carrying out daily clinical practice in particle therapy facilities and this more specifically from a RTT point of view. Proper RTT training in particle therapy needs to be warranted with the definition of clear learning objectives.
Clinical and support process with the identification of potential risk areas also need to be reviewed. Indeed, clinical workflows need to be adapted taking into account the differences that exist between photon and particle therapy treatments.

Chair: A. Vaandering (Belgium)

Co-chair: M. Stock (Austria)

08:45 > RTTs skills for proton therapy – how and what to include in a learning programme
Speaker: A. Boejen (Denmark) SP-0215

09:10 > How to start up a proton therapy department – the point of view of a RTT
Speaker: M. Furberg (Sweden) SP-0216

09:35 > Workflow in a proton therapy department – real difference from photon therapy?
Speaker: F. Fellin (Italy) SP-0217

SYMPOSIUM WITH PROFFERED PAPERS

Combining tumour and normal tissue models

08:45 - 10:00 | LEHAR 4

In this session, A. Kiltie will show that in the process of assessment of the efficacy of drugs as radio sensitising agents, it is important to determine their effects on normal tissues as well as tumours. She will show how her group developed a modified crypt assay to assess acute toxicity on bowel surrounding the bladder and have developed a method using the small animal radiation research platform to assess late bowel toxicity. E. Deutsch will give examples of clinical failures, that were partly due to inappropriate preclinical modelling. He will show how the modelling of the differential index is challenging because of its organ specific nature and kinetics and, will discuss possible integration of the immune component of normal tissue response into the models.

Chair: M. Vozenin (Switzerland)
Co-chair: M. Nevinny (Austria)

08:45 > Novel approaches in the study of bladder cancer
A. Kiltie (UK) SP-0218

09:07 > Optimising the output of preclinical lung models to optimize the chances of success into the clinic.
E. Deutsch (France) SP-0219

09:29 > Exploiting novel combined-modality approaches for treatment of highly aggressive pancreas carcinomas
M. Orth (Germany), L. Posselt, S. Kirchleitner, J. Schuster, C. Belka, M. Schnurr, K. Lauber OC-0220

09:39 > High performance radiosensitivity assay to predict post radiation overreactions
G. Vogin (France), L. Bodgi, A. Canet, S. Pereira, J. Gillet-Daubin, N. Foray OC-0221

09:49 > GnRH receptor blockade reduces radiation-induced bladder toxicity: first evidence in a rat model.

G. Fallara (Italy), F. Benigni, C. Cozzarini, B. Noris Chiorda, C. Sini, L. Perani, A. Spinelli, M. Venturini, A. Salonia, A. Briganti, F. Montorsi, N. Di Muzio, C. Fiorino OC-0222

SYMPOSIUM

Paediatric brachytherapy

08:45 - 10:00 | STOLZ 1-2

This symposium will give an update on the therapy of paediatric non-haematological cancer with focus on techniques and results of brachytherapy. The speakers will describe the philosophy of multimodal organ and function sparing treatment with brachytherapy of paediatric malignancies and present corresponding efficacy, side effects and functional results in comparison with other available modalities.

Chair: V. Strnad (Germany)
Co-chair: J. Petera (Czech Republic)

08:45 > The AMORE concept and late effects outcome for paediatric brachytherapy
Speaker: B. Pieters (The Netherlands) SP-0223

09:10 > Brachytherapy for bladder/prostate rhabdomyosarcoma: clinical outcome and functional results
Speaker: C. Chargari (France) SP-0224

09:35 > Intraoperative HDR brachytherapy for pediatric cancers
Speaker: S. Wolden (USA) SP-0225

PROFFERED PAPERS

Dose measurement and dose calculations

08:45 - 10:00 | LEHAR 5
Chair: P. Kuess (Austria)
Chair: H. Palmans (UK)

08:45 > Towards consistency of TPS dose calculations: converting dose to medium to dose to water
N. Reynaert (France), F. Crop, E. Sterpin, H. Palmans OC-0226

08:55 > The heterogeneous multiscale model for efficient computation of microscopic dose metrics
M. Martinov (Canada), R. Thomson OC-0227

09:05 > DVH criteria for prostate *in vivo* EPID dosimetry
R.F.M. Van Oers (The Netherlands), E. Van der Bijl, I. Olaciregui-Ruiz, A. Mans OC-0228

09:15 > EPID dose response in the MR-Linac with and without presence of a magnetic field
I. Torres Xirau (The Netherlands), I. Olaciregui-Ruiz, B. J. Mijnheer, U. A. van der Heide, A. Mans OC-0229

09:25 > Treatment log files as a tool to identify inaccuracies in scanned proton beam delivery and planning
M. Belosi (Switzerland), R. Van der Meer, P. Garcia de Acilu Laa, A. Bolsi, D. Weber, A. Lomax OC-0230

09:35 > The suitability of radiochromic film in 0.35T magnetic field CO-60 compared with conventional 6MV
D.L.J. Barten (The Netherlands), L.J. Van Battum, D. Hoffmans, S. Heukelom OC-0231

09:45 > Development of a novel 'end to end' dosimetry audit of motion management in radiotherapy
A.L. Palmer (UK), D. Nash, S. Jafari, S. Muscat OC-0232

POSTER VIEWING 5

Lung and breast

08:45 - 10:00 | POSTER AREA

Chair: A. Montero (Spain)

Chair: R. Bütof (Germany)

> A Radiosensitivity Gene Signature and PD-L1 Predict Clinical Outcome of Breast Cancer in TCGA dataset
B.S. Jang (Republic of Korea), I.A. Kim PV-0233

> SPECT-CT visualization of axillary lymph nodes in breast cancer: the guide for radiotherapy planning
S. Novikov (Russian Federation), P. Krzhivitskiy, S. Kanaev, P. Krivorotko, A. Artemeva, E. Turkevich PV-0234

> Is there a subset who benefits from PMRT in node-negative breast cancer patients?
H.J. Park (Republic of Korea), K. Shin, J. Kim, S. Ahn, S. Kim, Y. Kim, W. Park, Y. Kim, S. Shin, J. Kim, S. LEE, K. Kim, K. Park, B. Jeong PV-0235

> Impact of radiation therapy delay in patients underwent neoadjuvant chemotherapy and breast surgery
S. Silva (Brazil), A. Pereira, M. Kennya, M. Gustavo, M. Mano PV-0236

> Management and outcome of local failure after intraoperative partial breast irradiation
M.C. Leonardi (Italy), L. Tomio, G.B. Ivaldi, G. Catalano, M. Alessandro, C. Fillini, A. Ciabattoni, M. Guenzi, C.M. Francia, C. Fodor, F. Rossetto, B.A. Jereczek –Fossa, R. Orecchia, AIRO IORT Working Group PV-0237

> Use of Stereotactic Ablative Radiotherapy in Non-Small Cell Lung

Cancer Measuring 5 cm or More
H. Tekatli (The Netherlands), S. Van 't Hof, E.J. Nossent, M. Dahele, W.F.A.R. Verbakel, B.J. Slotman, S. Senan PV-0238

> Validation of lung cancer survival models in a clinical routine SBRT population
J. Van Soest (The Netherlands), T. Purdie, M. Giuliani, P. Lindsay, A. Hope, D. Jaffray, A. Dekker PV-0239

> A logistic regression model to predict 30-day mortality: difference between routine and trial data
A. Jochems (The Netherlands), I. El-Naqa, M. Kessler, C. Mayo, J. Reeves, J. Shruti, M. Matuszak, R. Ten Haken, C. Faive-Fin, G. Price, L. Holloway, S. Vinod, M. Field, M. Samir Barakat, D. Thwaites, A. Dekker, P. Lambin PV-0240

> Comparing endpoints of radiation induced lung injury for NSCLC: radiology vs. clinical symptoms
U. Bernchou (Denmark), R.L. Christiansen, J.T. Asmussen, T. Schytte, O. Hansen, C. Brink PV-0241

PROFFERED PAPERS

Understanding RBE and its relevance *in vivo*

10:30 - 11:30 | AUDITORIUM

Chair: B.S. Sørensen (Denmark)
Chair: M. Hill (UK)

10:30 > The oxygen enhancement ratio for carbon ions is smaller than for photons in R3327-HI prostate tumors
C. Glowa (Germany), P. Peschke, S. Brons, P. Huber, J. Debus, C. Karger OC-0242

10:42 > Submicron focused proton irradiation – understanding the RBE of heavy ion irradiation
T.E. Schmid (Germany), C. Greubel, K. Ilicic, D. Walsh, J. Reindl, C. Siebenwirth, J.J. Wilkens, G. Multhoff, E. Schmid, G. Dollinger, S.E. Combs OC-0243

10:54 > Does the RBE depend on ion type?
A. Lühr (Germany), C. Von Neubeck, M. Baumann, M. Krause, W. Enghardt OC-0244

11:06 > Clinical evidence that end-of-range proton RBE exceeds 1.1: lung density changes following chest RT
T. Underwood (USA), C. Grassberger, R. Bass, R. Jimenez, N. Meyersohn, B. Yeap, S. MacDonald, H. Paganetti OC-0245

11:18 > Proton minibeam radiation therapy spares normal rat brain
Y. Prezado (France), G. Jouvion, A. Patriarca, C. Nauraye, S. Heinrich, J. Bergs, D. Labiod, L. Jourdain, W. Gonzalez-Infantes, M. Juchaux, C. Sebrie, F. Pouzoulet OC-0246

JOINT SYMPOSIUM

ESTRO-CARO: Waiting times and QA

10:30 - 11:30 | SCHUBERT

Chair: N. Jornet (Spain)

Chair: E. Vigneault (Canada)

10:30 > Driving radiotherapy quality improvement: the Canadian experience
Speaker: M. Milosevic (Canada) SP-0247

10:45 > Radiotherapy quality management and improvement across Europe: variable approaches, united view
Speaker: N. Jornet (Spain) SP-0248

11:00 > An overview of two radiotherapy quality initiatives in Canada
Speaker: M.D. Brundage (Canada) SP-0249

11:15 > Waiting time in radiotherapy, an overlooked problem
Speaker: J. Overgaard (Denmark) SP-0250

PROFFERED PAPERS

Automated and robust treatment planning

10:30 - 11:30 | STRAUS 2-3

Chair: L. Cozzi (Switzerland)

Chair: S. Petit (The Netherlands)

10:30 > Late toxicity in HYPRO randomized trial analyzed by automated planning and intrinsic NTCP-modelling
A.W.M. Sharfo (The Netherlands), M.L.P. Dirkx, R.G. Bijman, W. Schillemans, S. Breedveld, S. Aluwini, F. Pos, L. Incrocci, B.J.M. Heijmen OC-0251

10:40 > Acceptance rates of automatically generated treatment plans for breast cancer
G. Van der Veen (The Netherlands), A. Duijn, J. Trinks, A. Scholten, R. Harmsen, G. Wortel, R. De Graaf, D. Den Boer, E. Damen OC-0252

10:50 > Machine Learning-Based Enables Data-driven Radiotherapy Treatment Planning Decision Support.
G. Valdes (USA), L. Wojtowicz, A.J. Pattison, C. Carpenter, C. Simone, A. Lin, T. Solberg OC-0253

11:00 > Prospective validation of independent DVH prediction for QA of automatic treatment planning
Y. Wang (The Netherlands), B.J.M. Heijmen, S.F. Petit OC-0254

11:10 > Practical use of principal component analysis in radiotherapy planning
D. Christophides (UK), A. Gilbert, A.L. Appelt, J. Fenwick, J. Lilley, D. Sebag-Montefiore OC-0255

11:20 > Using a knowledge-based planning solution to select patients for proton therapy
A. Delaney (The Netherlands), M. Dahele, J. Tol, I. Kuijper, B. Slotman, W. Verbakel OC-0256

PROFFERED PAPERS

Best of online MRI-guided radiotherapy

10:30 - 11:30 | LEHAR 1-3

Chair: J. Lagendijk (The Netherlands)

Chair: B. Oborn (Australia)

10:30 > Comprehensive MRI Acceptance Testing and Commissioning of a 1.5T MR-Linac: Guidelines and Results
R.H.N. Tijssen (The Netherlands), S.P.M. Crijns, J.J. Bluemink, S.S. Hacket, J.H.W. DeVries, M.J. Kruiskamp, M.E.P. Philippens, J.J.W. Lagendijk, B.W. Raaymakers OC-0257

10:40 > Investigation of magnetic field effects on 3D dosimeters for MR-IGRT applications
H.J. Lee (USA), Y. Roed, S. Venkataraman, M. Carroll, G. Ibbott OC-0258

10:50 > Online quantitative imaging on the MR-Linac
F. Koetsveld (The Netherlands), L.C. Ter Beek, P.J. Van Houdt, L.D. Van Buuren, U.A. Van der Heide OC-0259

11:00 > Experimental verification of dose enhancement effects in a lung phantom from inline magnetic fields
B.M. Oborn (Australia), M. Gargett, T. Causer, N. Hardcastle, P. Metcalfe, P. Keall OC-0260

11:10 > Monte Carlo Correction Factors for MRgRT Reference Dosimetry
S. Pojtinger (Germany), O. Dohm, D. Thorwarth OC-0261

11:20 > Implementation of patient specific QA for daily adaptive MR-guided radiation therapy
M.A. Palacios (The Netherlands), T. Apicella, D. Hoffmans, T. Rosario, M. Admiraal, I. Kawrakow, J. Cuijpers OC-0262

PROFFERED PAPERS

Variabilities in volume definition

10:30 - 11:30 | STRAUS 1

Chair: B. Kraan (The Netherlands)

Chair: I. Curic (Serbia)

10:30 > Single vs. multi-atlas auto-segmentation for prostate RT: Comparison of two commercial systems

A. Gulyban (Belgium), P. Berkovic, F. Lakosi, J. Hermesse, P.A. Coucke, V. Baart, D. Dechambre OC-0263

10:40 > Assessment of Atlas based auto-segmentation in Breast Contouring
P.H. Fok (Hong Kong SAR China), W.K. Fung, C.H.P. Ho, G. Chiu OC-0264

10:50 > Evaluating variability of contouring using ESTRO guidelines for elective breast cancer radiotherapy
D. Megias (UK), M. Sydenham, D. Wheatley, M. Maclennan, E. Spezi, A.M. Brunt OC-0265

11:00 > Motion specific target delineation significantly reduce treated volumes in liver SBRT
J. Wielaard (The Netherlands), C.H. Slump, K. Muller, A.W.H. Minken, H. Westendorp OC-0266

11:10 > Automatic contour propagation of breast and heart for re-planning in breast cancer radiotherapy
G.G. Sikkes (The Netherlands), L.T.C. Meijers, A.N.T.J. Kotte, I.E. Van Dam, B. Van Asselen, H.J.G.D. Van den Bongard OC-0267

11:20 > Volumetric comparison between PET/CT and CT simulation for target delineation in esophageal cancer
E. Jimenez-Jimenez (Spain), P. Mateos, N. Aymar, I. Ortiz, R. Roncero, M. Vidal, M. Gimenez, F. Romero, S. Sabater OC-0268

MULTIDISCIPLINARY TUMOUR BOARD

Lymphoma

10:30 - 11:30 | LEHAR 4

Chair: L. Specht (Denmark)
ESTRO Fellow: B. De Bari (France)
Panellist: M. Mayerhöfer (Austria)
Panellist: U. Jäger (Austria)
Panellist: I. Simonitsch-Klupp (Austria)

PROFFERED PAPERS

Prostate 2

10:30 - 11:30 | STOLZ 1-2

Chair: R. Alonzi (UK)
Chair: H. Westerveld (The Netherlands)

10:30 > Single Dose Compared to Fractionated High-Dose Rate Brachytherapy for Localised Prostate Cancer
P. Hoskin (UK), A. Rojas, P. Ostler, R. Hughes, R. Alonzi, G. Lowe OC-0269

10:40 > QoL and toxicity of HDR prostate brachytherapy as monotherapy 19Gy single fraction:phase II trial

A. Gomez-Iturriaga (Spain), F. Casquero, P. Minguez, J. Espinosa, A. Bueso, J. Cacicedo, L. Fernandez, S. Pedraza, J. Garcia Escovedo, P. Bilbao OC-0270

10:50 > The clinical outcome after high dose rate brachytherapy as monotherapy in localized prostate cancer
S. Kariya (Japan), K. Kobayashi, I. Yamasaki, S. Ashida, K. Inoue, T. Yamagami OC-0271

11:00 > Long-term rectal toxicity following I-125 prostate brachytherapy in 1,260 patients
A. Yorozu (Japan), S. Sutani, R. Kota, A. Sunaguchi, K. Toya, S. Saito OC-0272

11:10 > Prostate brachytherapy in African-Caribbean patients: A retrospective analysis of 370 cases
L. Bujor (Martinique), V. Atallah, N. Leduc, M. Creoff, P. Escarmant, V. Vinh-Hung OC-0273

11:20 > Comparison of MRI/CT fusion and CT for prostate post-implant dosimetry using sector analysis
N. Katayama (Japan), M. Takemoto, A. Takamoto, S. Sugiyama, K. Hisazumi, K. Watanabe, H. Ihara, K. Katsui, Y. Nasu, S. Kanazawa OC-0274

PROFFERED PAPERS

Physics treatment verification

10:30 - 11:30 | LEHAR 5

Chair: K. Tanderup (Denmark)
Chair: W. Lechner (Austria)

10:30 > Testing an MR-compatible afterloader for MR-based source tracking in MRI guided HDR brachytherapy
E. Beld (The Netherlands), P.R. Seevinck, J. Schuurman, F. Zijlstra, M.A. Viergever, J.J.W. Lagendijk, M.A. Moerland OC-0275

10:40 > Toward adaptive MR-guided HDR prostate brachytherapy – Simulation study based on anatomy movements
M. Borot de Battisti (The Netherlands), B. Denis de Senneville, G. Hautvast, D. Binnekamp, M. Peters, J. Van der Voort van Zyp, J.J.W. Lagendijk, M. Maenhout, M.A. Moerland OC-0276

10:50 > Assessment of the implant geometry in interstitial brachytherapy by a hybrid tracking system
N. Pallast, M. Kellermeier (Germany), K. Kallis, B. Steinmetz, V. Strnad, C. Bert OC-0277

11:00 > Red-emitting inorganic scintillation detectors to verify HDR brachytherapy treatments in real time
G. Kertzscher (USA), S. Beddar OC-0278

11:10 > Removing the blindfold - a new take on real-time brachytherapy dosimetry

I. Johansen (Denmark), S. Rylander, S. Buus, L. Bentzen, S.B. Hokland, C.S. Søndergaard, A.K.M. With, G. Kertzscher, C.E. Andersen, K. Tanderup OC-0279

11:20 > Benefit of repeat CT in high-dose rate brachytherapy as radical treatment for rectal cancer
R.P.J. Van den Ende (The Netherlands), E.C. Rijkmans, E.M. Kerkhof, R.A. Nout, M. Ketelaars, M.S. Laman, C.A.M. Marijnen, U.A. Van der Heide OC-0280

POSTER VIEWING 6

Imaging

10:30 - 11:30 | POSTER AREA

Chair: C. Brink (Denmark)
Chair: K. Røe Redalen (Norway)

> Lymph node MRI in regional breast radiotherapy leads to smaller target volumes and lower OAR dose
T. Van Heijst (The Netherlands), H.J.G.D. Van den Bongard, N. Hoekstra, M.E.P. Philippens, D. Eschbach, J.J.W. Lagendijk, B. Van Asselen PV-0281

> Out-of-plane motion correction in orthogonal cine-MRI registration
M. Seregni, C. Paganelli (Italy), J. Kipritidis, G. Baroni, M. Riboldi PV-0282

> Gated liver SBRT based on internal electromagnetic motion monitoring
E. Worm (Denmark), M. Høyer, R. Hansen, L.P. Larsen, B. Weber, C. Grau, P. Poulsen PV-0283

> 3D Performance Analysis of Cyberknife Synchrony® Respiratory Tracking System
M.C. Sahin, P. Hurmuz (Turkey), M. Yeginer, G. Yazici, G. Ozyigit PV-0284

> Abstract withdrawn PV-0285

> Quantifying registration uncertainties in image-based data mining
E.M. Vasquez Osorio (UK), A. McWilliam, J. Kennedy, C. Faivre-Finn, M. Van Herk PV-0286

> Determination of MC-based predictive models for personalized and fast kV-CBCT organ dose estimation
H. Chesneau, M. Vangvichith, E. Barat, C. Lafond, D. Lazaro-Ponthus (France) PV-0287

PRESIDENTIAL SYMPOSIUM

Presidential Symposium

11:40 - 12:10 | AUDITORIUM

11:40 > Mind the gaps
Speaker: Y. Lievens (Belgium) SP-0288

AWARD LECTURE

Jens Overgaard Legacy Award

12:10 - 12:30 | AUDITORIUM

Chair: M. Baumann (Germany)

12:10 > Individual patient data meta-analysis in head and neck cancer: an international and multidisciplinary collaboration
Speakers: J-P. Pignon (France), J. Bourhis (Switzerland), P. Blanchard (France)

AWARD LECTURE

Regaud Award Lecture

12:30 - 13:00 | AUDITORIUM

12:30 > Chair and introduction
Chair: U. Ricardi (Italy)

12:35 > More than one century after the serendipitous discovery of X-rays, there is still a bright future for radiation oncology …
Speaker: J. Bourhis (Switzerland) SP-0290

SYMPOSIUM

New paradigm in HNSCC

14:45 - 16:00 | AUDITORIUM

The treatment of head and neck cancer has been changing in the last decade. New markers have been identified giving options to treatment adaptation. The prevalence of HPV tumours in the oropharyngeal region is driving changes in volume definition, role of surgery and in potential de escalation in radiotherapy. The integration of these new concepts will be debated during the symposium.

Chair: E. Lartigau (France)
Co-chair: P. Dubinsky (Slovakia)

14:45 > Modern biomarkers for therapeutic strategy: radiation dose or volume modification
Speaker: M. Krause (Germany) SP-0291

15:10 > The changing role of head and neck surgeon in HPV-positive oropharyngeal squamous cell carcinoma, or do we still need surgery?
Speaker: C. Simon (Switzerland) SP-0292

15:35 > Radiation de-escalation strategies in HPV-positive squamous cell carcinoma
Speaker: J. Giralt (Spain) SP-0293

SYMPOSIUM WITH PROFFERED PAPERS

Costs and value of radiotherapy innovations: how to assess

14:45 - 16:00 | SCHUBERT `

After some examples of Health Technology Assessment (HTA) in the broader cancer care context, specific challenges related to assessing radiotherapy interventions and implementing HTA recommendations into the daily radiation oncology practice, will be discussed.

Thereafter, the necessary components of economic appraisals will be examined: what are radiotherapy costs and how to define them; how to evaluate the outcome of the treatments we deliver and the expected benefit to our patients. To illustrate the latter, the ESMO-Magnitude of Clinical Benefit scale will be presented and it will be discussed how the development of such a tool may be applied in the context of radiation oncology.

Chair: Y. Lievens (Belgium)
Co-chair: J. Novotny (Czech Republic)

14:45 > Health Technology Assessment: what's in a word?
A. Aggarwal (UK) SP-0294

15:06 > Radiotherapy costs: the good, the bad and the ugly
L. Perrier (France) SP-0295

15:27 > A critical quality appraisal of studies estimating the cost of radiotherapy
N. Defourny (Belgium) OC-0296

15:37 > Method of development of ESMO Magnitude of Clinical Benefit applicable for radiotherapy?
E.G.E. De Vries (The Netherlands) SP-0297

DEBATE

This house believes that proton guided photons (online MR guided therapy) will be superior to photon guided protons (CBCT proton therapy)

14:45 - 16:00 | STRAUS 2-3

Chair: J. Deasy (USA)

Co-chair: J. Sonke (The Netherlands)

14:45 > For the motion
Speaker: B. Raaymakers (The Netherlands) SP-0298

15:05 > Against the motion
Speaker: T. Lomax (Switzerland) SP-0299

15:25 > For the motion (rebuttal)
Speaker: B. Raaymakers (The Netherlands)

15:35 > Against the motion (rebuttal)
Speaker: T. Lomax (Switzerland)

15:45 > Discussion

PROFFERED PAPERS

Intra-fraction motion management

14:45 - 16:00 | LEHAR 1-3

Chair: Y. Seppenwoolde (Austria)

Chair: S. Nill (UK)

14:45 > Proof of tumor position during SBRT delivery using (limited-arc) CBCT imaging
C. Hazelaar (The Netherlands), M. Dahele, B. Slotman, W. Verbakel OC-0300

14:55 > Target position uncertainty during visually guided breathhold radiotherapy in locally advanced NSCLC
I. Scherman Rydhög (Denmark), S. Riisgaard Mortensen, M. Josipovic, R. Irming Jølck, T. Andresen, P. Rugaard Poulsen, G. Fredberg Persson, P. Munck af Rosenschöld OC-0301

15:05 > Dosimetric evaluation of a global motion model for MRI-guided radiotherapy
C. Paganelli (Italy), S. Albertini, F. Iudicello, B. Whelan, J. Kipritidis, D. Lee, P. Greer, G. Baroni, P. Keall, M. Riboldi OC-0302

15:15 > Evaluation of lung anatomy vs. lung volume reproducibility for scanned proton treatments under ABC.
L.A. Den Otter (The Netherlands), E. Kaza, R.G.J. Kierkels, M.O. Leach, D.J. Collins, J.A. Langendijk, A.C. Knopf OC-0303

15:25 > Real-time gamma evaluations of motion induced dose errors as QA of liver SBRT tumour tracking
T. Ravkilde, S. Skouboe (Denmark), R. Hansen, E.S. Worm, P.R. Poulsen OC-0304

15:35 > Validation of Dynamic Treatment-Couch Tracking for Prostate SBRT
S. Ehrbar (Switzerland), S. Schmid, S. Klöck, M. Guckenberger, O. Riesterer, S. Tanadini-Lang OC-0305

15:45 > Is re-gating a robust motion mitigation approach independent of PBS scanning scenario?
Y. Zhang (Switzerland), I. Huth, M. Wegner, D.C. Weber, A.J. Lomax OC-0306

SYMPOSIUM

Focus on ART: the clinical difficulties

14:45 - 16:00 | STRAUS 1

Chair: A. Duffton (UK)
Co-chair: V. Zager Marcius (Slovenia)

14:45 > Multi-parametric functional PET/MR imaging for RT individualisation
Speaker: D. Thorwarth (Germany) SP-0307

15:10 > Metabolic and functional MRI for glioblastoma dose-painting trial
Speaker: A. Laprie (France) SP-0308

15:35 > RAIDER study on plan of the day and dose-escalation for bladder cancer
Speaker: H. McNair (UK) SP-0309

SYMPOSIUM

Registration and fusion techniques

14:45 - 16:00 | STOLZ 1-2

The use of image registration and fusion promises further improvement of brachytherapy treatment. In this symposium registration techniques for different imaging modalities also for deformable registration are covered. Moreover uncertainties, pitfalls, and differences to the use of image fusion in external beam therapy as well as its application in focal prostate brachytherapy are discussed.

Chair: F. Siebert (Germany)
Co-chair: C. Gaisberger (Austria)

14:45 > Rigid registration techniques for different imaging modalities
Speaker: N. Nesvacil (Austria) SP-0310

15:10 > Deformable registration for dose summation
Speaker: K. Tanderup (Denmark) SP-0311

15:35 > Imaging and fusion techniques for focal brachytherapy
Speaker: L. Beaulieu (Canada) SP-0312

PROFFERED PAPERS

Breast and gynaecology

14:45 - 16:00 | LEHAR 5

Chair: A. Kirby (UK)

Chair: O. Kaidar-Person (Israel)

14:45 > What is the effect of axillary treatment on patient reported outcomes in breast cancer patients?
M.L. Gregorowitsch (The Netherlands), H.M. Verkooijen, N. Fuhler, D.A. Young Afat, A.N.T. Kotte, M. Vulpen van, C.H. Gils van, D.H. Bongard van den OC-0313

14:55 > Partial breast radiotherapy after breast conservation: 5 year outcomes from the IMPORT LOW (CRUK/06/003) phase III trial
C. Coles (UK), C. Griffin, A. Kirby, R. Agrawal, A. Alhasso, I. Bhattacharya, A.M. Brunt, L. Ciurlionis, H. Chan, E. Donovan, M. Emson, A. Harnett, J. Haviland, P. Hopwood, M. Jefford, R. Kaggwa, E. Sawyer, I. Sybdikus, Y. Tsang, D. Wheatley, M. Wilcox, J. Yarnold, J. Bliss SP-0314

15:05 > Partial breast radiotherapy after breast conservation for breast cancer: early results from the randomised DBCG PBI trial
B. Offersen (Denmark), H.M. Nielsen, M.S. Thomsen, E.H. Jacobsen, M.H. Nielsen, L. Stenbygaard, A.N. Pedersen, M. Krause, M.B. Jensen, J. Overgaard SP-0315

15:15 > Single dose external beam preoperative radiotherapy in breast cancer: experience and guidelines
K.R. Charaghvandi (The Netherlands), S. Yoo, B. Van Asselen, M.D. Den Hartogh, H.J.G.D. Van den Bongard, J.K. Horton OC-0316

15:25 > MR radiomics and fractal dimension in cervical cancer predicting pathological complete response
N. Dinapoli (Italy), A.L. Valentini, A. Pesce, R. Gatta, C. Masciocchi, V. Ninivaggi, B. Gui, G. Mattana, M.A. Gambacorta, R. Autorino, M. Campitelli, A. Testa, G. Chiloiro, J. Lenkowicz, C. Casà, G. Scambia, L. Bonomo, V. Valentini OC-0317

15:35 > Hematological toxicity during bowel sparing IMRT: Exploratory analysis from PARCER Phase III trial.
S. Lewis, S. Chopra (India), P. Naga, N. Bharadwaj, E. Dandpani, U. Mahantshetty, R. Engineer, J. Swamidas, J. Ghosh, S. Gupta, S. Shrivastava OC-0318

15:45 > Cervix cancer: dose-volume effects in pathologic lymph nodes
W. Bacorro (Philippines), R. Mazeron, I. Dumas, A. Escande, A. Huertas, R. Sun, P. Castelnau-Marchand, C. Haie-Meder, C. Chargari OC-0319

POSTER VIEWING 7

Upper and lower GI

14:45 - 16:00 | POSTER AREA

Chair: A.H. Ree (Norway)
Chair: F. Cellini (Italy)

> Stereotactic body radiotherapy for liver metastases based on functional treatment planning
M.M. Fode (Denmark), J. Petersen, E. Worm, M. Sørensen, K. Bak-Fredslund, S. Keiding, M. Høyer PV-0320

> MRI guided stereotactic radiotherapy for locally advanced pancreatic cancer
H.D. Heerkens (The Netherlands), M. Van Vulpen, B. Erickson, O. Reerink, M. Intven, C.A.T. Van den Berg, I.Q. Molenaar, F.P. Vleggaar, G.J. Meijer PV-0321

> Rapid Early Response of Gastroesophageal Junction Tumors During Real-time MRI-Guided Radiotherapy
H. Musunuru (USA), S. Rosenberg, J. Bayouth, K. Mitteur, M. Ritter, B. Paliwal, M. Witek, A. Baschnagel, N. Uboha, S. Lubner, N. Loconte, P. Harari, M. Bassetti PV-0322

> Development of a prognostic model incorporating PET texture analysis in oesophageal cancer patients
E. Spezi (UK), K. Foley, R. Hills, B. Berthon, C. Marshall, W. Lewis, T. Crosby, A. Roberts PV-0323

> FDG-PET based pelvic bone marrow dose predicts for blood cell nadirs in CT-RT for anal cancer
P. Franco (Italy), F. Arcadipane, R. Ragona, A. Lesca, E. Gallio, M. Mistrangelo, P. Cassoni, M. Baccega, P. Racca, R. Faletti, N. Rondi, M. Morino, U. Ricardi PV-0324

> Tumor Regression Grading in the CAO/ARO/AIO-04 phase 3 trial in locally advanced rectal carcinoma
E. Fokas (Germany), M. Ghadimi, R. Fietkau, P. Ströbel, A. Hartmann, R. Sauer, T. Liersch, T. Hothorn, C. Wittekind, C. Rödel PV-0325

> Time to surgery and pCR after neoadjuvant CRT in rectal cancer: a population study on 2113 patients
G. Macchia (Italy), M. Gambacorta, G. Chiloiro, G. Mantello, A. De Paoli, G. Montesi, A. Sainato, M. Lupattelli, L. Caravatta, F. Perrotti, M. Rosetto, F. Filippone, R. Niespolo, M. Osti, L. Belgioia, C. Boso, A. Fontana,

S. Parisi, A. Galardi, L. Turri, P. Sciacero, L. Giaccherini, C. Masciocchi, A. Morganti, V. Valentini PV-0326

> The effect of postoperative complications on Quality of Life in elderly rectal cancer patients
A.M. Couwenberg (The Netherlands), F.S.A. De Beer, M.P.W. Intven, M.E. Hamaker, W.M.U. Van Grevenstein, H.M. Verkooijen PV-0327

> Factors associated with complete response after brachytherapy for rectal cancer; the HERBERT study.
E.C. Rijkmans (The Netherlands), R.A. Nout, E.M. Kerkhof, A. Cats, B. Van Triest, A. Inderson, R.P.J. Van den Ende, M.S. Laman, M. Ketelaars, C.A.M. Marijnen PV-0328

PROFFERED PAPERS

Head and Neck

16:30 - 17:30 | AUDITORIUM

Chair: J. Giralt (Spain)

Chair: O. Riesterer (Switzerland)

16:30 > Does margin matter? Distribution of loco-regional failures after primary IMRT for Head and Neck cancer
R. Zukauskaite (Denmark), C.R. Hansen, C. Brink, C. Grau, E. Samsøe, J. Johansen, E. Andersen, J. Petersen, J. Overgaard, J. Eriksen OC-0329

16:40 > Locoregionally Recurrent Head and Neck Squamous Cell Carcinoma
S.Y. Wu (Chinese Taipei) OC-0330

16:50 > Cetuximab versus Platinum-based Chemoradiation in Locally Advanced p16 Positive Oropharyngeal Cancer
C. Barney (USA), S. Walston, P. Zamora, N. Nolan, V. Diavolitsis, D. Blakaj, J. Wobb, D. Mitchell, J. Grecula, P. Savvides, A. Bhatt OC-0331

17:00 > Impact of HPV on effect of chemotherapy in SCCHN : results of the GORTEC 2007-01 randomized trial
X. Sun, Y. Tao (France), A. Auperin, C. Sire, L. Martin, C. Khoury, P. Maingon, E. Bardet, M. Lapeyre, Y. Pointreau, N. Ollivier, A. Cornely, O. Casiraghi, J. Bourhis OC-0332

17:10 > Prognostic impact of HPV and smoking in RT of oropharyngeal cancer: the MARCH-HPV project
P. Lassen (Denmark), B. Lacas, A. Trotti, B. Zackrisson, Q. Zhang, J. Overgaard, J.P. Pignon, P. Blanchard OC-0333

17:20 > Prospective MR assessment of dose-response kinetics of non-target muscles in head and neck cancer
A.S.R. Mohamed, R. Davuluri, S. Frank, Y. Ding, S. Lai, J. Wang, C. Fuller (USA), K. Hutcheson OC-0334

SYMPOSIUM

GTFRCC

16:30 - 17:30 | SCHUBERT

Chair: C. Grau (Denmark)
Chair: D. Jaffray (Canada)

16:30 > GTFRCC: where to go from here?
Speaker: Y. Lievens (Belgium) SP-0335

16:45 > Costs and needs of radiotherapy: a regional perspective
Speaker: E.H. Zubizarreta (Austria) SP-0336

17:00 > "From the ground up" – tackling challenges at the country level
Speaker: M.L. Yap (Canada) SP-0337

17:15 > Access to radiotherapy: cancer-specific approaches to a global problem
Speaker: D. Rodin (Canada) SP-0338

PROFFERED PAPERS

Dose measurement and dose calculation for proton beams

16:30 - 17:30 | STRAUS 2-3

Chair: H. Fuchs (Austria)
Chair: P.S. Skyt (Denmark)

16:30 > Water calorimetry in a pulsed PBS proton beam
S. Rossomme (Belgium), R. Trimaud, V. Floquet, M. Vidal, A. Gerard, J. Herault, H. Palmans, J.M. Denis, D. Rodriguez Garcia, S. Deloule, S. Vynckier OC-0339

16:40 > Validation of HU to mass density conversion curve: Proton range measurements in animal tissues
I. Góra (Austria), G. Kragl, S. Vatnitsky, T. Böhlen, M. Teichmeister, M. Stock OC-0340

16:50 > Monte Carlo dose calculations using different dual energy CT scanners for proton range verification
I.P. Almeida (The Netherlands) OC-0341

17:00 > Monte Carlo simulations of a low energy proton beam and estimation of LET distributions
T.J. Dahle (Norway), A.M. Rykkelid, C.H. Stokkevåg, A. Görgen, N.J. Edin, E. Malinen, K.S. Ytre-Hauge OC-0342

17:10 > Experimental setup to measure magnetic field effects of proton dose distributions: simulation study
S. Schellhammer (Germany), B. Oborn, A. Lühr, S. Gantz, P. Wohlfahrt, M. Bussmann, A. Hoffmann OC-0343

17:20 > Experimental validation of TOPAS neutron dose for normal tissue dosimetry in proton therapy patients
G. Kuzmin (USA), A. Thompson, M. Mille, C. Lee OC-0344

PROFFERED PAPERS

Treatment planning applications

16:30 - 17:30 | LEHAR 1-3

Chair: T. Berger (Denmark)

Chair: V.N. Hansen (UK)

16:30 > Comparing cranio spinal irradiation planning for photon and proton techniques at 15 European centers
E. Seravalli (The Netherlands), M. Bosman, G. Smyth, C. Alapetite, M. Christiaens, L. Gandola, B. Hoeben, G. Horan, E. Koutsouveli, M. Kusters, Y. Lassen, S. Losa, H. Magelssen, T. Marchant, H. Mandeville, F. Oldenburger, L. Padovani, C. Paraskevopoulou, B. Rombi, J. Visser, G. Whitfield, M. Schwarz, A. Vestergaard, G.O. Janssens OC-0345

16:40 > Multicentre audit of SBRT oligometastases plan quality
J. Lee (UK), R. Patel, C. Dean, G. Webster, D.J. Eaton OC-0346

16:50 > Key factors for SBRT planning of spinal metastasis: Indications from a large scale multicentre study
M. Esposito (Italy), L. Masi, M. Zani, R. Doro, D. Fedele, S. Clemente, C. Fiandra, F.R. Giglioli, C. Marino, S. Russo, M. Stasi, L. Strigari, E. Villaggi, P. Mancosu OC-0347

17:00 > Reducing the dosimetric impact of variable gas volume in the abdomen during RT of esophageal cancer
P. Jin, J. Visser (The Netherlands), K.F. Crama, N. Van Wieringen, A. Bel, M.C.C.M. Hulshof, T. Alderliesten OC-0348

17:10 > Prediction of GTV median dose differences benefit Monte Carlo re-prescription in lung SBRT
D. Dechambre (Belgium), Z.L. Janvary, N. Jansen, C. Mievis, P. Berkovic, S. Cucchiaro, V. Baart, C. Ernst, P. Coucke, A. Gulyban OC-0349

17:20 > ExacTrac®-based Fractionated Radiosurgery (fSRS) of Choroidal Melanoma (CM)
M. Wösle (Germany), P. Goldschmidt, G. Lohm, L. Grajewski, L. Krause, I. Ciernik OC-0350

PROFFERED PAPERS

Adaptive strategies

16:30 - 17:30 | STRAUS 1

Chair: H. McNair (UK)

Chair: J. Stevanovic (Serbia)

16:30 > Analysis of concordance in multicentre adaptive bladder trials quality assurance
E. Parsons (UK), D. Megias, A. Baker, S. Hafeez, E. Hall, H. McNair,

		Y. Tsang, R. Huddart	OC-0351
16:40	>	CBCT-guided evolutive library for cervix adaptive IMRT *B. Rigaud (France), A. Simon, M. Gobeli, C. Lafond, D. Williaume, J. Leseur, J. Castelli, P. Haigron, R. De Crevoisier*	OC-0352
16:50	>	Implementation of RTT led 'plan of the day' adaptive radiotherapy in cervical cancer *A. Baker (UK), T. Hague, Y. Tsang, P.J. Hoskin*	OC-0353
17:00	>	Dosimetric impact of anatomical changes in photon and particle therapy for pancreatic cancer *K. Crama (The Netherlands), A.C. Houweling, J. Visser, K. Fukata, C.R.N. Rasch, T. Ohno, A. Bel, A. Van der Horst*	OC-0354
17:10	>	Which anatomical changes in Head and Neck cancer lead to Repeat CT/planning? *S. Van Beek, O. Hamming-Vrieze, A. Al Mamgani, A. Navran, J. Van de Kamer (The Netherlands), P. Remeijer*	OC-0355
17:20	>	Adaptive strategy for rectal cancer: evaluation of plan selection of the first 20 clinical patients *R. De Jong (The Netherlands), N. Van Wieringen, J. Visser, J. Wiersma, K. Crama, D. Geijsen, L. Lutkenhaus, A. Bel*	OC-0356

PROFFERED PAPERS

Physics Dosimetry

16:30 - 17:30 | STOLZ 1-2

Chair: L. Beaulieu (Canada)

Chair: J. Hofbauer (Austria)

	>	Abstract withdrawn	OC-0357
16:30	>	Evaluation of the Advanced Collapsed-cone Engine dose calculation algorithm for COMS eye plaques *H. Morrison (Canada), G. Menon, M. Larocque, E. Weis, R. Sloboda*	OC-0358
16:42	>	Microdosimetric evaluation of intermediate-energy brachytherapy sources using Geant4-DNA *G. Famulari (Canada), P. Pater, S.A. Enger*	OC-0359
16:54	>	Dose warping uncertainties for the cumulative rectal wall dose from brachytherapy in cervical cancer *L.E. Van Heerden (The Netherlands), N. Van Wieringen, C. Koedooder, C.R.N. Rasch, B.R. Pieters, A. Bel*	OC-0360
17:06	>	Commissioning of applicator-guided SBRT with HDR Brachytherapy for Advanced Cervical Cancer *S. Aldelaijan, S. Wadi-Ramahi (Saudi Arabia), A. Nobah, N. Jastaniyah*	OC-0361

17:18 > Precision IORT – image guided IORT including online CBCT based Monte Carlo treatment planning
F. Schneider (Germany), L.D. Jimenez, F. Bludau, A. Jahnke, C. Illana, J. Fleckenstein, S. Clausen, U. Obertacke, F. Wenz OC-0362

PROFFERED PAPERS

Eye/GYN

16:30 - 17:30 | LEHAR 5

Chair: I. Jürgenliemk-Schulz (The Netherlands)
Chair: C. Haie-Meder (France)

16:30 > Ruthenium-106 brachytherapy for iris and choroidal body melanomas
F.P. Peters (The Netherlands), M. Marinkovic, N. Horeweg, M.S. Laman, J.C. Bleeker, M. Ketelaars, G.P.M. Luyten, C.L. Creutzberg OC-0363

16:40 > Nomogram for predicting maculopathy in patients treated with Ru106 brachytherapy for uveal melanoma
L. Tagliaferri (Italy), A. Larichiuta, M. Pagliara, C. Masciocchi, J. Lenkowicz, L. Azario, R. Autorino, M.A. Gambacorta, V. Valentini, M.A. Blasi OC-0364

16:50 > Dose contribution to pelvic nodes of image-guided adaptive brachytherapy in cervical cancer
W. Bacorro (Philippines), I. Dumas, A. Levy, E. Rivin del Campo, C.H. Canova, T. Felefly, A. Huertas, F. Marsolat, P. Maroun, C. Haie-Meder, C. Chargari, R. Mazeron OC-0365

17:00 > Cervical cancer with bladder invasion: outcomes and vesicovaginal fistula prognostic factors
R. Sun (France), R. Mazeron, I. Koubaa, I. Dumas, C. Baratiny, F. Monnot, P. Maroun, E. Deutsch, P. Morice, C. Haie-Meder, C. Chargari OC-0366

17:10 > Dose-response curve for vaginal stenosis. Final results of a prospective study.
M. Federico (Spain), A. Tornero, S. Torres, B. Pinar, M. Rey Baltar, M. Lloret, P. Lara OC-0367

17:20 > Postoperative vaginal brachytherapy: a quality assurance dummy-run procedure in the PORTEC-4 trial
R. Nout (The Netherlands), E. Astreinidou, M. Laman, C. Creutzberg OC-0368

POSTER VIEWING 8

Radiobiology

16:30 - 17:30 | POSTER AREA

Chair: H. Lyng (Norway)

Chair: L. Marignol (Ireland)

> The potential of hyperpolarized ^{13}C MRS to monitor the effect of vascular disrupting agents
A. Iversen (Denmark), M. Busk, L. Bertelsen, C. Laustsen, O. Munch, T. Nielsen, T. Wittenborn, J. Bussink, J. Lok, H. Stødkilde-Jørgensen, M. Horsman **PV-0369**

> MicroRNA-200c radiosensitizes Human Cancer Cells with Activated EGFR or HER2-associated Signaling
I.A. Kim (Republic of Korea), T. Koo, B. Cho, E. Choi, D. Lee, H. Kim, D. Kim, J. Park **PV-0370**

> Novel molecular radiobiology for personalised prostate cancer radiotherapy
N. McDermott, A. Meunier, T. Jameson, A. Mansour, C. Haynes, A. Flores, A. O'Callaghan, L. Marignol (Ireland) **PV-0371**

> Histology-specific quantitative mapping and targeting of glucose and glutamine metabolism in NSCLC
J. Bussink (The Netherlands), T.W.H. Meijer, P.N. Span, W.J.M. Peeters, R. Biemans, L.F. De Geus-Oei, D. Vriens, L.J. Dubois **PV-0372**

> Epigenetic and metabolic reprogramming as a target for prostate tumor radiosensitization
A. Dubrovska (Germany), C. Peitzsch, A. Tyutyunnykova, M. Cojoc **PV-0373**

> Molecular insights into a disease-relevant DNA damage response pathway
B. Xu (USA) **PV-0374**

AWARD LECTURE

Jack Fowler University of Wisconsin Award

17:40 - 17:50 | AUDITORIUM

Chair: M. Krause (Germany)

Chair: G. Meijer (The Netherlands)

17:40 > Dosimetric quantification of the „true" ano-inguinal lymphatic drainage of anal cancer patients
H. Dapper (Germany) **OC-0375**

AWARD LECTURE

Company Award Lectures

17:50 - 18:10 | AUDITORIUM

Chair: M. Krause (Germany)

Chair: G. Meijer (The Netherlands)

17:50 > Trajectory Optimisation in Radiotherapy Using Sectioning (TORUS) OC-0376
C. Locke (USA)

18:00 > Limited interfractional variability of respiration-induced tumor motion in esophageal cancer RT OC-0377
P. Jin (The Netherlands)

Monday 8 May 2017

TEACHING LECTURE

State of the art multimodality treatment of rectal cancer

08:00 - 08:40 | AUDITORIUM

Chair: M.A. Gambacorta (Italy)

08:00 > State of the art multimodality treatment of rectal cancer
Speaker: C. Rödel (Germany) SP-0378

TEACHING LECTURE

SBRT for spine and non-spine bone metastases: what role in routine practice?

08:00 - 08:40 | STOLZ 1-2

Chair: M. Hoyer (Denmark)

08:00 > SBRT for spine and non-spine bone metastases: what role in routine practice?
Speaker: M. Dahele (The Netherlands) SP-0379

TEACHING LECTURE

Challenges in proton radiotherapy

08:00 - 08:40 | SCHUBERT

Chair: M. Krause (Germany)

08:00 > How to reduce range uncertainties
Speaker: A. Knopf (The Netherlands) SP-0380

08:20 > Clinical challenges we currently face
Speaker: E. Troost (Germany) SP-0381

TEACHING LECTURE

Targeting histones and epigenetic mechanisms in radiation biology and oncology

08:00 - 08:40 | LEHAR 4

Chair: C. Vens (The Netherlands)

08:00 > Targeting histones and epigenetic mechanisms in radiation biology and oncology
Speaker: A.H. Ree (Norway) SP-0382

TEACHING LECTURE

State of the art and future improvements in in-room cone beam CT image quality

08:00 - 08:40 | STRAUS 2-3

Chair: H. De Boer (The Netherlands)

08:00 > State of the art and future improvements for in-room cone-beam CT image quality
Speaker: D. Moseley (Canada) SP-0383

TEACHING LECTURE

Radiomics for physicists – understanding feature extraction, modelling, performance validation and applications of radiomics

08:00 - 08:40 | LEHAR 1-3

Chair: A. Dekker (The Netherlands)

08:00 > Radiomics for physicists – understanding feature extraction, modelling, performance validation and applications of radiomics
Speaker: S. Walsh (The Netherlands) SP-0384

TEACHING LECTURE

Focus on lung cancer: What a radiotherapy department should offer their patients

08:00 - 08:40 | STRAUS 1

Chair: A. Kostovski (Bosnia and Herzegovina)

08:00 > Focus on lung cancer: What a radiotherapy department should offer their patients
Speaker: M. Guckenberger (Switzerland) SP-0385

TEACHING LECTURE

How to write a research proposal for a grant?

08:00 - 08:40 | LEHAR 5

Chair: T. Gauer (Germany)

08:00 > How to write a research proposal for a grant?
Speaker: P. Lambin (The Netherlands) SP-0386

SYMPOSIUM

Rectal cancer – prediction and individualisation

08:45 - 10:00 | AUDITORIUM

The approach to apply the same schedule of 5-fluorouracil-based chemoradiotherapy (CRT) or short-course radiotherapy to all patients with stage II/III rectal cancer need to be questioned. Treatment individualisation according to location, mesorectal fascia margin status, molecular profiles, tumor response, and patients' preferences becomes increasingly popular and will render multimodal treatment of rectal cancer more risk-adapted. This symposium will address novel clinical trials on the role of sequence of treatment components, including induction and consolidation chemotherapy before or after CRT, minimal or omitted surgery following complete response to CRT, and modern imaging and molecular profiles to predict response and guide treatment options.

Chair: C. Rödel (Germany)
Co-chair: B. Bystricky (Slovakia)

08:45 > Sequence of radiotherapy, chemotherapy, and surgery: current concepts and trials
Speaker: R. Glynne-Jones (UK) SP-0387

09:10 > Organ preservation by optimised radiotherapy: ready for prime time?
Speaker: G. Beets (The Netherlands) SP-0388

09:35 > Imaging and molecular profiles to predict response to chemoradiotherapy: where do we stand?
Speaker: K. Haustermans (Belgium) SP-0389

SYMPOSIUM

Radiotherapy of brain tumours

08:45 - 10:00 | STOLZ 1-2

This symposium will give an update on state of the art treatments in adulthood brain tumours; in particular, the first two speakers will illustrate the therapeutic strategies

relative to low grade glioma and grade III glioma, emphasising the role of biology and molecular biomarkers in selecting appropriate treatments and integrating chemotherapy and radiotherapy at the best. Finally, the last speaker will present the current concepts for "paediatric" brain tumours in adults, showing how there is a clear need for specifically tailored concepts in adults.

Chair: U. Ricardi (Italy)
Co-chair: M. Chorvath (Slovakia)

08:45 > Radiotherapy for low grade glioma in adults in 2017. What's crazy!
Speaker: S. Villà Freixa (Spain) SP-0390

09:10 > What is the role of combined chemo-radiotherapy for grade III glioma in adults?
Speaker: A. Chalmers (UK) SP-0391

09:35 > 'Paediatric' brain tumours in adults
Speaker: C. Seidel (Germany) SP-0392

SYMPOSIUM

MR guided radiotherapy: the new standard of care in 10 years time

08:45 - 10:00 | SCHUBERT

MRI with its superb soft tissue contrast and capacity for functional imaging is increasingly being used for image-guided radiotherapy in a number of indications. In 10 years MRI may therefore be utilised for a wide range of radiotherapy techniques. Pioneering studies have already provided evidence for improved clinical outcome by use of MRI guided adaptive brachytherapy and technical innovations such as the MRI-Linac will make on line MRI guided adaptive external beam radiotherapy a clinical reality. With this symposium we aim to provide a comprehensive overview of the challenges and opportunities that MRI guided external beam radiotherapy and brachytherapy provide.

Chair: J.C. Lindegaard (Denmark)
Co-chair: B. Segedin (Slovenia)

08:45 > Clinical opportunities with MR guided external beam RT
Speaker: S. Mook (The Netherlands) SP-0393

09:03 > MR guided brachytherapy - successes and potential future developments
Speaker: P. Hoskin (UK) SP-0394

09:21 > Challenges associated with MR guided radiotherapy
Speaker: D. Jaffray (Canada) SP-0395

09:39 > Can we perform RCTs evaluating MR guided radiotherapy?
Speaker: V. Valentini (Italy) SP-0396

SYMPOSIUM WITH PROFFERED PAPERS

Novel approaches in head and neck tumour control

08:45 - 10:00 | LEHAR 4

Chair: R. Suwinski (Poland)
Co-chair: A. Schratter-Sehn (Austria)

08:45 > State of the art in head and neck tumour radiobiology
B. O'Sullivan (Canada) SP-0397

09:12 > Novel developments in the radiobiology of HPV-positive head and neck tumours
S. Nuyts (Belgium) SP-0398

09:39 > Transcriptome analyses of the radiation response in HNSCC cells with different radiation sensitivity
J. Heß (Germany), A. Michna, U. Schötz, M. Selmansberger, H. Zitzelsberger, K. Unger, K. Lauber OC-0399

09:49 > Prognostic impact of tumor infiltrating lymphocytes and PD-L1 expression in head and neck cancers
D. Ou (France), J. Adam, I. Garberis, P. Blanchard, F. Nguyen, A. Levy, O. Casiraghi, P. Gorphe, I. Breuskin, F. Janot, S. Temam, J. Scoazec, E. Deutsch, Y. Tao OC-0400

SYMPOSIUM

Experimental therapies

08:45 - 10:00 | STRAUS 2-3

This session deals with two treatment modifiers and a verification technique based on Cerenkov radiation. This radiation is emitted when particles pass through tissue exceeding the speed of light and may be used for QA and real time *in vivo* dosimetry. Gold nanoparticles tend to have selective uptake in tumours and can be used as photothermal agent or to enhance local delivery of dose. In grid therapy, dose is spatially modulated. As hypofractionated boost this was effective in small clinical series. Its big advantage is reduced toxicity, and the main interest has been in bulky tumours and palliation.

Chair: M. Van Herk (UK)
Co-chair: F. Mahmood (Denmark)

08:45 > Grid therapy: past, present, and future
Speaker: A. Siegbahn (Sweden) SP-0401

09:10 > Strategies for radiosensitization with gold nanoparticles
Speaker: S. Krishnan (USA) SP-0402

09:35 > Potentials of Cerenkov imaging in radiotherapy
Speaker: A. Spinelli (Italy) SP-0403

SYMPOSIUM

Adaptive radiotherapy (both anatomical and 'functional' changes)

08:45 - 10:00 | LEHAR 1-3

The symposium will cover the topic with three lectures. The first lecture (K. Brock) will focus on techniques for image registration in the presence of anatomical and functional changes and how accurate are for clinical use; practical issues concerning procedures for the creation of a feasible dose accumulation and strategies for reporting dose accumulation results will also be discussed. Then, Sonke will illustrate the magnitude of anatomical changes, depicting different approaches of adaptive strategies to counteract them, including actually implemented strategies as well as current challenges and future perspective. In the last lecture (Toma-Dasu) the challenges of biologically adapted radiation therapy, based on tumour responsiveness assessed with functional imaging, will be discussed, focusing on the potential of functional imaging to assess the tumour response early on during the treatment to guide ART strategies in poorly responding patients.

Chair: C. Fiorino (Italy)
Co-chair: P. Winkler (Austria)

08:45 > Development and clinical implementation of image registration and dose accumulation
Speaker: K. Brock (Canada) SP-0404

09:10 > Adaptive strategies to account for anatomical changes
Speaker: J. Sonke (The Netherlands) SP-0405

09:35 > Adaptive strategies to account for functional changes
Speaker: I. Toma-Dasu (Sweden) SP-0406

SYMPOSIUM

Focus on lung cancer: What a radiotherapy department should offer their patients

08:45 - 10:00 | STRAUS 1

This symposium was organised in collaboration with the EANM and is dedicated to the treatment of lung cancer. The session will start with a presentation by A. Santos (PT) and will discuss the artifacts we encounter in the acquisition of PET/CT for RT

planning. P. Berkovic (BE) will continue the session with answering the questions when and for whom an adaptive strategy can be used. The session will be finished by M. Josipovic (DK) explaining the added value of deep inspiration breath hold (DIBH) in local regional treatment of Lung cancer.

Chair: M. Kamphuis (The Netherlands)
Co-chair: M. Zemanova (Czech Republic)

08:45	>	PET/CT artefacts for RT planning *Speaker: A. Santos (Portugal)*	SP-0407
09:10	>	ART in lung cancer: when and for whom? *Speaker: P. Berkovic (Belgium)*	SP-0408
09:35	>	Improvements in physics, DIBH in lung *Speaker: M. Josipovic (Denmark)*	SP-0409

SYMPOSIUM

Education and research grants

08:45 - 10:00 | LEHAR 5

Within this session, education and research grants, attention will be devoted on ERC grants, ESTRO educational and mobility grants. Light will be shed on the ins and outs on how to be successful in obtaining ERC grants. Furthermore, an overview of the ESTRO grants will be given, with a focus on the several topics and criteria, followed by testimonies of several young researchers. Their experiences, progress and results on organising an evidence-based radiation oncology course, on establishing an intravital brain imaging modality and on 3D dosimetry within proton therapy will be shared.

Chair: L. Dubois (The Netherlands)
Co-chair: L. Marignol (Ireland)

08:45	>	ERC grants - how to succeed *Speaker: M. Vooijs (The Netherlands)*	SP-0410
09:15	>	ESTRO educational grants and mobility grants *Speaker: M-C. Vozenin (Switzerland)*	SP-0411
09:30	>	ESTRO educational grant - if you don't try, you won't win *Speaker: M. Spalek (Poland)*	SP-0412
09:40	>	ESTRO mobility grant - establishing intravital brain imaging in preclinical models *Speaker: J. Birch (UK)*	SP-0413
09:50	>	Experience with the ESTRO mobility grant; proton irradiation of a 3D dosimeter *Speaker: E.M. Høye (Denmark)*	SP-0414

POSTER VIEWING 9

Dosimetry

08:45 - 10:00 | POSTER AREA

Chair: P. Carrasco de Fez (ES)

Chair: T. Gauer (Germany)

> Verification of pre-treatment DVH measurements for individual plan QA
> *J. Stroom (Portugal), J. Boita, M. Rodrigues, C. Greco* **PV-0415**

> Novel methods for normal tissue dose in epidemiological studies of second cancer in radiotherapy
> *C. Lee (USA), J.W. Jung, C. Lee, M.M. Mille, E. Mosher, C. Pelletier, G. Kuzmin* **PV-0416**

> Validation of an analytical peripheral photon dose model for FFF modality
> *M.T. Garcia-Hernandez (Spain), B. Sanchez-Nieto, J. Roselló Ferrando, L. Irazola, J.A. Terrón, F. Sanchez-Doblado* **PV-0417**

> Characterisation of the prototype plastic scintillation detector (PSD) in a strong magnetic field
> *M. Asghar (USA), W. Zhifei, Y. Suh, D. O'Brien, S. Beddar, S.A. Buzdar, G.S. Ibbott* **PV-0418**

> The impact that geometric variability in ionization chamber construction has on kQQo
> *J. Puxeu Vaqué (Spain), M. Duch Guillen, M.C. Lizuain Arroyo, W.H. Nailon* **PV-0419**

> Learn before you measure: Method of single-isolated errors analysis for ArcCheck.
> *M. Gizynska (Poland), M. Bukat, J. Cybowska, M. Filipek, M. Garbacz, I. Scisniak, A. Spyra, D. Szalkowski, A. Walewska* **PV-0420**

> In-magnet measurement setup for proof-of-concept and commissioning of MR integrated proton therapy
> *A. Lühr (Germany), S. Gantz, S. Schellhammer, O. Zarini, K. Zeil, U. Schramm, A. Hoffmann* **PV-0421**

> Direct determination of kQ in a clinical carbon ion beam using water calorimetry
> *J.M. Osinga-Blättermann (Germany), U. Ankerhold, S. Brons, S. Greilich, O. Jäkel, A. Krauss* **PV-0422**

> AAPM TG-158 recommendations for neutron dosimetry for photon, electron, and light-ion therapy.
> *R. Howell (USA), B. Bednarez, S. Kry* **PV-0423**

PROFFERED PAPERS

Upper and Lower GI

10:30 - 11:30 | AUDITORIUM

Chair: C. Marijnen (The Netherlands)

Chair: D. Sebag-Montefiore (UK)

10:30 > SBRT for Primary Liver Cancer in Routine Clinical Practice: A Patterns-of-Care and Outcome Analysis
T. Brunner (Germany), N. Andratschke, S. Gerum, N. Abbasi-Senger, M. Duma, O. Blanck, V. Lewitzki, C. Ostheimer, F. Momm, S. Wachter, H. Alheit, M. Guckenberger, E. Gkika **OC-0424**

10:40 > Clinical experience with stereotactic MR-guided adaptive radiation therapy for pancreatic tumors
A. Bruynzeel (The Netherlands), F. Lagerwaard, O. Bohoudi, S. Tetar, N. Haasbeek, S.S. Oei, B. Slotman, M. Meijerink, S. Senan, M. Palacios **OC-0425**

10:50 > Adjuvant chemoradiation in pancreatic cancer: impact of radiotherapy dose on survival
A.G. Morganti (Italy), M. Falconi, G.C. Mattiucci, A. Arcelli, F. Bertini, A. Farioli, A. Guido, M.C. Di Marco, L. Fuccio, S. Alfieri, F.A. Calvo, B.W. Maidment 3rd, R.C. Miller, M. Reni, G. Macchia, F. Deodato, S. Cilla, G. Di Gioia, F. Cellini, V. Valentini **OC-0426**

11:00 > Prediction models in rectal cancer: an update of a pooled analysis of 3770 randomized patients
V. Valentini, C. Masciocchi, J. Van Soest, G. Chiloiro, E. Meldolesi, M. Gambacorta (Italy), J. Gerard, S. Ngan, J. Bosset, A. Sainato, A. Damiani, N. Dinapoli, P. Lambin, A. Dekker, C. Roedel **OC-0427**

11:10 > Surgical time to increase pCR in rectal cancer: pooled set of 3078 patients from 7 randomized trials
G. Chiloiro (Italy), C. Masciocchi, J. Van Soest, E. Meldolesi, M. Gambacorta, J. Bosset, J. Doyen, J. Gerard, S. Ngan, C. Roedel, F. Cellini, A. Damiani, N. Dinapoli, P. Lambin, A. Dekker, V. Valentini **OC-0428**

11:20 > Neoadjuvant chemoradiotherapy or 5x5 Gy followed by chemotherapy in rectal cancer: the RAPIDO trial
C. Marijnen (The Netherlands), For the cooperative group of the RAPIDO trial **OC-0429**

MULTIDISCIPLINARY TUMOUR BOARD

Brain metastases

10:30 - 11:30 | STOLZ 1-2

Chair: M. Hoyer (Denmark)
ESTRO Fellow: O. Kaidar-Person (Israel)
Panellist: T. Czech (Austria)
Panellist: R. Bartsch (Austria)

JOINT SYMPOSIUM

ESTRO-ESR: Radiomics and imaging databases for precision radiation oncology

10:30 - 11:30 | SCHUBERT

Radiomics is gaining an always greater attention in our scientific communities. Images are becoming less pictures and more mines of information that can be used by clinicians as decision-making tools, from prognosis assessment to therapy choice and outcome prediction.

New paradigms, new uncertainty measurements, new statistical and mathematical tools are required to take advantage of radiomics potentialities and becoming familiar with these approaches is unavoidable.

Facing the entity of the challenge an interdisciplinary approach is mandatory with all the imaging based medical specialties hinged on imaging knowledge and images sharing in big data biobanks and dicom repositories.

Chair: V. Valentini (Italy)
Chair: K. Riklund (Sweden)

10:30	>	Radiomics in radiology, what are the parameters of interest for different imaging modalities? *Speaker: H. Ahlström (Sweden)*	SP-0430
10:45	>	Radiomics in radiotherapy. How is it used to personalise treatment and to predict toxicity and/or tumour control *Speaker: C. Gani (Germany)*	SP-0431
11:00	>	Uncertainties in imaging -how they should be reported and propagated in prediction models using radiomics *Speaker: L.P. Muren (Denmark)*	SP-0432
11:15	>	Imaging biobanks: challenges and opportunities *Speaker: A. Van der Lugt (The Netherlands)*	SP-0433

SYMPOSIUM WITH PROFFERED PAPERS

Novel approaches in prostate tumour control

10:30 - 11:30 | LEHAR 4

This symposium on prostate cancer will shed light on several fundamental characteristics similarly important in other tumour types. The presenters will discuss intra- and inter-patient heterogeneity in terms of clinical response and genetics, define the genetics of aggressive localised sporadic prostate cancer with particular focus on BRCA2 mutated prostate cancers and other genes of DNA damage response and DNA repair pathways in localised and metastatic prostate cancer, outline how the tumour microenvironment impacts on prognosis and prostate cancer genetics, and, finally, discuss the status and the development of novel prognostic and predictive factors for prostate cancer precision medicine.

Chair: N. Cordes (Germany)
Co-chair: G. Goldner (Austria)

10:30 > State of the art in prostate tumour radiobiology
C. Peitzsch (Germany) SP-0434

10:55 > Novel developments in molecular targeting of prostate cancer
R. Bristow (Canada) SP-0435

11:20 > Cytokine-dependent regulation of prostate cancer stem cell maintenance in response to irradiation
C. Peitzsch (Germany), M. Baumbach, M. Cojoc, L. Hein, I. Kurth, M. Baumann, M. Krause, A. Dubrovska OC-0436

PROFFERED PAPERS

New technologies for imaging and therapy

10:30 - 11:30 | STRAUS 2-3
Chair: T. Knöös (Sweden)
Chair: M.d.C. Lopes (Portugal)

10:30 > Scatter imaging: promising modality for image guided ablation radiotherapy for lung cancer patients
J. Chu (USA), G. Redler, G. Cifter, K. Jones, J. Turian OC-0437

10:40 > The impact of a 1.5 T MR-Linac fringe field on neighbouring linear accelerators.
T. Perik (The Netherlands), J. Kaas, F. Wittkamper OC-0438

10:50 > Treating patients with Dynamic Wave Arc: first clinical experience
M. Burghelea (Belgium), D. Verellen, J. Dhont, C. Hung, K. Poels, R. Van den Begin, M. Boussaer, K. Tournel, C. Jaudet, T. Reynders, T. Gevaert, V. Simon, M. De Ridder OC-0439

11:00 > Characterization and clinical evaluation of a novel CT reconstruction to derive electron densities
B. Van der Heyden (The Netherlands), M. Ollers, C. Loon Ong, F. Verhaegen, W. Van Elmpt OC-0440

11:10 > Dose Prescription Function from Tumor Voxel Dose Response for Adaptive Dose Painting by Number
D. Yan (USA), S. Chen, G. Wilson, P. Chen, D. Krauss OC-0441

11:20 > Intensity based synthetic CT generation from standard T2-weighted MR images with three MR scanners
L. Koivula (Finland), L. Wee, J. Dowling, P. Greer, T. Seppälä, J. Korhonen OC-0442

PROFFERED PAPERS

Optimatisation algorithms for treatment planning

10:30 - 11:30 | LEHAR 1-3

Chair: M. Söhn (Germany)

Chair: T. Janssen (The Netherlands)

10:30 > Robust optimization of VMAT in head and neck patients
D. Wagenaar (The Netherlands), R.G.J. Kierkels, J. Free, J.A. Langendijk, E.W. Korevaar OC-0443

10:40 > Pareto-optimal plans as ground truth to validate a commercial knowledge-based DVH-prediction system
E. Cagni (Italy), A. Botti, Y. Wang, M. Iori, S.F. Petit, B.J. Heijmen OC-0444

10:50 > Probabilistic optimization of the dose coverage – applied to treatment planning of cervical cancer
D. Tilly (Sweden), A. Holm, E. Grusell, A. Ahnesjö OC-0445

11:00 > A Fully Automated VMAT Planning System with Site-Configurable Algorithm
M. Chu, R. Maggs, M. Smyth, R. Holmes, D.G. Lewis, J. Staffurth, E. Spezi, A.E. Millin, P.A. Wheeler (UK) OC-0446

11:10 > CyberArc: a 4π-arc optimization algorithm for CyberKnife
V. Kearney (USA), J. Cheung, T. Solberg, C. McGuinness OC-0447

11:20 > Near real-time automated dose restoration in IMPT to compensate for daily tissue density variations
T. Jagt (The Netherlands), S. Breedveld, S. Van de Water, B. Heijmen, M. Hoogeman OC-0448

PROFFERED PAPERS

Planning and quality assurance

10:30 - 11:30 | STRAUS 1

Chair: Y.M. Tsang (UK)

Chair: R. Harris (UK)

10:30 > A novel and objective plan evaluation for limb sarcomas IMRT in the IMRiS phase II trial
R. Simões (UK), H. Yang, R. Patel, F. Le Grange, S. Beare, E. Miles, B. Seddon **OC-0449**

10:40 > Geometric variation of the axillary lymph node region in locoregional breast/chest wall irradiation.
M. Kamphuis (The Netherlands), K.N. Goudschaal, N. Bijker, A. Bel, N. Van Wieringen **OC-0450**

10:50 > Effect of cardiac motion on displacement of LAD artery in gated left breast treatment using MRI
S.Y. Ng (Hong Kong SAR China), W.K. Fung, K.M. Ku, O.L. Wong, G. Chiu **OC-0451**

11:00 > Evaluation of a novel field placement algorithm for tangential internal mammary chain radiotherapy
A. Ranger (UK), A. Dunlop, M. Maclennan, E. Donovan, E. Harris, B. Brigden, C. Knowles, K. Carr, E. Henegan, J. Francis, F. Bartlett, N. Somiah, I. Locke, C. Coles, A. Kirby **OC-0452**

11:10 > Stereotactic radiosurgery for multiple brain metastases: Results of multi-centre benchmark studies
D.J. Eaton (UK), J. Lee **OC-0453**

11:20 > End-to-end QA methodology for proton range verification based on 3D-polymer gel MRI dosimetry
E. Pappas, I. Kantemiris (Greece), T. Boursianis, G. Landry, G. Dedes, T.G. Maris, V. Lahanas, M. Hillbrand, K. Parodi, N. Papanikolaou **OC-0454**

KEYNOTE LECTURE

10:30 - 11:30 | LEHAR 5

Chair: W. Van Elmpt (The Netherlands)

Co-chair: D. Thorwarth (Germany)

10:30 > TBC
Speaker TBC **SP-0455**

POSTER VIEWING 10

RTT

10:30 - 11:30 | POSTER AREA

Chair: M. Coffey (Ireland)

Chair: S.C. Frasca (Italy)

> Volumetric Modulated Arc Therapy for patients with bilateral breast cancer
S. Lutjeboer (The Netherlands), J.W.A. Rook, G. Stiekema, A.P.G. Crijns, N.M. Sijtsema, E. Blokzijl, J. Hietkamp, J.A. Langendijk, A.J. Borden van der, J.H. Maduro PV-0456

> Delay between planning and stereotactic radiotherapy for brain metastases: margins still accurate?
C. Bonnet (France), A. Dr Huchet, E. Blais, J. Dr Benech-Faure, R. Dr Trouette, V. Dr Vendrely PV-0457

> FMECA of Cyberknife process: two years' experience for improvement
S. Cucchiaro (Belgium), D. Dechambre, T. Massoz, N. Gourmet, D. Boga, N. Jansen, P. Coucke, M. Delgaudine PV-0458

> Prostate CBCT dose optimization : from an iterative mAs reduction to a sytematic exposure reduction
E. Jaegle (France), M.E. Alayrach, A. Badey, V. Bodez, C. Khamphan, P. Martinez, R. Garcia PV-0459

> Comparison of 3 Image-guided Adaptive Strategies for Bladder Radiotherapy
V. Kong (Canada), A. Taylor, T. Craig, P. Chung, T. Rosewall PV-0460

> Integrating diagnostic MRI in radical bladder cancer radiotherapy: Challenges in image registration.
C.L. Eccles (UK), H. McNair, D. McQuaid, K. Warren-Oseni, V.N. Hansen, A. Sohaib, M.D. Koh, R. Huddart, S. Hafeez PV-0461

> E-learning in the Radiotherapy Department- Ortello
I.P. De Jong (The Netherlands), P. De Boer, D. Ages, F. Telgenhof, D. Hasken PV-0462

AWARD LECTURE

Donal Hollywood Award

11:40 - 11:50 | AUDITORIUM

Chair: R. Coppes (The Netherlands)

11:40 > *In vitro* prediction of DNA repair defects reveals association with poor clinical outcome in HNSCC
P. Essers (The Netherlands) OC-0463

PROFFERED PAPERS

Highlights of proffered papers
11:50 - 12:30 | AUDITORIUM
Chair: M. Krause (Germany)
Chair: G. Meijer (The Netherlands)
Chair: C. Kirisits (Austria)
Chair: M. Mast (The Netherlands)

11:50 > Validation of a fully automatic real-time liver motion monitoring method on a conventional linac
I. Bertholet (Denmark), R. Hansen, E.S. Worm, J. Toftegaard, H. Wan, P.J. Parikh, M. Høyer, P.R. Poulsen **OC-0464**

12:00 > Organ preservation for rectal cancer: the GRECCAR 2 randomized phase III trial
V. Vendrely (France), P. Rouanet, J.J. Tuech, H. Mosnier, B. Lelong, M. Rivoire, J.L. Faucheron, M. Jafari, G. Portier, B. Meunier, B. Sastre, M. Prudhomme, F. Marchal, M. Pocard, D. Pezet, A. Rullier, J. Asselineau, A. Doussau, E. Rullier **OC-0465**

12:10 > Brachytherapy for conservative treatment of penile carcinoma: prognostic factors and outcome
A. Escande (France), C. Haie-Meder, R. Mazeron, P. Castelnau-Marchand, P. Maroun, A. Cavalcanti, F. Marsolat, K. Doyeux, R. De Crevoisier, F. Martinetti, I. Dumas, E. Deutsch, C. Chargary **OC-0466**

12:20 > Investigating reporting-and-learning systems of Irish radiation therapy: Can standards be improved?
K. Dowling (Ireland), C. Poole, L. Mullaney, S. Barrett **OC-0467**

AWARD LECTURE

Breur Award Lecture
12:30 - 13:00 | AUDITORIUM

12:30 > Chair and introduction
Chair: Y. Lievens (Belgium)

12:35 > The 5 R(elevant) principles of radiotherapy in multimodal cancer treatment
C. Rödel (Germany) **SP-0468**

SYMPOSIUM

Lunch symposium - New journals phiRO, ctRO, tipsRO - Meet the editors

13:00 - 14:45 | LEHAR 5

Chair: K. Røe Redalen (Norway)
Chair: P. Franco (Italy)

13:00 > How to write a good paper - Editor's view
Speaker: L.P. Muren (Denmark)
13:10 > How to do a good paper review - Editor's view
Speaker: D. Zips (Germany)
13:20 > How to make a paper high impact - Editor's view
Speaker: S. Faithfull (UK)
13:30 > The scholarly publishing cycle and open access publishing
Speaker: S. Jenkins (The Netherlands)
13:50 > Questions from the audience
14:15 > Meet the editors (individual slots with sign-up)

SYMPOSIUM

Non-rectal GI tumours: key open questions to be answered from (and for) the radiation oncologist!

14:45 - 16:15 | AUDITORIUM

This session will focus on key questions in oesophageal, pancreatic and anal cancer. M. Hulshof will cover topics such as optimal radiotherapy dose and schedule in different treatment settings. Following, the lecture will expand on non-conventional tumour volume margin prescription and the importance of fiducials for accurate targeting. E. Fokas will discuss the rationale for radiotherapy in the context of R1-resection and local failure in pancreatic cancer, its controversial role, the neoadjuvant concept and what will take to "salvage" radiotherapy in the disease. Finally, R. Muirhead will give an overview on the current treatment options in anal cancer, the advances in radiotherapy technique and imaging, toxicity and future dose escalation/de-escalation trials.

Chair: E. Fokas (Germany)
Co-chair: J. Lövey (Hungary)

14:45 > Radio(chemo)therapy in oesophageal cancer: can we do better?
Speaker: M. Hulshof (The Netherlands) SP-0469
15:15 > Does radiotherapy still have a role in the management of pancreatic cancer?
Speaker: E. Fokas (Germany) SP-0470

15:45 > Standard treatment in anal cancer: where do we stand and where should we go?
Speaker: R. Muirhead (UK) SP-0471

JOINT SYMPOSIUM

ESTRO-RANZCR: Big data to better radiotherapy

14:45 - 16:15 | STOLZ 1-2

This session covers the topic of Big Data to Better Radiotherapy from the standpoints of data collection and interpretation, types of datasets (genetic, dosimetric, clinical), application of big datasets in the settings of planning and radiotherapy delivery, and the potential clinical gains in cancer patient care arising from these.

Highlights of the international expert panel talks include:
- How big data compliments/differs from traditional clinical trial research
- The challenges and processed in big data collection
- New opportunities in the field of radiogenomics
- Big data in improving plan quality and automation
- Translating what we learn from big data to the clinical setting and individual patient care

Chair: J. Alsner (Denmark)
Chair: S. Turner (Australia)

14:45 > The pros, cons, process and challenges for achieving better radiotherapy through data -an introduction
Speaker: L.C. Holloway (Australia) SP-0472
15:07 > From genomics and radiogenomics data to a better RT
Speaker: A. Vega (Spain) SP-0473
15:29 > From radiotherapy and dosimetry data to better plans
Speaker: M. Hoogeman (The Netherlands) SP-0474
15:51 > Moving big data into clinical practice – a positive outlook
Speaker: S. Vinod (Australia) SP-0475

SYMPOSIUM

Locally advanced breast cancer

14:45 - 16:15 | SCHUBERT

Patients with breast cancer showing unfavourable prognostic factors, either related to tumour extent or molecular subtype, use to have a multimodality

combined treatment approach although several questions still remain to be solved. Individualised medicine, including biomarkers and gene expression profiles could help to decide whether radiation therapy is to be used and when. In fact, preoperative radiation therapy is becoming favoured in some clinical situations, especially since it allows a better understanding of its effects, such as exploiting possible immunological effects of radiation. Finally the role of combining systemic treatments and radiation therapy and its possible interactions will be addressed.

Chair: P.C. Lara Jimenez (Spain)
Co-chair: D. Kauer-Dorner (Austria)

14:45 > Personalised local and locoregional radiotherapy in breast cancer
Speaker: T. Tramm (Denmark) SP-0476

15:15 > Where should we place radiotherapy: before or after surgery?
Speaker: L. Boersma (The Netherlands) SP-0477

15:45 > Radiation therapy after complete response after primary systemic therapy. Is it needed?
Speaker: P. Poortmans (France) SP-0478

SYMPOSIUM WITH PROFFERED PAPERS

Novel approaches in thoracic tumour treatment

14:45 - 16:15 | LEHAR 4

The session will give an update on current research on novel targeted drug approaches to lung cancer treatment alone and in combination with radiotherapy. The focus will be on prognostic and predictive factors, screening methods, Notch signaling and the secretome.

Chair: P. Huber (Germany)
Co-chair: W. Raunik (Austria)

14:45 > Primary human Lung (stem) cell models to study adverse effects of cancer treatments
M. Vooijs (The Netherlands) SP-0479

15:10 > Secretome as novel target for lung cancer
M. Pruschy (Switzerland) SP-0480

15:35 > Effects of nitroglycerin on perfusion and hypoxia in non-small cell lung cancer lesions.
B. Reymen (The Netherlands), A.J.G. Even, C.M.L. Zegers, W. Van Elmpt, M. Das, J. Wldberger, F. Mottaghy, E. Vegt, D. De Ruysscher, P. Lambin OC-0481

15:45 > Interferon stimulated genes: a common pathway in tamoxifen- and radioresistance in breast cancer

A. Post (The Netherlands), M. Smid, A. Nagelkerke, J. Martens, J. Bussink, C. Sweep, P. Span

OC-0482

DEBATE

Forum debate on how to bring about the ESTRO mission from a physicist's perspective

14:45 - 16:15 | STRAUS 2-3

ESTRO has invited some key opinion leaders in the physics community, for a public debate. The idea is to focus on the future of Medical Physics in Europe and how Physicists can contribute to the ESTRO vision (ie: "Every cancer patient in Europe will have access to state of the art radiation therapy, as part of a multi-disciplinary approach where treatment is individualised for the specific patient's cancer, taking account of the patient's personal circumstances").

The format will be a challenge: ESTRO will invest in one (and only one) priority topic to realise its vision by providing a hypothetical start-up-grant of € 1M. Six opinion leaders will defend their project and the audience will represent the commission that will select the proposal receiving the grant.

Chair: D. Verellen (Belgium)
Chair: G. Meijer (The Netherlands)

14:45 > QA management of dosimetry and safety
Speaker: C. Hurkmans (The Netherlands)
14:55 > Improving and standardisation of education and training in Medical Physics in Europe, professional recognition, mobility
Speaker: N. Jornet (Spain)
15:05 > Research and development: image registration, dose accumulation, new technology and real-time ART
Speaker: U. Oelfke (UK)
15:15 > Data mining and decision making tools
Speaker: A. Dekker (The Netherlands)
15:25 > Biology, imaging and modeling
Speaker: M. Alber (Germany)
15:35 > Affordable proton therapy for every patient
Speaker: T. Bortfeld (USA)
15:45 > Discussion
16:00 > Rebuttal: QA management of dosimetry and safety
Speaker: C. Hurkmans (The Netherlands)
16:02 > Rebuttal: Improving and standardisation of education and training in Medical Physics in Europe, professional recognition, mobility

Speaker: N. Jornet (Spain)

16:04 > Rebuttal: Research and development: image registration, dose accumulation, new technology and real-time ART
Speaker: U. Oelfke (UK)

16:06 > Rebuttal: Data mining and decision making tools
Speaker: A. Dekker (The Netherlands)

16:08 > Rebuttal: Radiobiology and modeling
Speaker: M. Alber (Denmark)

16:10 > Rebuttal: Affordable proton therapy for every patient
Speaker: T. Bortfeld (USA)

PROFFERED PAPERS

Inter-fraction motion management

14:45 - 16:15 | LEHAR 1-3

Chair: A. Vestergaard (Denmark)
Chair: S. Nill (UK)

14:45 > Clinical application of an adaptive radiotherapy approach to baseline shifts in lung cancer
H. De Boer (The Netherlands), C.A. Van Es, J.G. Bijzet-Marsman, M.E. Kamphorst, M.E. Bosman, G.J. Meijer OC-0483

14:55 > Variability of breathing-induced tumour motion: 4DCT – a source of misguiding information?
J. Dhont (Belgium), D. Verellen, M. Burghelea, R. Van Den Begin, K. Tournel, T. Gevaert, B. Engels, C. Collen, C. Jaudet, M. Boussaer, T. Reynders, G. Storme, M. De Ridder OC-0484

15:05 > How many plans are needed for an optimal plan library in ART for locally advanced cervical cancer?
E. Novakova, S.T. Heijkoop (The Netherlands), S. Quint, A.G. Zolnay, J.W.M. Mens, J. Godart, B.J.M. Heijmen, M.S. Hoogeman OC-0485

15:15 > Multi-criterial patient positioning based on dose recalculation on scatter-corrected CBCT images
J. Hofmaier (Germany), J. Haehnle, C. Kurz, G. Landry, C. Maihöfer, P. Süss, K. Teichert, N. Traulsen, C. Brachmann, F. Weiler, C. Thieke, K.H. Küfer, C. Belka, K. Parodi, F. Kamp OC-0486

15:25 > Pre-treatment characteristics can predict anatomical changes occurring during RT in lung cancer.
L. Hoffmann (Denmark), A. Khalil, M. Knap, M. Alber, D. Møller OC-0487

15:35 > Thoracic tumor treatment course assessment based on 4D dose accumulation for scanned proton therapy
A. Meijers (The Netherlands), C. Richter, F. Dessy, J. Widder, E. Korevaar, A. Jakobi, C. Ribeiro, J. Langendijk, A. Knopf OC-0488

15:45 > Variation in bladder volume and associated spatial dose metrics in prostate and pelvic radiotherapy
O. Casares-Magaz (Denmark), V. Moiseenko, A. Hopper, N.J. Pettersson, M. Thor, R. Knopp, J.O. Deasy, L.P. Muren, J. Einck OC-0489

15:55 > A robust and fast planning approach for adaptive MR-guided treatment of pancreatic cancer
M.A. Palacios (The Netherlands), O. Bohoudi, A. Bruynzeel, B. Slotman, S. Senan, F. Lagerwaard OC-0490

16:05 > Quality assurance of a novel table mounted imaging device integrated in a patient positioning system
A. Utz (Austria), A. Ableitinger, A. Zechner, M. Mumot, M. Teichmeister, P. Steininger, H. Deutschmann, M. Stock OC-0491

SYMPOSIUM

Focus on prostate cancer: what is the best of radiotherapy we need to treat our patients with

14:45 - 16:15 | STRAUS 1

This symposia will be cover the biology of prostate cancer and its pertinence for the alpha/beta ratio, the impact of the alpha/beta ratio for hypofractionation rationale and to assess the potential of dose escalation that incorporates hypofractionation and biology and what is needed to achieve it. It will be further on evaluate the possible benefits and pitfalls of rectal spacers to minimise the dose to the rectum in radiotherapy for prostate cancer.

The other part will give an overview of the MRI-guided radiation therapy system. It will be discuss the clinical implementation and workflow of stereotactic MR-guided adaptive radiation therapy (SMART) for prostate cancer. Also will discuss details on daily plan adaptation and gated radiation delivery under real-time MRI-guidance.

Chair: A. Osztavics (Austria)
Co-chair: R. Harasleben (Austria)

14:45 > What are the best ingredients to deliver the optimal radiotherapy for prostate cancer
Speaker: V. Khoo (UK) SP-0492

15:15 > The role of spacers in the era of highly conformal, hypo-fractionated, image guided, adaptive radiotherapy of the prostate
Speaker: P. Scherer (Austria) SP-0493

15:45 > Using a MRI-guided radiation therapy system for prostate cancer patients
Speaker: O. Bohoudi (The Netherlands) SP-0494

SYMPOSIUM

Young ESTRO meets ESTRO School

14:45 - 16:15 | LEHAR 5

In this symposium two issues will be developed: the potential of e-learning in the contouring, and the role of radiotherapy in some challenging clinical situations. Since last years, e-learning is a very important part of the portfolio of the ESTRO educational activities. One of them is the FALCON (Fellowship in Anatomic delineation and CONtouring) programme, started in 2010, and aiming at improving the contouring skills of the participants. During the session, its importance and its educational potential will be presented and discussed.

In the clinical session, 3 challenging clinical cases will be presented: a case of N2 lung cancer, a case of cervical cancer and a case of rectal cancer. Initially, medical students will outline, with a multidisciplinary and interdisciplinary approach, available evidences for radiotherapy and controversies in terms of techniques and guidelines. Then, internationally recognised experts will moderate the discussion and they will present the treatment option chosen at their clinic.

Chair: B. De Bari (France)
Co-chair: Y. Eller (Switzerland)

14:45	>	Introduction of FALCON (Fellowship in Anatomic delineation and CONtouring) online contouring system as a tool for e-learning *Speaker: J.G. Eriksen (Denmark)*	SP-0495
14:55	>	Role of radiotherapy in the treatment of stage IIIA/pN2 non-small cell lung cancer *Speaker: L. Käsmann (Germany)*	SP-0496
15:10	>	Role of radiotherapy in the treatment of stage IIIA/pN2 non-small cell lung cancer *Speaker: B. Jeremic (Serbia)*	SP-0497
15:20	>	Cervical cancer: literature overview and discussion of clinical case *Speaker: L. Bolm (Germany)*	SP-0498
15:35	>	Cervical cancer: literature overview and discussion of clinical case *Speaker: L. Motisi (Germany)*	SP-0499
15:45	>	Rectal cancer: literature overview and discussion of clinical case *Speaker: I.S. Barua (Norway)*	SP-0500
16:00	>	Rectal cancer: literature overview *Speaker: K. Haustermans (Belgium)*	SP-0501

POSTER VIEWING 11

Head and neck and CNS

14:45 - 16:15 | POSTER AREA

Chair: N. Burnet (UK)

Chair: D. Habermehl (Germany)

> Post-operative radiation therapy in atypical meningiomas: analysis of prognostic factors
S. Shakir (Canada), L. Souhami, K. Petrecca, J. Mansure, V. Panet-Raymond, G. Shenouda, K. Singh, A. Alodaini, B. Abdulkarim, M. Guiot **PV-0502**

> Abstract withdrawn **PV-0503**

> Observed survival in 3270 patients treated with Whole Brain Radiotherapy compared to the QUARTZ data
P. Jeene (The Netherlands), R. Kwakman, J. Van Nes, K. De Vries, G. Wester, E. Dieleman, T. Rozema, J. Zindler, J. Verhoeff, L. Stalpers **PV-0504**

> Association between the diagnosis-to-treatment interval and overall survival in Taiwan OSCC
C.T. Liao (Taiwan), Y.W. Wen, S.H. Ng, L.Y. Lee, C.Y. Lin, H.M. Wang, C.H. Lin, T.C. Yen **PV-0505**

> Comparison of Clinical Behavior of Viral Related Oropharyngeal and Nasopharyngeal Carcinoma
S.H. Huang (Canada), J. Waldron, J. Su, S. Bratman, J. Kim, A. Bayley, J. Ringash, M. Giuliani, A. Hope, J. Cho, A. Hansen, R. Jang, J. De Almeida, B. Perez-Ordonez, I. Weinreb, L. Tong, W. Xu, B. O'Sullivan **PV-0506**

> Abstract withdrawn **PV-0507**

> Prognostic significance of PD-L1 expression in patients with head and neck squamous cell carcinoma
C. Peng (China), X. Gu, X.S. Gao, X. Li, S. Qin, M. Ma, M. Cui, M. Xie, Y. Bai **PV-0508**

> Failure type specific prognostic model for selection of HNSCC patients for experimental treatments
K. Håkansson (Denmark), J.H. Rasmussen, G.B. Rasmussen, J. Friborg, T.A. Gerds, S.M. Bentzen, L. Specht, I.R. Vogelius **PV-0509**

> FMISO-PET/CT and functional MRI parameters as biomarkers during chemoradiation of HNSCC
H. Bunea (Germany), A. Bunea, N. Wiedenmann, C. Stoykow, M. Mix, H. Rischke, M. Langer, P. Meyer, M. Bock, A. Grosu **PV-0510**

> Fitting NTCP models to patient reported xerostomia and dysphagia after H&N radiotherapy to 60Gy
P. Mavroidis (USA), A. Price, D. Fried, M. Kostich, R. Amdur, W. Mendenhall, C. Lu, S. Das, L.B. Marks, B. Chera **PV-0511**

PROFFERED PAPERS

CNS

16:45 - 17:45 | AUDITORIUM

Chair: S. Rieken (Germany)

Chair: T. Boterberg (Belgium)

16:45 > MR imaging predictor of survival in pediatric ependymoma patients after radiotherapy
F. Tensaouti (France), A.D. Ducassou, L.C. Chaltiel, A.S. Sevely, S.B. Bolle, X.M. Muracciole, B.C.D. Coche-Dequant, C.A. Alapetite, S.S. Supiot, A.H. Huchet, V.B. Bernier, L.C. Claude, A.I.B.S. Bertozzi-Salamon, P.P. Péran, P.P. Payoux, A.L. Laprie OC-0512

16:55 > Radiation necrosis following stereotactic RT and immunotherapy for melanoma brain metastases
O. Kaidar-Person (USA), T. Zagar, A. Deal, S. Moschos, M. Ewend, D. Sasaki-Adams, C. Lee, F. Collichio, D. Fried, L. Marks, B. Chera OC-0513

17:05 > Radiation necrosis after proton beam therapy - when and where does it happen?
S. Harrabi (Germany), C. Gudden, S. Adeberg, N. Bougatf, T. Haberer, S. Rieken, J. Debus, K. Herfarth OC-0514

17:15 > Radiation necrosis in children with brain tumours treated with pencil beam scanning proton therapy
B. Bojaxhiu (Switzerland), F. Ahlhelm, M. Walser, L. Placidi, U. Kliebsch, L. Mikroutsikos, P. Morach, A. Bolsi, T. Lomax, R. Schneider, D.C. Weber OC-0515

17:25 > Brainstem linear energy transfer in intensity-modulated proton therapy of paediatric brain tumours
L.F. Fjaera (Norway), Z. Li, K.S. Ytre-Hauge, L.P. Muren, D. Indelicato, Y. Lassen-Ramshad, G.M. Engeseth, M. Brydøy, S. Flampouri, O. Dahl, C.H. Stokkevåg OC-0516

17:35 > Investigation of the RBE variation of protons in the rat spinal cord within a spread-out Bragg peak
M. Saager (Germany), P. Peschke, S. Brons, M. Scholz, P.E. Huber, J. Debus, C.P. Karger OC-0517

SYMPOSIUM

Patient Reported Outcomes (PROs) in radiotherapy

16:45 - 17:45 | STOLZ 1-2

Patient Reported Outcomes (PROs) describe any outcome directly reported by the patient and is a subjective evaluation about disease and its treatment. With the development of well validated instruments with robust psychometric qualities these tools provide a useful way of assessing treatment both in routine practice and in clinical trials. This session critically reviews the differences between reported morbidity and associations of clinical outcomes such as survival. Furthermore, how these tools shape evaluation of routine radiotherapy practice, clinical trials. PROs are therefore critical to understanding the consequences of radiotherapy from a 'whole-person' perspective and the impact of treatment on people's lives.

Chair: S. Faithfull (UK)
Co-chair: M. Dolezel (Czech Republic)

16:45 > Differences between PRO and clinician reported morbidity and associations to clinical outcome
Speaker: K. Kirchheiner (Austria) SP-0518

17:05 > Collecting PROs in clinical practice to assess radiotherapy toxicity and develop normal tissue complication probability models
Speaker: A. Gilbert (UK) SP-0519

17:25 > PROs instruments used in clinical trials
Speaker: S. Faithfull (UK) SP-0520

PROFFERED PAPERS

Oligometastatic disease

16:45 - 17:45 | SCHUBERT
Chair: P. Ost (Belgium)
Chair: B.A. Jereczek-Fossa (Italy)

16:45 > The role of SBRT in oligorecurrent and oligoprogressive prostate cancer: a multi-institutional study
L. Triggiani (Italy), S. Magrini, A. Bruni, F. Alongi, A. Magli, A. Bonetta, L. Livi, R. Santoni, P. Borghetti, M. Maddalo, M.D. Rolando, G. Ingrosso, N. Pasinetti, M. Buglione OC-0521

16:55 > Extracranial stereotactic Radiotherapy for lymph nodal recurrences: a dose escalation trial
F. Deodato (Italy), G. Macchia, M. Ferro, M. Ferro, G. Torre, V. Picardi, M. Nuzzo, S. Cilla, A. Ianiro, G. Tolento, S. Cammelli, F. Romani,

A. Arcelli, R. Frakulli, L. Giaccherini, G. Siepe, G.P. frezza, A. Farioli, S. Mignona, V. Valentini, A.G. Morganti OC-0522

17:05 > SBRT for oligo-metastatic liver disease–effect of chemotherapy and histology on local tumor control
R. Klement, M. Guckenberger, H. Alheid, M. Allgaeuer, G. Becker, O. Blanck, J. Boda-Hegemann, T. Brunner, M. Duma, S. Gerum, D. Habermehl, G. Hildebrandt, V. Lewitzki, C. Ostheimer, A. Papachristofilou, C. Petersen, T. Schneider, R. Semrau, S. Wachter, N. Andratschke (Switzerland) OC-0523

17:15 > Phase II trial on SBRT for Liver Metastases: Long-term outcomes and prognostic factors of survival.
T. Comito (Italy), C. Franzese, E. Clerici, A. Tozzi, C. Iftode, P. Navarria, G.R. D'Agostino, D. Franceschini, F. De Rose, A. Ascolese, L. Di Brina, S. Tomatis, M. Scorsetti OC-0524

17:25 > Factors affecting local control for pulmonary oligometastasis treated with SBRT
A. Sharma (The Netherlands), M. Duijm, E. Oomen-de Hoop, J. Aerts, C. Verhoef, M. Hoogeman, J. Nuyttens OC-0525

17:35 > Quality of life after SBRT in bone metastases: analysis from the prospective PRESENT cohort
G. Fanetti (Italy), A.S. Gerlich, E. Seravalli, H.M. Verkooijen, M. Van Vulpen, R. Orecchia, B.A. Jereczek-Fossa, J. Van der Velden OC-0526

SYMPOSIUM WITH PROFFERED PAPERS

Novel approaches in colorectal tumour control

16:45 - 17:45 | LEHAR 4

Chair: H.P. Rodemann (Germany)
Co-chair: G. Sersa (Slovenia)

16:45 > State of the art in colorectal cancer radiobiology
J. Bussink (The Netherlands) SP-0527

17:10 > Immunobiology of gastro-intestinal tumours
P. Huber (Germany) SP-0528

17:35 > Circulating exosomal miRNA related to chemoradiotherapy outcome in locally advanced rectal cancer
S. Meltzer (Norway) OC-0529

PROFFERED PAPERS

Dosimetry and detector development

16:45 - 17:45 | STRAUS 2-3

Chair: E. Gershkevitsh (Estonia)

Chair: R. Garcia (France)

16:45 > Equivalent uniform square field sizes of machine specific reference fields in FFF beams
W. Lechner (Austria) OC-0530

16:55 > The influence of detector resolution on pre-treatment quality assurance in SBRT
A. Bruschi (Italy), S. Russo, M. Esposito, S. Pini, A. Ghirelli, G. Zatelli, P. Bastiani OC-0531

17:05 > QA of stereotactic radiotherapy combined with electromagnetic MLC tracking by a silicon detector
M. Petasecca, M.K. Newall, M. Duncan (Australia), V. Caillet, B. James, J.T. Booth, M.L.F. Lerch, V. Perevertaylo, P. Keall, A.B. Rosenfeld OC-0532

17:15 > ADAM: a breathing phantom for testing radiotherapy treatment on moving lesions
S. Pallotta (Italy), L. Foggi, S. Calusi, L. Marrazzo, C. Talamonti, L. Livi, G. Simontacchi, R. Lisci OC-0533

17:25 > Establishment of patient-specific quality assurance procedure for Dynamic WaveArc delivery technique
H. Hirashima (Japan), M. Nakamura, Y. Miyabe, N. Mukumoto, M. Uto, K. Nakamura, T. Mizowaki, M. Hiraoka OC-0534

17:35 > Multicenter validation of ion chambers in reference dosimetry of two IORT-dedicated electron linacs
P. Scalchi (Italy), G. Felici, A. Ciccotelli, A. Petrucci, V. Piazzi, N. Romeo, A. Pentiricci, F. Cavagnetto, S. Andreoli, F. Cattani, S. Fabbri, P. Tabarelli de Fatis, R. Romagnoli, A. Soriani, B. Augelli, M. Paolucci, P. D'Avenia, M. Bertolini, R. Massafra, E. Moretti, S. De Stefano, L. Grasso, C. Baiocchi, P. Francescon OC-0535

PROFFERED PAPERS

Novel methods for auditing

16:45 - 17:45 | LEHAR 1-3

Chair: C. Garibaldi (The Netherlands)

Chair: J. Izewska (Austria)

16:45 > Causes of irradiation failures of IROC Houston's IMRT credentialing phantom
S. Kry (USA), J. Kerns, M. Carson, A. Molineu, P. Taylor, D. Followill OC-0536

16:55 > A remote EPID-based dosimetric auditing method for VMAT delivery using a digital phantom concept
P. Greer (Australia), K. Legge, N. Miri, P. Vial, T. Fuangrod, J. Lehmann OC-0537

17:05 > A virtual dosimetry audit – towards transferability between global QA groups in clinical trials
M. Hussein (UK), D. Eaton, P. Greer, A. Haworth, C. Hurkmans, S. Ishikura, S. Kry, J. Lehmann, J. Lye, A. Monti, M. Nakamura, C. Clark OC-0538

17:15 > A multicentre QA study on 4DCT and IMRT/VMAT techniques for lung SBRT using a respiratory phantom
M. Lambrecht (The Netherlands), J.J. Sonke, M. Verheij, C.W. Hurkmans OC-0539

17:25 > A national cranial stereotactic radiosurgery end-to-end dosimetry audit
A. Dimitriadis (UK), R.A.S. Thomas, A.L. Palmer, D. Eaton, J. Lee, R. Patel, I. Silvestre Patallo, A. Nisbet, C.H. Clark OC-0540

17:35 > Automated treatment planning for prospective QA in the TRENDY randomized trial on liver-SBRT for HCC
S.J.M. Habraken (The Netherlands), A.W. Sharfo, J. Buijsen, W.F.A.R. Verbakel, C.J.A. Haasbeek, M.C. Ollers, G.H. Westerveld, N. Van Wieringen, O. Reerink, E. Seravalli, P.M. Braam, M. Wendling, T. Lacornerie, X. Mirabel, R. Weytjens, L. Depuydt, S. Lang, O. Riesterer, K. Haustermans, T. Depuydt, B.J.M. Heijmen, A. Méndez Romero OC-0541

PROFFERED PAPERS

Patient safety and treatment outcome

16:45 - 17:45 | STRAUS 1

Chair: L. Fog (Denmark)

Chair: A. O'Donovan (Ireland)

16:45 > Dysphagia, Odynophagia and Globulus in Patients Receiving RT for Spinal Cord Compression
V. Gram (Denmark), M. Hemer, A. Appelt, H. Pappot, P. Sjøgren, L.S. Fog OC-0542

16:55 > Acute toxicity with helical IGIMRT for head and neck cancer: Unilateral vs bilateral nodal irradiation
A.M. Bates (UK), D.J. Noble, O. Young, E. Wong, J. Gemmill, R.J. Benson, S.J. Jefferies, G.C. Barnett, N.G. Burnet OC-0543

17:05 > Stereotactic radiotherapy in elderly patients: age, survival and performance status
J.L. Monroy Anton (Spain), L. Tejedor Pedrosa, M. Soler Tortosa, M. López Muñoz, A. Soler Rodríguez, A. Navarro Bergadá, M. Estornell Gualde OC-0544

17:15 > Head and neck paragangliomas: preliminary results of the Protontherapy Centre of Trento (Italy)

I. Giacomelli (Italy), D. Scartoni, M. Cianchetti, F. Dionisi, D. Amelio, S. Lemoine, F. Fellin, R. Righetto, M. Amichetti OC-0545

17:25 > Video Launching during Irradiation – an alternative to anesthesia in pediatric patients?
C. Palhetinha Aguas (Belgium), P. Humblet, L. Renard, A. Vaandering, V. Roosen, M. Coevoet OC-0546

17:35 > Acute and late morbidity in a Phase II trial of adaptive radiotherapy for urinary bladder cancer
A. Vestergaard (Denmark), L. Muren, H. Lindberg, L. Dysager, K. Jakobsen, H. Jensen, J. Petersen, U. Elstrøm, A. Als, M. Høyer OC-0547

PLENARY SESSION

Report back and follow up on Agora meeting

16:45 - 17:00 | LEHAR 5

16:45 > Report back and follow up on Agora meeting
Speaker: G. Borst (The Netherlands)

NETWORKING SESSION

Interactive quiz

17:00 - 17:15 | LEHAR 5

NETWORKING SESSION

Young networking

17:15 - 18:00 | LEHAR 5

POSTER VIEWING 12

Gynaecology and prostate

16:45 - 17:45 | POSTER AREA

Chair: F. Guedea Edo (Spain)

Chair: D. Gabrys (Poland)

> The role of adjuvant therapy in stage IA serous and clear cell uterine cancer: a pooled analysis
M.X. Qu (Canada), V. Velker, E. Leung, J. Kwon, M.A. Elshaikh, I. Kong, N. Logie, L.C. Mendez, L. Van der Putten, E. Donovan, A.R. Munkarah, E.M. Wiebe, A.V. Louie, D.P. D'Souza PV-0548

> National Cancer Data Base Analysis of SBRT, IMRT, and Brachytherapy

Boost for Cervical Cancer
M. Ludwig (USA), M. Bonnen, J. Shiao, B. O'Donnell, T. Pezzi, N. Waheed, S. Sharma PV-0549

> Combined high dose radiation and tyrosine kinase inhibitors in renal cell carcinoma: a phase I trial
K. De Wolf, S. Rottey, K. Vermaelen, K. Decaestecker, N. Sundahl (Belgium), G. De Meerleer, N. Lumen, V. Fonteyne, D. De Maeseneer, P. Ost PV-0550

> PSMA PET/CT vs MRI for GTV delineation in prostate cancer: a comparison with histology
C. Zamboglou (Germany), V. Drendel, C.A. Jilg, H.C. Rischke, B. Teresa I., T. Krauss, M. Werner, M. Bock, M. Langer, P.T. Meyer, A.L. Grosu PV-0551

> Urethra-sparing SBRT for prostate cancer: acute toxicity results from a randomized phase II trial
T. Zilli (Switzerland), S. Jorcano, S. Bral, C. Rubio, A. Bruynzeel, A. Oliveira, U. Abacioglu, H. Minn, Z. Symon, R. Miralbell PV-0552

> Prognostic significance of Testosteron Level in prostate carcinoma patients treated with TAB and RT
G. Ozyigit (Turkey), F. Akyol PV-0553

> Abstract withdrawn PV-0554

Tuesday 9 May 2017

TEACHING LECTURE

New radiotherapeutic horizons in soft tissue sarcoma treatment

08:30 - 09:10 | STOLZ 1-2

Chair: L. Livi (Italy)

08:30 > New radiotherapeutic horizons in soft tissue sarcoma treatment
Speaker: R. Haas (The Netherlands) SP-0555

TEACHING LECTURE

Clinical evidence for hypofractionation in prostate cancer what is the optimum?

08:30 - 09:10 | SCHUBERT

Chair: M. Van Vulpen (The Netherlands)

08:30 > Clinical evidence for hypofractionation in prostate cancer what is the optimum?
Speaker: P. Blanchard (France) SP-0556

TEACHING LECTURE

Extracellular vesicles in radiation oncology

08:30 - 09:10 | LEHAR 4

Chair: M. Vooijs (The Netherlands)

08:30 > Extracellular vesicles in radiation oncology
Speaker: K. Røe Redalen (Norway) SP-0557

TEACHING LECTURE

Update on molecular radiotherapy

08:30 - 09:10 | STRAUS 2-3

Chair: L. Strigari (Italy)

08:30 > Update on molecular radiotherapy
Speaker: G. Flux (UK) SP-0558

TEACHING LECTURE

Basics, implementations, applications and limitations of Monte Carlo dose calculation algorithms

08:30 - 09:10 | LEHAR 1-3

Chair: B. McClean (Ireland)

08:30 > Basics, implementations, applications and limitations of Monte Carlo dose calculation algorithms
Speaker: F. Verhaegen (The Netherlands) SP-0559

TEACHING LECTURE

RTTs roles and responsibilities to support future practice

08:30 - 09:10 | STRAUS 1

Chair: P. Scherer (Austria)

08:30 > RTTs roles and responsibilities to support future practice
Speaker: M. Coffey (Ireland) SP-0560

SYMPOSIUM

Radiotherapy in the elderly

09:15 - 10:30 | STOLZ 1-2

Chair: J. Jaal (Estonia)

Co-chair: Z. Takacsi-Nagy (Hungary)

09:15 > Radiotherapy in elderly rectal cancer patients
Speaker: R. Nout (The Netherlands) SP-0561

09:33 > Breast cancer
Speaker: I. Kunkler (UK) SP-0562

09:51 > Radiotherapy in older patients with GBM
Speaker: G. Minniti (Italy) SP-0563

10:09 > Lung
Speaker: J. Van Loon (The Netherlands) SP-0564

SYMPOSIUM WITH PROFFERED PAPERS

Selection of patients and radiotherapy technique for APBI in the light of new phase III trial data

09:15 - 10:30 | SCHUBERT

Chair: J. Guinot (Spain)
Co-chair: A. Resch (Austria)

09:15 > Target coverage and dose to organs at risk using different techniques of APBI (EBI, IORT, BT)
L. Marrazzo (Italy) SP-0565

09:33 > External beam partial breast irradiation: changing patient selection based on current evidence
I. Meattini (Italy) SP-0566

09:51 > Partial breast irradiation with brachytherapy: changing patient selection based on current evidence
C. Polgár (Hungary) SP-0567

10:09 > Accelerated PBI VS standard radiotherapy (IRMA trial): interim cosmetic and toxicity results
B. Meduri (Italy), A. Baldissera, M. Galeandro, E. Donini, G. Tolento, P. Giacobazzi, T. Calmieri, P. Vasilyeva, A.G. Morganti, S. Parisi, S. Kaleci, F. Lohr, R. D'amico, P.M. Poortmans, F. Bertoni, G.P. Frezza OC-0568

10:19 > Comparison of clinical outcome of APBI by interstitial brachytherapy as per ESTRO and ASTRO guidelines
T. Telkhade (India), T. Wadasadawala, R. Upereti, R. Sarin, R. Jalali, R. Badwe, V. Parmar, S. Gupta, A. Budrukkar OC-0569

SYMPOSIUM WITH PROFFERED PAPERS

Novel approaches in poor tumour control sites

09:15 - 10:30 | LEHAR 4

Despite the overall progress in cancer detection and treatment, some cancers remain difficult to detect early and poorly responsive to treatment, resulting in a dismal outcome for the patients. Speakers in this symposium will discuss novel approaches for the diagnosis and treatment of pancreatic and brain tumours, which take advantage of innovative molecularly-based techniques. Data illustrating the use of circulating tumour DNA for diagnostic and prognostic purposes will also be presented using as example HPV ctDNA detection in patients treated for anal canal squamous cell carcinoma.

Chair: S. Demaria (USA)
Co-chair: C. Doeller (Austria)

09:15 > Radiopharmaceuticals in pancreatic cancer: imaging and therapy
B. Cornelissen (UK) SP-0570

09:36 > State of the art precision medicine for benign and malignant brain tumours
G. Zadeh (Canada) SP-0571

09:57 > Circulating tumour DNA, a new tool for the early detection of poor outcome
F.C. Bidard (France) SP-0572

10:18 > Development of hypoxia gene signatures as biomarkers for treatment stratification
C. West (UK), L. Yang, D. Roberts, B. Bibby, L. Forker, S. Haider, F. Buffa, A. Choudhury OC-0573

SYMPOSIUM

4D imaging and tracked delivery

09:15 - 10:30 | STRAUS 2-3

Real-time tumour tracking for motion management has been a popular and challenging research topic the last decade, with dedicated sessions during previous ESTRO meetings reporting on isolated developments and commercial solutions with specialised equipment. In this symposium, the speakers evaluate the current status and explore the possibilities for mainstream clinical implementation.

Chair: D. Verellen (Belgium)
Co-chair: B. Raaymakers (The Netherlands)

09:15 > MLC tracking: from bench to bedside
Speaker: M. Fast (UK) SP-0574

09:40 > Motions models and tracking using MR
Speaker: R. Tijssen (The Netherlands) SP-0575

10:05 > Tracking: present status and what to expect in the near future
Speaker: T. Ravkilde (Denmark) SP-0576

SYMPOSIUM

Modelling and treatment customisation

09:15 - 10:30 | LEHAR 1-3

Computerized treatment plan optimization, which is integral part of today's planning process, is mainly driven by normal tissue complication considerations. During the last years prospective data registration programs are increasingly used in this context to collect large standardized data sets of good quality, for which advanced modeling

techniques can be used. The symposium will provide updates on dose-volume effects for the major organs at risk for head-and-neck cancer, the thoracic region, as well as on pelvic treatment sites. This enables to explore emerging factors like genetics and image feature. Furthermore, challenges and pitfalls of model's validation will be addressed in the symposium, such as variations of toxicity across fractionation.

Chair: D. Georg (Austria)
Co-chair: P. Peterlin (Slovenia)

09:15 > Developments in head and neck toxicity data, models, and treatment optimisation
Speaker: A. Van Der Schaaf (The Netherlands) SP-0577

09:40 > New NTCP data in the thoracic region: probing 'dark toxicity'
Speaker: J. Deasy (USA) SP-0578

10:05 > New NTCP data in the pelvic area
Speaker: C. Fiorino (Italy) SP-0579

SYMPOSIUM

RT is technology driven. How to keep the patient involved?

09:15 - 10:30 | STRAUS 1
Chair: S.C. Frasca (Italy)
Co-chair: N. Metz (Austria)

09:15 > Patient education – tools to improve patient positioning
Speaker: H. Hansen (Denmark) SP-0580

09:40 > PROMs analysis to improve communication and enhance practice
Speaker: A. Lemanska (UK) SP-0582

10:05 > Public knowledge of RT saves lives: the case for RT awareness
Speaker: E. Naessens (Ireland) SP-0581

SYMPOSIUM

Hypofractionation in prostate cancer

11:00 - 12:00 | STOLZ 1-2

This session will cover the evolution in dose fractionation for prostate cancer. These new dose fractionation schemes vary from moderate hypofractionation to extreme hypofractionation. Moderate hypofractionation has been explored in four recent large phase 3 trials in low, intermediate and high risk prostate cancer.
With high precision radiotherapy we can move to even larger doses per fraction eg 5 fractions of 7 to 9 Gy to a moderate total dose. Phase 3 studies are currently ongoing to compare this extreme hypofractionation with conventional or moderate hypofractionated schedules.

Challenges remain in the radiobiological interpretation of moderate or extreme hypofractionation in prostate cancer.

Chair: K. Haustermans (Belgium)
Co-chair: P. Agoston (Hungary)

11:00 > Moderate hypofractionation in prostate cancer: what have we learnt from phase 3 trials
Speaker: D.P. Dearnaley (UK) SP-0583

11:20 > Extreme hypofractionation – the future of prostate care or repeating past mistakes?
Speaker: A. Loblaw (Canada) SP-0584

11:40 > Hypofractionation in prostate cancer: a word of caution
Speaker: S. Bentzen (USA) SP-0585

SYMPOSIUM

Is there any ground for boost brachytherapy in the time of high precision IGRT/IMRT?

11:00 - 12:00 | SCHUBERT

Three experts in the field of external beam irradiation (EBI), brachytherapy, and medical physics will review the role of brachytherapy boost in the era of high precision external beam IGRT/IMRT. Prof Ozsahin will show current EBI boost techniques in breast and GYN tumours including VMAT, Tomotherapy, CyberKnife, SBRT, and protons. Current evidence and challenges of SBRT/IMRT boost using IGRT will be presented. Prof Baltas will compare dose distributions of brachytherapy versus simultaneous integrated EBI boost techniques with special emphasis on dose gradient within the CTV. Dr Guinot will summarize the advantages of brachytherapy boost over EBI techniques including better conformity and sparing of normal tissues, steep dose gradient, and shorter overall treatment time. He will review long-term clinical evidence supporting the use of brachytherapy boost in multiple sites (e.g. prostate, GYN, breast, H&N, and anal canal).

Chair: C. Polgár (Hungary)
Co-chair: H. Stankusova (Czech Republic)

11:00 > The efficacy of IGRT/IMRT simultaneous integrated boost (SIB) in gynaecology and breast
Speaker: E.M. Ozsahin (Switzerland) SP-0586

11:20 > Dose gradients: the effect of high doses inside the CTV comparing boost brachytherapy with SIB
Speaker: D. Baltas (Germany) SP-0587

11:40 > Why use invasive techniques for boost if IGRT is more comfortable for the patient?
Speaker: J. Guinot (Spain) SP-0588

SYMPOSIUM WITH PROFFERED PAPERS

Novel approaches in tumour control

11:00 - 12:00 | LEHAR 4

Chair: G. Zadeh (Canada)
Co-chair: M. Cemazar (Slovenia)

11:00 > Molecular mechanisms of radiation-induced *in situ* tumor vaccination
S. Demaria (USA) SP-0589

11:25 > Novel developments in paediatric cancer
M. McCabe (UK) SP-0590

11:50 > Hypoxic cell killing by SN36506, a novel hypoxia-activated prodrug
R. Niemans, A. Yaromina, J. Theys, A. Ashoorzadeh, R. Anderson, M. Bull, C. Guise, H.L. Hsu, M. Abbattista, A. Mowday, A.V. Patterson, J.B. Smaill, L. Dubois, P. Lambin (The Netherlands) OC-0591

SYMPOSIUM

Applications and challenges in dosimetry for MR-linacs

11:00 - 12:00 | STRAUS 2-3

MR-linacs are being installed in many centres. In this symposium we will journey through the processes of understanding how to measure dose in the presence of a B-field, how to commission a MR-linac and set up regular quality assurance procedures, including lessons which can be transferred from a Co-MR system. Finally, we will address the pre treatment verification which is needed for each patient, including comparing which systems might be best for which purposes.

Chair: C. Clark (UK)
Co-chair: D. Lojko (Slovakia)

11:00 > Reference dosimetry: getting the basics and calibration right
Speaker: S. Duane (UK) SP-0592

11:20 > Clinical commissioning of MR guided treatment systems
Speaker: O. Green (USA) SP-0593

11:40 > Pre-treatment phantom dosimetry: effects in different phantoms and detectors
Speaker: B. Van Asselen (The Netherlands) SP-0594

SYMPOSIUM

Novel approaches for combining imaging and non-imaging data for radiotherapy response predicition

11:00 - 12:00 | LEHAR 1-3

This symposium focused on different approaches to combine imaging and non-imaging data to better predict radiotherapy (RT) outcome. Firstly, the role of oxygenation in tumor radio-sensitivity as well as current methods to assess tumor oxygenation will be discussed, followed by an example of volume and oxygen-related data integration in tumor evolution models. The second lecture will focus on radiomics, radiogenomics and imaging genomics as well as on methods for multi-scale data fusion. In addition, the usage of deep learning techniques X such as convolutional neural networks for RT outcome prediction will be discussed. Finally, first results will be presented where a classifier is created that predicts the presence of cancer on a voxel-level based on multi-parametric prostate MRI data analyzed with feature extraction techniques. By adding population based knowledge about intra-prostatic cancer distribution and individual information from biopsies, the classifier performance can be further improved to predict clinical outcome measures after treatment of prostate cancer.

Chair: D. Thorwarth (Germany)
Co-chair: J. Grezdo (Slovakia)

11:00 > Modeling the interplay among volume, vascularization and radio-sensitivity in cervical cancer exploiting 3D-Doppler data
Speaker: A. Belfatto (Italy) SP-0595

11:20 > Machine learning and bioinformatics approaches to combine imaging with non-imaging data for outcome prediction
Speaker: O. Gevaert (USA) SP-0596

11:40 > Tissue classification models for prostate based on imaging and non-imaging data
Speaker: U. Van der Heide (The Netherlands) SP-0597

DEBATE

Precision in radiotherapy: mission complete!

11:00 - 12:00 | STRAUS 1
Chair: M. Mast (The Netherlands)
Co-chair: F. Moura (Portugal)

11:00 > For the motion
Speaker: C. Dickie (Canada)

11:15 > Against the motion
Speaker: A. Duffton (UK)
11:30 > For the motion (rebuttal)
Speaker: C. Dickie (Canada)
11:40 > Against the motion (rebuttal)
Speaker: A. Duffton (UK)
11:50 > Discussion

SP-0598

PLENARY SESSION

Closing debate: This house believes that 20 years from now, due to the advances in technology, the need for human input in radiotherapy will be minimal

12:00 - 13:00 | STRAUS 2-3

Chair: Y. Lievens (Belgium)
Chair: B. Heijman (The Netherlands)

> For the motion: The need for human input will diminish gradually
Speaker: D. Jaffray (Canada)
> Against the motion: There will still be a considerable need for human input in radiotherapy despite the technological advances
Speaker: P. Poortmans (France)
> For the motion: The need for human input will diminish gradually
Speaker: P. Lambin (The Netherlands)
> Against the motion: There will still be a considerable need for human input in radiotherapy despite the technological advances
Speaker: M. Aznar (Denmark)

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POSTERS AND ELECTRONIC POSTERS

Posters

POSTER

Clinical track: Head and Neck

> Metachronous second primary head and neck squamous cell carcinoma
S.Y. Wu (Chinese Taipei) PO-0603

> A PET-based nomogram to predict survival in oropharyngeal cancers radiotherapy
J. Castelli (France), A. Depeursinge, V. Ndoh, J.O. Prior, M. Ozsahin, A. Devillers, E. Chajon, R. De Crevoisier, N. Scher, F. Jegoux, E. Vauleon, B. De Bari, J. Bourhis PO-0604

> Factors associated with late dysphagia and xerostomia in (chemo) radiation for head and neck cancer.
F. Duprez (Belgium), L. De Witte, S. Nuyts, S. Deheneffe, D. Van Gestel, M. Voordeckers, H. Thierens, W. De Neve, K. De Ruyck PO-0605

> Mandible osteoradionecrosis in oropharynx carcinoma treated with IMRT: Smoking and tumor size matter
F. Caparrotti (Canada), S.H. Huang, Y. Song, S. Bratman, J. Ringash, A. Bayley, M. Giuliani, J. Kim, J. Waldron, A. Hansen, L. Tong, W. Xu, B. O'Sullivan, R. Wood, A. Hope PO-0606

> Quality of life and xerostomia with IMRT versus 3D-CRT in postoperative head and neck radiotherapy
H.P. Van der Laan (The Netherlands), H.P. Bijl, J.G.M. Vemer-van den Hoek, R.J.H.M. Steenbakkers, D.H.F. Rietveld, M.R. Vergeer, C.R. Leemans, J.A. Langendijk PO-0607

> Depression, anxiety and claustrophobia in patients undergoing radiotherapy for head and neck cancer
M.E. Pelland (Canada), L. Lambert, E. Filion, H. Bahig, M.P. Beaudry, A. Ouellette, P. Bahary, P. Nguyen-Tan PO-0608

> 18F-FDG-PET in Guiding Dose-painting with IMRT in Oropharyngeal Tumours (FiGaRO) – Early Results
A. Michaelidou (UK), L. Pike, C. Thomas, L. Penketh, Y. Suh, S. Barrington, M. Evans, M. Lei, T. Guerrero Urbano PO-0609

> Effects of an oral health promotion program in head and neck cancer patients receiving radiotherapy
E. Kim (Republic of Korea), H.G. Wu, J.H. Kim, K.S. Kim, T. Yu, C.W. Wee, N. Choi, B.S. Jang, S.H. Jeon, H.J. Lee, D.H. Han PO-0610

> Long-term prognostic impacts of pretreatment plasma EBV DNA status in nasopharyngeal carcinoma
J.C. Lin (Taiwan), W.Y. Wang, J.W. Huang PO-0611

> Significance of co-expression of mutant p53 protein and Ki67 in locally advanced HNSCC post chemo-RT
P. Baskaran Shanmuga (India), K. Periasamy, S. Sharma, G.K. Singh, V. Yadav, A. Gupta, J. Kaur, A.K. Mandal, K.T. Bhowmik PO-0612

> Effect of geometric GTV-CTV margins in national contouring guidelines
C.R. Hansen (Denmark), J. Johansen, E. Samsøe, E. Andersen, J.B. Petersen, K. Jensen, H.M.B. Sand, L.J. Andersen, C. Grau PO-0613

> The prognostic role of 18F-FDG PET/CT in head and neck cancer and the importance of HPV status
J.M. Moan (Norway), E. Malinen, J.G. Svestad, C.D. Amdal, T.V. Bogsrud, E. Dale PO-0614

> Can diffusion-weighted MRI predict for xerostomia and QoL in head and neck patients receiving RT?
K. Nguyen (Australia), M. Min, L. Holloway, M. Jameson, C. Rumley, A. Fowler, M. Lee, D. Forstner, R. Rai, G. Liney PO-0615

> HPV, CSC marker expression and tumor hypoxia as prognosticators for LRC in patients with HNSCC
A. Linge (Germany), S. Löck, C. Krenn, S. Appold, F. Lohaus, M. Schneider, A. Nowak, V. Gudziol, G.B. Baretton, F. Buchholz, M. Baumann, M. Krause PO-0616

> Functional brain abnormalities in NPC patients after radiotherapy
W. Ren (China), J. Dai, Y. Li, L. Gao, C. Sun PO-0617

> Role of PET in radiotherapy planning of head and neck tumors: a systematic review
M. Ferioli (Italy), A. Farioli, F. Cellini, A. Arcelli, I. Sandler, S. Cilla, F. Deodato, G. Macchia, S. Cammelli, A. Guido, F. Romani, A. Angelini, G. Compagnone, F. Miccichè, R. Frakulli, M. Buwenge, M. Marengo, V. Valentini, S. Fanti, A.G. Morganti PO-0618

> Comparison of a nanoString and RNA microarray gene signature predicting LRC after PORT-C in HNSCC
S. Schmidt (Germany), A. Linge, A. Zwanenburg, S. Leger, F. Lohaus, V. Gudziol, A. Nowak, I. Tinhofer, V. Budach, A. Sak, M. Stuschke, P. Balermpas, C. Rödel, A.L. Grosu, A. Abdollahi, J. Debus, C. Belka, S.E. Combs, D. Mönnich, D. Zips, G.B. Baretton, F. Buchholz, M. Baumann, M. Krause, S. Löck PO-0619

> Partial Laryngeal IMRT for T2N0 Glottic Cancer: Impact of Image Guidance and Radiotherapy Regimen
K. Rock (Canada), S. Huang, A. Tiong, L. Lu, W. Xu, A. Bayley, S. Bratman, J. Cho, M. Giuliani, A. Hope, J. Kim, J. Ringash, B. O'Sullivan, J. Waldron PO-0620

> Validation of tumor delineation on HE stained sections with cytokeratin staining as gold standard
H. Ligtenberg (The Netherlands), S. Willems, E. Jager, C. Terhaard, C. Raaijmakers, M. Philippens PO-0621

POSTER
Clinical track: CNS

> Medulloblastoma in adults: a retrospective single institution analysis
I. Hadi (Germany), O. Roengvoraphoj, F. Roeder, C. Belka, S. Nachbichler PO-0622

> Impact of Interim Events during the Surgery-to-Radiotherapy Interval in Newly Diagnosed Glioblastoma
C.W. Wee (Republic of Korea), E. Kim, I.H. Kim, T.M. Kim, C.K. Park, J.W. Kim, S.H. Choi PO-0623

> Gammaknife Radiosurgery in patients receiving anticancer immunotherapy: efficacy and safety
D. Greto (Italy), M. Loi, S. Scoccianti, M. Baki, I. Desideri, L. Bordi, P. Bono, I. Meattini, P. Bonomo, F. Terziani, V. Carfora, L. Livi PO-0624

> Accelerated-hypofractionated IMRT plus Temozolomide in Glioblastoma:a phase I dose-escalation study
M. Ferro (Italy), G. Macchia, F. Deodato, S. Cilla, A.C. Melone, P. Pagnano, M. Ferro, M. Boccardi, A. Ianiro, A. Arcelli, S. Cammelli, A. Farioli, G.P. Frezza, M. Ciuffreda, G. Sallustio, S. Chiesa, M. Balducci, V. Valentini, A.G. Morganti PO-0625

> Quality of life: result from a randomized trial that compared WBRT with radiosurgery of tumor cavity
L. Kepka (Poland), D. Tyc-Szczepaniak, K. Osowiecka, A. Sprawka, B. Trabska-Kluch, B. Czeremszyńska, M. Olszyna-Serementa PO-0626

> Prediction of radiosurgery response of brain metastases using convolutional neural networks
Y. Cha (Republic of Korea), M.S. Kim, C.K. Cho, H. Yoo, W.I. Jang, Y.S. Seo, J.K. Kang, E.K. Paik PO-0627

> Correlation between 18F-FDOPA uptake and tumor relapse in recurrent high-grade gliomas
I. Chabert, F. Dhermain, S. Bibard, S. Reuze, A. Schernberg, F. Orlhac, I. Buvat, E. Deutsch, C. Robert (France) PO-0628

> A 4-miRNA signature predicts the therapeutic outcome of glioblastoma
M. Niyazi, A. Pitea, M. Mittelbronn, J. Steinbach, C. Sticht, *F. Zehentmayr, D. Piehlmaier, H. Zitzelsberger, K. Lauber, U. Ganswindt, C. Rödel, C. Belka, K. Unger (Germany)* PO-0629

> The role of mc4r gene polymorphisms in GBM patients treated with concomitant radio-chemotherapy
M. Cantarella (Italy), F. Pasqualetti, A. Gonnelli, P. Orlandi, D. Giuliani, D. Delishaj, S. Montrone, G. Coraggio, E. Lombardo, V. Simeon, T. Di Desiderio, A. Fioravanti, M. Fabrini, R. Danesi, S. Guarini, F. Paiar, G. Bocci PO-0630

> Molecular subtypes of glioblastoma: immunohistochemical approach and clinical correlations
L. Triggiani (Italy), M. Cominelli, E. Tratta, P. Ghirardelli, S. Pedretti, N. Pasinetti, M. Buglione, R. Galli, S. Magrini, P.L. Poliani PO-0631

> Phase I/II Trial on Intraoperative Radiotherapy (IORT) in Glioblastoma Multiforme (INTRAGO I/II)
F. Giordano (Germany), S. Brehmer, B. Mürle, G. Welzel, E. Sperk, A. Keller, Y. Abo-Madyan, S. Clausen, F. Schneider, C. Herskind,

M. Seiz-Rosenhagen, C. Groden, P. Schmiedek, M. Glas, D. Hänggi, K. Petrecca PO-0632

> Randomized study of adjuvant temozolomide (6 vs.12 cycle) in newly diagnosed glioblastoma multiforme
A.K. Gandhi (India), M. Bhandari, D.N. Sharma, P. Julka, G.K. Rath PO-0633

> Irradiation of Subventricular Zone in Glioblastoma: Its Impact on Tumor Progression and Survival
F. Sert (Turkey), S. Hoca, S. Kamer, Y. Anacak PO-0634

> Can psychological support during RT improve distress, mood or quality of life in CNS tumor patients?
L. Dinapoli, S. Chiesa (Italy), N. Dinapoli, F. Beghella Bartoli, S. Bracci, M. Massaccesi, A. Tenore, A. Pesce, V. Valentini, M. Balducci PO-0635

> Impact of DWI-MRI for gross tumor volume definition in patients with recurrent glioblastoma
O. Oehlke (Germany), S. Bott, A.L. Grosu, I. Mader PO-0636

> HFSRT to the resection bed for intracranial metastases: a large retrospective study of 181 patients.
A. Keller (France), M. Doré, F. Thillays, F. Proust, H. Cebula, I. Darié, F. Lefebvre, G. Noel, D. Antoni PO-0637

> FET PET prior to primary RT of glioblastoma patients - a recurrence pattern analysis
D.F. Fleischmann (Germany), M. Unterrainer, R. Schön, S. Corradini, C. Maihöfer, P. Bartenstein, C. Belka, N.L. Albert, M. Niyazi PO-0638

> Feasibility of tract based dosimetric analysis in brain tumor patients
M. Conson (Italy), L. Cella, E. D'Ippolito, F. Piccolo, S. Cocozza, V. D'Avino, R. Liuzzi, M. Quarantelli, R. Pacelli PO-0639

> Which measurement type should be used for disease control of brain metastasis, volumetric or linear?
A. Fischedick, G. Fischedick (Germany), U. Haverkamp PO-0640

> A novel voxel based homogeneity index: clinical implications for WBRT
A.H. Thieme (Germany), C. Stromberger, P. Ghadjar, A. Grün, S. Zschaek, V. Budach PO-0641

> Influence of Introduction of VMAT and FET-PET on Treatment Outcomes for Glioblastoma Patients
P. Munck af Rosenschöld (Denmark), I. Law, S. Engelholm, A. Muhic, M. Lundemann, H. Roed, K. Grunnet, H. Poulsen PO-0642

> Scalp-sparing radiotherapy to minimize alopecia in patients with primary brain cancer
S. Scoccianti (Italy), G. Simontacchi, C. Talamonti, L. Marrazzo, G.A. Carta, L. Visani, M. Baki, L. Poggesi, D. Greto, B. Detti, P. Bonomo, M. Loi, S. Pallotta, L. Livi PO-0643

> Overall survival following stereotactic radiosurgery (SRS) for breast cancer brain metastases
H. Patel (USA), S. All, A. Keller, B. Dumas, C. Sherrill, M. Mejia, N. Ramakrishna PO-0644

POSTER
Clinical track: Haematology

> The patterns of the relapses of aggressive non-hodgkin lymphomas after chemoradiotherapy
V. Sotnikov (Russian Federation), G.A. Panshin, N.V. Nudnov, V.A. Solodkiy PO-0645

> Nodular Lymphocyte Predominant Hodgkin's Lymphoma (NLPHL): Early Outcomes
N. Khanna (India), N. Kalyani, J. Godasastry, H. Menon, M. Sengar, N. Khattry, U. Dangi, B. Arora, T. Shet, S. Gujral, E. Sridhar, V. Rangarajan, S. Banavali, S. Laskar PO-0646

> Factors associated with pulmonary toxicity after conditioning with total body irradiation
H.K. Byun (Republic of Korea), H.I. Yoon, H.J. Kim, J. Cho, C.O. Suh PO-0647

> Is age>60 unfavorable prognostic factor in early stage upper aerodigestive tract NK/T-cell lymphoma?
B. Chen (China), Y. Li, W. Wang, J. Jin, S. Wang, Y. Liu, Y. Song, H. Fang, H. Ren, S. Qi, Y. Tang, X. Liu, Z. Yu PO-0648

POSTER

Clinical track: Breast

> Locoregional Treatment of the Primary Tumour Shows Survival Benefit in De Novo Stage IV Breast Cancer
S.H. Choi (Republic of Korea), W.J. Rhee, J.W. Kim, C.O. Suh, K.C. Keum, Y.B. Kim, I.J. Lee **PO-0649**

> Omitting radiotherapy in triple-negative breast cancer leads to worse cancer-specific survival
I. Kindts (Belgium), P. Buelens, A. Laenen, E. Van Limbergen, H. Janssen, H. Wildiers, C. Weltens **PO-0650**

> Five year outcome and soft tissue toxicity of breast cancer hypofractionated adjuvant radiotherapy
F. Zerbetto, A. Fodor (Italy), C. Sini, P. Mangili, M. Pasetti, P. Signorotto, C. Fiorino, I. Dell'Oca, A. Chiara, A.M. Deli, N. Slim, B. Noris Chiorda, C.L. Deantoni, C. Gumina, M. Azizi, G. Rossi, S. Foti, P. Passoni, A. Bolognesi, N.G. Di Muzio **PO-0651**

> Risk factors for complications of post-mastectomy radiotherapy on implant-based reconstructed breast
M. Ogita (Japan), J. Kawamori, K. Sekiguchi, N. Nagura, R. In, A. Yoshida, H. Yamauchi, Y. Iwahira **PO-0652**

> A heart atlas for breast RT and the influence of delineation education on observer variability
M. Kirli (Turkey), D. Akçay, M.M. Barış, I. Bilkay Görken **PO-0653**

> Failure Patterns of Luminal B Breast Cancer Following Postoperative Adjuvant Radiation Therapy
N. Choi (Republic of Korea), S.W. Lee, Y. Lim, K.Y. Eom, E.Y. Kang, E.K. Kim, Y.J. Kim, J.H. Kim, S.Y. Park, I.A. Kim **PO-0654**

> Patterns of locorégional failure in women with breast cancer treated by Postmastectomy Radiotherapy
G. Loganadane (France), Z. Xi, N. Grellier Adedjouma, H.P. Xu,S. Krhili, A. Chilles, F. Campana, A. Fourquet, Y. Kirova **PO-0655**

> Reirradiation+hyperthermia after surgery for recurrent breast cancer: 70% 5-year local control
S. Oldenborg (The Netherlands), J. Crezee, Y. Kusumanto, R. Van Os, S. Oei, J. Venselaar, P. Zum Vörde Sive Vörding, C. Rasch, T. Van Tienhoven **PO-0656**

> Breast cancer subtypes and incidence/survival in patients with brain metastases
Y.C. Tsai (Taiwan), M.C. Liu, H.C. Cheng, J.J. Jian, B.L. Yu, C.M. Chen, N.M. Chu, C.F. Horng, M.H. Tsou **PO-0657**

> Impact of breast radiation therapy on complications after alloplastic breast reconstruction
C.D.L.G. Chaves, H.D.A. Carvalho, T.D.C. Saraiva, T.T. Fuzisaki, G.N. Marta (Brazil), R. Casagrande, A. Munhoz, J.A. Brasil, S.R. Stuart **PO-0658**

> Hypofractionated-accelerated concomitant boost in moderate-high risk breast cancer:phase I-II study
M. Boccardi (Italy), G. Macchia, F. Deodato, M. Ferro, S. Cilla, A. Ianiro, S. Cammelli, A. Farioli, D. Smaniotto, A.L. Angelini, A. Di Stefano, G.P. Frezza, I. Ammendolia, G. Tolento, A. Zamagni, V. Valentini, A.G. Morganti **PO-0659**

> Partial breast re-irradiation with IMRT in patients with local failure after conservative treatment
S. Dicuonzo (Italy), R. Spoto, M.C. Leonardi, A. Surgo, A. Viola, M. Augugliaro, F. Pansini, F. Cattani, V. Galimberti, A. Morra, V. Dell'Acqua, R. Orecchia, B.A. Jereczek-Fossa **PO-0660**

> Intraoperative partial breast re-irradiation: a multicenter study of the AIRO IORT Working Group
M.C. Leonardi (Italy), G.B. Ivaldi, M. Alessandro, G. Catalano, A. Ciabattoni, C. Fillini, M. Guenzi, L. Tomio, D.P. Rojas, M. Augugliaro, C. Fodor, C. Sangalli, F. Rossetto, B.A. Jereczek –Fossa, R. Orecchia, AIRO IORT Working Group **PO-0661**

> Target therapy and hypofractionated whole breast radiotherapy: an unexpected protective factor.
M.C. De Santis (Italy), F. Di Salvo, F. Bonfantini, S. Di Cosimo, E.D. Mantero, V. Riboldi, M. Dispinzieri, F. Soncini, V. Cosentino, G. Bianchi, M. Gennaro, M. Sant, R. Valdagni, E. Pignoli, L. Lozza **PO-0662**

> Early toxicity of 150 patients treated with hypofractionated breast SIB-RT using advanced techniques
F. Lakosi (Hungary), C. Pirson, P.V. Nguyen, P. Berkovic, S. Ben-Mustapha, F. Princen, S. Cucchiaro, A. Gulyban, V. Baart, P. Coucke **PO-0663**

> Standardized Nodal Radiation (RT) through a Breast Clinical Pathway (CP) within a USA Cancer Network
B. Gebhardt (USA), Z. Horne, G. Ahrendt, E. Diego, D. Heron, S. Beriwal PO-0664

> The role of post-mastectomy radiotherapy (PMRT) and prognostic factors of locoregional recurrence
D. Delishaj (Italy), S. Ursino, V. Mazzotti, L.R. Fatigante, S. Spagnesi, B. Manfredi, A. Cristaudo-, F. Pasqualetti, A. Sainato, C. Laliscia, M. Pnichi, F. Orlandi, F. Matteucci, R. Morganti, E. Lombardo, M. Cantarella, D. Baldaccini, A. Gonnelli, M.G. Fabrini, A. Molinari, M. Roncella, A. Falcone, D. Caramella, F. Paiar PO-0665

POSTER

Clinical track: Lung

> 30 Gy single-dose SBRT to lung lesions: outcome in a large series of patients
L. Nicosia (Italy), C. Reverberi, L. Agolli, M. Valeriani, V. De Sanctis, C. De Dominicis, G. Minniti, E. Cortesi, M. Martelli, M.F. Osti PO-0666

> The differences between two groups of patients with NSCLC depending on the imaging for radiotherapy
A. Masarykova (Slovakia), D. Scepanovic, P. Bires, D. Lederleitner, M. Pobijakova, P. Povinec PO-0667

> Five-fraction SBRT for central NSCLC in-field recurrences following high-dose conventional radiation
M.C. Repka (USA), N. Aghdam, S. Kataria, S. Suy, E. Anderson, S.P. Collins, B.T. Collins, J.W. Lischalk PO-0668

> Models of pulmonary function changes after thoracic radiotherapy
A.G.H. Niezink (The Netherlands), O. Chouvalova, J.F. Ubbels, A.J. Van der Wekken, J.A. Langendijk, J. Widder PO-0669

> CPAP ventilation might allow better sparing of normal lung tissue during lung cancer radiotherapy
D. Di Perri (Belgium), A. Colot, A. Barragan, G. Janssens, V. Lacroix, P. Matte, K. Souris, X. Geets PO-0670

> Influence of "radioresistant" histologies on SBRT outcome for lung metastases
D. Franceschini (Italy), L. Cozzi, F. De Rose, P. Navarria, G.R. D'Agostino, S. Tomatis, C. Franzese, T. Comito, F. Lobefalo, P. Mancosu, M. Scorsetti PO-0671

> Delineation and eye-tracking: How to analyse treatment decisions according physician experience?
F. Legouté (France), A. Paumier, A. Marquis, J. Blanchecotte, P.J. Mention, P. Gustin, P. Trémolières, D. Caron, C. Cavaro-Ménard PO-0672

> Healing of the bronchial anastomosis and time between neoadjuvant radiochemotherapy and surgery.
A. Koryllos (Germany), M. Hammer-Helmig, W. Engel-Riedel, D. Zalepugas, E. Stoelben, C. Ludwig PO-0673

> SABR for lung tumours of 5cm or more: can knowledge-based planning detect high-risk treatment plans?
S. Van 't Hof (The Netherlands), M. Dahele, H. Tekatli, A. Delaney, J. Tol, B.J. Slotman, S. Senan, V. W.F.A.R. PO-0674

> Evaluating commercial delineation software in routine clinical practice: analysing time and quality.
T. Lustberg (The Netherlands), W. Van Elmpt, J. Van der Stoep, J. Van Soest, M. Gooding, A. Dekker PO-0675

> Outcomes of synchronous and metachronous pulmonary oligometastasis treated with SBRT
A. Sharma (The Netherlands), M. Duijm, E. Oomen-de Hoop, J. Aerts, C. Verhoef, M. Hoogeman, J. Nuyttens PO-0676

> Vero SBRT for early stage lung cancer: a phase II trial with dynamic tracking in selected lesions
C. Collen, R. Van den Begin (Belgium), M. Boussaer, B. Engels, J. Dhont, M. Burghelea, G. Storme, M. De Ridder PO-0677

> Health-related quality of life reporting in lung cancer trials: a methodological appraisal.
L. Van der Weijst (Belgium), V. Surmont, W. Schrauwen, Y. Lievens PO-0678

POSTER

Clinical track: Upper GI (oesophagus, stomach, pancreas, liver)

> Role of Chemoradiation Therapy as an initial treatment for Esophageal Carcinoma: a meta-analysis
M. MA (China), X.S. Gao, X. Gu PO-0679

> SBRT for locally advanced pancreatic cancer (LAPC): a retrospective multi-institutional experience
G. Macchia (Italy), A. Arcelli, A.G. Morganti, F. Bertini, A. Guido, L. Fuccio, F. Dalla Torre, S. Cilla, V. Scotti, M.E. Rosetto, I. Djan, S. Parisi, G.C. Mattiucci, V. Valentini, M. Fiore, P. Bonomo, A. Bacigalupo, R.M. Niespolo, P. Gabriele, F. Deodato PO-0680

> SBRT VS standard chemoradiation in locally advanced pancreatic cancer (LAPC): a case-control study
A. Arcelli (Italy), F. Bertini, A.G. Morganti, A. Guido, L. Fuccio, F. Deodato, S. Cilla, F. Dalla Torre, V. Scotti, E.M. Rosetto, I. Djan, S. Parisi, G.C. Mattiucci, V. Valentini, M. Fiore, P. Bonomo, A. Bacigalupo, R.M. Niespolo, P. Gabriele, G. Macchia PO-0681

> Re-irradiation for oligo-recurrence from esophageal cancer with radiotherapy history
K. Jingu (Japan), Y. Niibe, H. Yamashita, K. Katsui, T. Matsumoto, T. Nishina, A. Terahara PO-0682

> Impact of the radiation dose on hepatic perfusion evaluated using mebrofenin liver scintigraphy
B. De Bari (France), T. Breuneval, M. Zeverino, S. Godin, L. Deantonio, J. Prior, J. Bourhis, R. Moeckli, M. Ozsahin PO-0683

> Opposite pharmacokinetics of sorafenib modulates by liver irradiation – concurrent versus sequential
C.H. Hsieh (Taiwan), L.Y. Wang, T.H. Tsai, Y.J. Chen PO-0684

> The value of postoperative adjuvant therapy for pT2-3 esophageal cancer treated by radical resection
S. Zhu (China), L. Shuguang, L. Youmei, S. Wenbin, L. Juan, L. Zhukun, S. Jingwei, L. Teng PO-0685

> Perfusion imaging of colorectal liver metastases treated with bevacizumab and SBRT
H. Chung (Canada), J. Detsky, P. Munoz-Schuffenegger, L. Milot, W. Chu, C. MacDonald, Y. Ko PO-0686

> Spleen dosimetry are associated with lymphopenia during radiotherapy for hepatocellular carcinoma
Q. Zhao, R. Wang, T. Liu, J. Yue (China) PO-0687

> Unresectable hepatic oligorecurrence SBRT of 55 lesion: Adequate dose coverage improves local control
P. Berkovic (Belgium), A. Gulyban, P. Viet Nguyen, D. Dechambre, P. Martinive, N. Jansen, F. Lakosi, L. Janvary, P.A. Coucke **PO-0688**

> Clinical target volume in biliary carcinoma: a systematic review of pathological studies
I. Marinelli (Italy), L. Fuccio, A. Guido, A. Farioli, V. Panni, G. Ercolani, G. Brandi, S. Cammelli, A. Galuppi, G. Macchia, R. Frakulli, G. MAttiucci, F. Cellini, M. Buwenge, M. Renzulli, F. Deodato, S. Cilla, V. Valentini, V. Tombolini, R. Golfieri, A. Morganti **PO-0689**

> An initial result of carbon-ion radiotherapy for metastatic liver tumors.
S. Toyama (Japan), H. Suefuji, M. Shinoto, K. Matsumoto, Y. Shioyama **PO-0690**

> Whole-body total lesion glycolysis is an independent predictor of thoracic esophageal cancer
N. Takahashi (Japan), R. Umezawa, K. Takanami, Y. Takaya, Y. Ishikawa, M. Kozumi, K. Takeda, N. Kadoya, K. Jingu **PO-0691**

> The role of adjuvant chemoradiotherapy in patients with common bile duct cancer after R1 resection
S.W. Kim (Republic of Korea), S.H. Kang, M. Chun, Y.T. Oh, O.K. Noh, H. Jang, S. Jo **PO-0692**

> Stereotactic radiotherapy in hepatocellular carcinoma: a systematic review
L. Manuzzi (Italy), A. Farioli, G. Macchia, F. Deodato, S. Cilla, V. Picardi, F. Cellini, G.C. Mattiucci, A.D. Andrulli, A. Guido, S. Cammelli, A. Arcelli, A. Cortesi, G. Tolento, G. Siepe, M. Ferioli, M. Buwenge, G.P. Frezza, L. Fuccio, A.G. Morganti **PO-0693**

> Post-operative intensity-modulated hypofractionated image-guided radiotherapy in cholangiocarcinoma
N. Slim (Italy), B. Noris Chiorda, C. Gumina, G.M. Cattaneo, M. Reni, L. Aldrighetti, A.M. Deli, F. Zerbetto, P. Passoni, N. Di Muzio **PO-0694**

> Neo-adjuvant chemoradiotherapy and resection for esophageal cancer: outcomes in daily practice.
E.S.H. Portier (The Netherlands), K.J. Neelis, M. Fiocco, W.O. De Steur, A.M.J. Langers, J.J. Boonstra, H.H. Hartgrink, M. Slingerland, F.P. Peters **PO-0695**

> A predictive nomogram for decision support for patients with pancreatic neuroendocrine tumours
A. Jochems, R. Baum (Germany), A. Singh, K. Niepsch, H. Kulkarni, P. Lambin PO-0696

> Reduced inter- and intra-observer variation in esophageal tumour delineation using fiducial markers.
M. Machiels (The Netherlands), P. Jin, P. Jelvehgaran, O.J. Gurney-Champion, E.D. Geijsen, P.M. Jeene, M.W. Kolff, V. Oppedijk, M.B. Van Herk, T. Alderliesten, M.C.C.M. Hulshof PO-0697

> Phase II study of induction chemotherapy followed by radiochemotherapy in pancreatic cancer
M. Fiore (Italy), R. D'Angelillo, B. Floreno, P. Trecca, L. Trodella, A. Iurato, L. Trodella, R. Coppola, S. Ramella PO-0698

> Is stereotactic radiotherapy following radiochemotherapy useful in local advanced pancreatic cancer?
G. Mattiucci, A. Nardangeli (Italy), L. Boldrini, M. Balducci, F. Cellini, S. Chiesa, G. Chiloiro, F. Deodato, N. Dinapoli, V. Frascino, M. Gambacorta, G. Macchia, A. Morganti, V. Valentini PO-0699

> Significant heart dose reduction by deep inspiration breath hold for RT of esophageal cancer
M. Dieters (The Netherlands), J.C. Beukema, A.C.M. Van den Bergh, E.W. Korevaar, N.M. Sijtsema, J.A. Langendijk, C.T. Muijs PO-0700

> Discrepancies between pathological data on nodal spread and the CTVs in RT for biliary tract cancer
I. Socha (Poland), M. Michalak, G. Wołąkiewicz, L. Kępka PO-0701

POSTER
Clinical track: Lower GI (colon, rectum, anus)

> Phase I trial evaluating panitumumab in combination with chemoradiotherapy for anal cancers
V. Vendrely (France), C. Lemanski, E. Le Prise, E. Maillard, X. Mirabel, G. Lledo, L. Dahan, A. Adenis, G. Paintaud, T. Lecomte, C. Levy-Piedbois, E. Terrebonne, V. Mammar, S. Manfredi, T. Aparicio PO-0702

> Bowel dysfunction resulting from different treatment strategies in patients with rectal cancer.

T. Vuong (Canada), A. Garant, S. Devic, A. Kezouth PO-0703

> Circulating angiogenesis factors predicting poor chemoradiotherapy outcome in rectal cancer
S. Meltzer (Norway), L.G. Lyckander, A.H. Ree, K.R. Redalen PO-0704

> Work ability in Dutch rectal cancer patients during the first year of treatment
A.M. Couwenberg (The Netherlands), M.P.W. Intven, J.P.M. Burbach, L. Hupkens, W.M.U. Van Grevenstein, H.M. Verkooijen PO-0705

> Assessing the impact of sentinel lymph-node and inguinal irradiation in patients with anal cancer
C. Gumina (Italy), N. Slim, G.M. Cattaneo, P. De Nardi, C. Canevari, M. Ronzoni, A. Fasolo, C. Fiorino, L. Perna, A.M. Tamburini, R. Rosati, P. Passoni, N. Di Muzio PO-0706

> Magnetic Resonance Imaging Texture Analysis Parameters for predicting risk of anal vancer recurrence
K. Owczarczyk (UK), D. Prezzi, M. Siddique, J. Stirling, G. Cook, R. Glynne-Jones, A. Gaya, M. Leslie, V. Goh PO-0707

POSTER

Clinical track: Gynaecological (endometrium, cervix, vagina, vulva)

> Patterns of care in the Netherlands for radiotherapy of women with locally advanced cervical cancer
P. De Boer (The Netherlands), I.M. Jürgenliemk-Schulz, W. H., A.C.C. De Leeuw, R. Dávila-Fajardo, C.R.N. Rasch, B.R. Pieters, L.J.A. Stalpers PO-0708

> Disease courses in women with residual tumour after concurrent chemoradiotherapy for cervical cancer
Y.S. Kim (Republic of Korea), S. Byun, J. Nam PO-0709

> Concurrent chemoradiotherapy in locally advanced cancer cervix: Systematic review and meta-analysis
N.R. Datta (Switzerland), E. Stutz, M. Liu, S. Rogers, A. Siebenhüner, D. Klingbiel, S. Singh, S. Bodis PO-0710

> Risk factors for insufficiency fractures in cervix cancer following intensity modulated radiotherapy
A. Ramlov (Denmark), E. Pedersen, L. Røhl, E. Worm, L. Fokdal, J. Lindegaard, K. Tanderup PO-0711

> Benefit of semi-extended field radiotherapy in patients with locally advanced cervical cancer
J. Lee (Taiwan), Y.J. Chen, M.H. Wu, C.L. Chang, T.C. Chen, J.R. Chen, Y.C. Yang **PO-0712**

> Diffusion-weighted MRI for predicting prognosis after radiotherapy in stage IIIB cervical cancer
Y. Watanabe (Japan), N. Ii, T. Kawamura, Y. Toyomasu, T. Takada, H. Tanaka, E. Kondo, T. Tabata, H. Sakuma, Y. Nomoto **PO-0713**

> Toxicity and clinical Ooutcome of IMRT versus conventional radiation therapy for endometrial cancer
L. Vaalavirta (Finland), S. Larjavaara, P. Arponen-Esteves, A. Leminen, J. Collan, M. Harrela, M. Kouri, M. Tenhunen, H. Joensuu **PO-0714**

> A phase II study of chemoradiation with tri-weekly cycles of nedaplatin for uterine cervical cancer.
K. Okuma (Japan), H. Yamashita, R. Kobayashi, K. Nakagawa **PO-0715**

> Pelvic insufficiency fracture after IMRT for gynecologic or anal cancer
L. Bazire, H.P. Xu, M. Amessis, C. Malhaire, K. Cao, A. De La Rochefordière, Y.M. Kirova (France) **PO-0716**

> Role of radiation therapy in vulvar cancer patients with one or more positive inguinal lymph nodes
M.J. Kanis (USA), N. Rydzewski, E.D. Donnelly, J.R. Lurain, J. Strauss **PO-0717**

> 18-FDG PET/CT parameters to predict survival and recurrence in cervical cancer
N. Scher (Switzerland), F. Herrera, A. Depeursinge, T. Breuneval, J. Bourhis, J. Prior, M. Ozsahin, J. Castelli **PO-0718**

> The use of ultrasound bladder scanning in cervical IMRT to reduce variability of uterine motion
S. Otter (UK), M. Hussein, S. Why, A. Franklin, A. Stewart **PO-0719**

> CTV change during adaptive EBRT for cervix cancer: is mid-treatment plan adaptation required?
D.D. Vignarajah (UK), M.C. Marbán, K.T. Bath, P.J. Hoskin **PO-0720**

> Prediction of local recurrence using pretreatment 18FDG PET/CT radiomics features in cervical cancer
F. Lucia (France), M. Desseroit, O. Miranda, D. Visvikis, J. Malhaire, P. Robin, O. Pradier, M. Hatt, U. Schick **PO-0721**

> Symptomatic pelvic insufficiency fracture in women after pelvic RT- is there a dosimetric correlate?
Z. Horne (USA), M. Dohopolsky, S. He, B. Gill, S. Beriwal PO-0722

POSTER
Clinical track: Prostate

> Phase II study with FFF linac-based SBRT in 5 fractions for localized prostate cancer
F. Alongi (Italy), U. Tebano, S. Fersino, A. Fiorentino, R. Mazzola, N. Giaj-Levra, F. Ricchetti, D. Aiello, G. Sicignano, S. Naccarato, R. Ruggieri PO-0723

> Moderate hypofractionated radiotherapy in prostate cancer: a meta-analysis from randomized trials
Z. Yin (China), Z. Yuan, J. You PO-0724

> Sigmoid colon is an important organ at risk for high-grade faecal urgency after pelvic radiotherapy
R. Jadon (UK), P. Parsons, L. Hanna, M. Evans, J. Staffurth PO-0725

> Dose escalation with HDR brachytherapy for intermediate- and high-risk prostate cancer
R. Chicas-Sett (Spain), F. Celada, J. Burgos, D. Farga, M. Perez-Calatayud, S. Roldan, E. Collado, B. Ibañez, J. Perez-Calatayud, A. Tormo PO-0726

> Acute intestinal toxicity after whole-pelvis IMRT for prostate cancer from the patient's perspective
B. Noris Chiorda (Italy), E. Garibaldi, B. Saracino, D. Cante, B. Avuzzi, E. Villa, J.M. Waskiewicz, M. Gaetano, F. Munoz, G. Girelli, C. Sini, T. Rancati, F. Badenchini, C. Bianconi, C. Fiorino, C. Cozzarini PO-0727

> BRCA2 mutation predicts poor survival in prostate cancer: a compelling evidence from 8,988 patients.
M. Cui (China), X.S. Gao, X. Gu, C. Peng, X. Li, M. Ma PO-0728

> Normal tissue complication probability for late urinary toxicities after RT for prostate cancer
F. Palorini (Italy), A. Cicchetti, T. Rancati, C. Cozzarini, B. Avuzzi, C. Degli Esposti, P. Franco, E. Garibaldi, G. Girelli, C. Iotti, V. Vavassori, R. Valdagni, C. Fiorino PO-0729

> The independent benefit deriving from high doses and WPRT in salvage post-prostatectomy radiotherapy
C. Cozzarini, B. Noris Chiorda, C. Fiorino, M. Pasetti (Italy), A. Briganti, C.L. Deantoni, A.M. Deli, A. Fodor, N. Fossati, G. Gandaglia, C. Sini, F. Montorsi, N. Di Muzio PO-0730

> Comparison of two fractionation schemes in prostate cancer patients treated with robotic SBRT
F. Akyol, P. Hurmuz, G. Ozyigit (Turkey) PO-0731

> Toxicity and outcome in moderately hypofractionated radiotherapy for 590 prostate cancer patients
A. Maucieri (Italy), B.A. Jereczek-Fossa, D. Ciardo, C. Fodor, P. Maisonneuve, A. Surgo, S. Volpe, G. Marvaso, A. Vavassori, A. Viola, G. Musi, O. De Cobelli, R. Orecchia PO-0732

> Radium 223: difference in clinical outcomes between young and old
Y.P. Song (UK), T. Ellis, R. Walshaw, J. Logue, O. Parikh, A. Choudhury PO-0733

> The effect of TAB duration and pelvic RT in prostate cancers with gleason score 8-10: TROG study
G. Ozyigit (Turkey), C. Onal, S. Igdem, Z. Arican Alicikus, A. Iribas, M. Akin, D. Yalman, I. Cetin, M.G. Aksu, B. Atalar, F. Dincbas, B. Aydin, F. Sert, C. Yildirim, I.B. Gorken, F.Y. Agaoglu, A.F. Korcum, S. Ozkok, E. Darendeliler, F. Akyol PO-0734

> HDR-brachytherapy or SBRT for extreme hypofractionation in prostate cancer - long-term results
S. Aluwini (The Netherlands), W. Busser, M. Kroon, B. Heijmen PO-0735

> Long term outcomes of IG-IMRT dose-escalation to pelvis and prostate for advanced prostate cancer
H. Lieng (Canada), T. Rosewall, H. Jiang, A. Berlin, R. Bristow, C. Catton, P. Chung, J. Helou, P. Warde, A. Bayley PO-0736

> Elective pelvic radiotherapy in clinically node-negative prostate cancer: a long-term analysis
F. Catucci, C. Masciocchi, A.R. Alitto (Italy), M. Vernaleone, G.C. Mattiucci, V. Frascino, V. Valentini, G. Mantini PO-0737

> PET with 18F-Choline for evaluation of prostate cancer patients with biochemical relapse/persistence

H. Pérez Montero (Spain), M.A. Cabeza, A. Gómez, S.G. Guardado, J.F. Pérez-Regadera PO-0738

> Abstract withdrawn PO-0739

POSTER
Clinical track: Skin cancer / malignant melanoma

> Surgery versus Radiotherapy in Uveal Melanoma: SEER Analysis using Propensity Score Matching and IPTW
B.S. Jang (Republic of Korea), J.H. Chang, S.H. Oh, Y.J. Lim, I.H. Kim PO-0740

> Ipilimumab and stereotactic radiosurgery with cyberknife in melanoma brain metastases
V. Borzillo (Italy), R. Di Franco, S. Falivene, A. Martino, V. Ravo, G. Totaro, F.M. Giugliano, P.A. Ascierto, A.M. Grimaldi, L. Festino, E. Simeone, V. Vanella, F. Cammarota, D. Giannarelli, P. Muto PO-0741

POSTER
Clinical track: Sarcoma

> Target delineation conformity in extremity STS within the UK phase II multi-centre IMRiS trial
H. Yang (UK), R. Simões, F. Le Grange, S. Forsyth, D. Eaton, B. Seddon PO-0742

> Retransplantation of bony autografts sterilized by extracorporal high dose irradiation
L. Saleh-Ebrahimi (Germany), A. Klein, Y. Bakhshai, F. Roeder, A. Baur-Melnyk, T. Knösel, L.H. Lindner, V. Jansson, H.R. Dürr PO-0743

> Brachytherapy and external beam radiation therapy after re-excision surgery in soft tissue sarcomas
A. Cortesi (Italy), A. Arcelli, L. Giaccherini, A. Galuppi, V. Panni, A. Zamagni, S. Bisello, F. Romani, G. Bianchi, S. Campagnoni, M. Gambarotti, G. Ghigi, S. Micheletti, G. Macchia, F. Deodato, S. Cilla, G.P. Frezza, A.G. Morganti, S. Cammelli PO-0744

POSTER

Clinical track: Palliation

> Intrafractional movement of patients with spinal cord compression receiving radiation therapy
E. Ravnkilde (Denmark), I.M. Jakobsen, A. Appelt, J.P. Bangsgaard, L.S. Fog PO-0745

> Inter-observer variation in GTV delineation of bone metastases: a multicenter study
A.S. Gerlich (The Netherlands), J.M. Van der Velden, A.N.T.J. Kotte, C.L. Tseng, G. Fanetti, W.S.C. Eppinga, N. Kasperts, M.P.W. Intven, F.A. Pameijer, M.E.P. Philippens, H.M. Verkooijen, E. Seravalli PO-0746

> Setting defaults in palliative radiation: a value-driven approach to improving care
L. Puckett (USA), L. Lee, I. Zhang, P. Zuvic, P. Gilbo, L. Potters, B. Bloom PO-0747

POSTER

Clinical track: Elderly

> Efficacy of radiotherapy for painful bone metastases in elderly patients
I. Cacicedo (Spain), A. Gomez-Iturriaga, L. Sanchez, A. Navarro, V. Morillo, P. Willisch, C. Carvajal, E. Hortelano, J. Lopez-Guerra, A. Illescas, F. Casquero, O. Del Hoyo, R. Ciervide, L. Martinez-Indart, P. Bilbao PO-0748

> Early impact of pulmonary SBRT on Quality of Life: benefit for patients with low initial QoL/GHS
S. Adebahr (Germany), M. Hechtner, N. Schräder, T. Schimek-Jasch, K. Kaier, V. Duncker- Rohr, F. Momm, J. Gärtner, A.L. Grosu, U. Nestle PO-0749

POSTER

Clinical track: Health services research / health economics

> Failure to publish the results of clinical trials in oncology is skewing our medical practice
P. Gallego (Spain), J. Perez-Alija, E. Ambroa, I. Linares, A. Pedro PO-0750

> Uptake of a novel interactive 3D web-based contouring atlas among the radiation oncology community
E. Gillespie (USA), N. Panjwani, P. Sanghvi, J. Murphy PO-0751

POSTER

Clinical track: Other

> Birth outcomes in female cancer patients received radiotherapy: a nationwide population-based study
W.H. Kao (Taiwan), J.H. Hong, C.C. Wang, Y.J. Chiang, C.F. Kuo PO-0752

> Radiation therapy and outcome in cancer patients with acute venous thromboembolism.
J.B. Guy (France), L. Bertoletti, N. Magné, I. Mahé, C. Font, O. Sanz, J.M. Martín-Antorán, F. Pace, J. Ramón Vela, M. Monreal PO-0753

> ISIORT pooled analysis 2016: characteristics of intraoperative radiotherapy in 11,025 patients
M. Krengli (Italy), F. Calvo, F. Sedlmayer, C. Schumacher, F. Cazzaniga, M. Alessandro, A. De Paoli, E. Russi, M. Kruszyna, R. Corvò, F. Wenz, R. Mazzarotto, F. Fusconi, A. Ciabattoni, R. Weytjens, G. Ivaldi, A. Baldissera, C. Pisani, V. Morillo, M. Osti, N. Bese, G. Catalano, A. Stefanelli, C. Iotti, L. Tomio PO-0754

> Implementation of structural patient reported outcome registration in clinical practice
I. Nijsten - van Riesen (The Netherlands), L. Boersma, M. Brouns, A. Dekker, K. Smits PO-0755

POSTER

Physics track: Basic dosimetry and phantom and detector development

> Characterizing tissue equivalent materials used for an end-to-end QA phantom for MR-guided RT
A. Steinmann (USA), D. Followill PO-0756

> Variation of mean dose output from 204 UK linacs (Jan-June 2015) and its potential clinical impact.
M. Bolt (UK), A. Nisbet, C. Clark, T. Chen, R. Jena PO-0757

> Development of patient-specific phantoms for verification of SBRT planning using 3D printer
C.S. Hong (Republic of Korea), D. Oh, S.G. Ju, M. Kim, B.Y. Koo, H.C. Park, D.H. Choi, H. Pyo PO-0758

> Validation of the influence of M512 substrate resistivity on sensitivity degradation of radiation

N. Stansook (Australia), M. Petasecca, K. Utitsarn, M. Carolan, P. Metcalfe, M.L.F. Lerch, A.B. Rosenfeld PO-0759

> Investigation of PRESAGE formulation on signal quenching in a proton beam
M. Carroll (USA), M. Alqathami, G. Ibbott PO-0760

> Dosimetry with Farmer ionization chambers in magnetic fields: Influence of the sensitive volume
C.K. Spindeldreier (Germany), I. Kawrakow, O. Schrenk, S. Greilich, C.P. Karger, A. Pfaffenberger PO-0761

> Real-time dosimetry with rare earth doped silica
G. Loi, E. D'Agostino (Belgium), I. Veronese, N. Chiodini, A. Vedda PO-0762

> Characterizing the response of Gafchromic EBT3 film in a 1.5 T magnetic field
Y. Roed (USA), H. Lee, L. Pinsky, G. Ibbott PO-0763

> A study of Tandem systems incorporating three thermoluminescent dosimetry materials.
V. Nelson (Australia) PO-0764

> Preparation and Fabrication of a Full-scale Patient-specific 3D-Printed Radiotherapy Phantom
D. Craft (USA), R. Howell PO-0765

> The effect of air gaps on Magic Plate (MP512) for small field dosimetry
K. Utitsarn (Australia), N. Stansook, Z. Alrowaiili, M. Carolan, M. Petasecca, M. Lerch, A. Rosenfeld PO-0766

> Revisiting EPID design for modern radiotherapy requirements
P. Vial (Australia), S. Blake, Z. Cheng, S. Deshpande, S. Atakaramians, M. Lu, S. Meikle, P. Greer, Z. Kuncic PO-0767

> Electron Paramagnetic Resonance signal from a new solid polymer material aimed for 3D dosimetry
M.R. Bernal-Zamorano (Denmark), N.H. Sanders, L. Lindvold, C.E. Andersen PO-0768

> A microDiamond for determination of absorbed dose around high-dose-rate 192Ir brachytherapy sources
V. Kaveckyte, A. Malusek, H. Benmaklouf, G. Alm Carlsson, A. Carlsson Tedgren (Sweden) PO-0769

> The distortions of the dose response functions of dosimeters in the presence of a magnetic field
H.K. Looe (Germany), B. Delfs, D. Harder, B. Poppe PO-0770

> The dose response functions of an air-filled ionization chamber in the presence of a magnetic field
B. Delfs (Germany), D. Harder, B. Poppe, H.K. Looe PO-0771

> Patient-specific realtime error detection for VMAT based on transmission detector measurements
M. Pasler (Germany), K. Michel, L. Marrazzo, M. Obenland, S. Pallotta, H. Wirtz, J. Lutterbach PO-0772

> Three-dimensional radiation dosimetry based on optically-stimulated luminescence
M. Sadel (Denmark), E.M. Høye, P. Skyt, L.P. Muren, J.B.B. Petersen, P. Balling PO-0773

> Investigation of dose-rate dependence at an extensive range for PRESAGE radiochromic dosimeter
E.P. Pappas, E. Zoros, K. Zourari, C.I. Hourdakis, P. Papagiannis, P. Karaiskos, E. Pantelis (Greece) PO-0774

> Contributions to detector response in arbitrary photon fields
S. Wegener (Germany), O.A. Sauer PO-0775

> Thermoluminescence Characteristics of Fabricated Ge Doped Optical Fibre for Radiotherapy Dosimetry
M.S. Ahmad Fadzil (Malaysia), N. Tamchek, N.M. Ung, A. Ariffin, N. Abdullah, D.A. Bradley, N. Mohd Noor PO-0776

> Importance of dosimetry formalism for cells irradiation on a SARRP and consequences for RBE
M. Dos Santos, V. Paget, M. Ben Kacem, F. Trompier, M. Benadjaoud, A. François, O. Guipaud, M. Benderitter, F. Milliat (France) PO-0777

> New Razor silicon diode for Cyber Knife small beam relative dosimetry: a multi-site evaluation
S. Russo (Italy), L. Masi, P.R. Dicarolo, R. Doro, E. De Martin, M.L. Fumagalli, A.S. Martinotti, A. Bergantin, E. Rondi, S. Vigorito, P. Mancosu PO-0778

> New robotic phantom for evaluation of imaging and radiotherapy of moving structures
H. Arenbeck (Germany), L. Eichert, G. Hürtgen, K. Gester, I. Brück, N. Escobar-Corral, M. Fleckenstein, A. Stahl, M.J. Eble PO-0779

> Feasibility study of beam monitoring system using AFCRS for proton pencil beam
I.M. Son (Republic of Korea), M.Y. KIM, M.G. Yoon, D.H. Shin PO-0780

> A characterisation of EBT3 Gafchromic film for relative and absolute dosimetry
I. Billas (UK), H. Bouchard, A. Subiel, I. Silvestre, S. Duane PO-0781

> New liquid ionization chamber detector of high resolution for treatment verification in Radiotherapy
L. Brualla-Gonzalez (Spain), A. Vázquez-Luque, M. Zapata, D.M. González-Castaño, V. Luna-Vega, J. Guiu-Souto, D. Granero, A. Vicedo, M.T. García-Hernández, J. Roselló, M. Pombar, F. Gómez, J. Pardo-Montero PO-0782

> Planverification in Robotic Stereotactic Radiotherapy with the Delta4-Dosimetry-System
W. Baus (Germany), G. Altenstein PO-0783

> Volume correction factors for alanine dosimetry in small MV photon fields
H.L. Riis (Denmark), S.J. Zimmermann, J. Helt-Hansen, C.E. Andersen PO-0784

POSTER

Physics track: Dose measurement and dose calculation

> A pencil beam algorithm for protons including magnetic fields effects
F. Padilla (Austria), H. Fuchs, D. Georg PO-0785

> Energy dependence investigation for detectors used in out-of-filed dosimetry
L. Shields (Ireland), L. Leon-Vintro, B. Mc Clean PO-0786

> A compact and complete model for Bragg peak degradation in lung tissue
R. Dal Bello (Germany), C. Möhler, S. Greilich, O. Jäkel PO-0787

> First assessment of Delivery Analysis tool for pre-treatment verification on the new Radixact system
A. Girardi (Belgium), T. Gevaert, C. Jaudet, M. Boussaer, M. Burghelea, J. Dhont, T. Reynders, K. Tournel, M. De Ridder PO-0788

> Demystifying failed VMAT PSQA measurements with ArcCHECK
P. Kinsella (Ireland), L. Leon-Vintro, B. McClean PO-0789

> *In-vivo* dosimetry for kV radiotherapy: clinical use of micro-silica bead TLD and Gafchromic EBT3 film
A.L. Palmer (UK), S.M. Jafari, J. Mone, S. Muscat PO-0790

> Determination of water mean ionization potential for Geant4 simulations of therapeutical ion beams
A. Perales (Spain), M.A. Cortés-Giraldo, D. Schardt, J.A. Pavón, J.M. Quesada, M.I. Gallardo PO-0791

> Monte-Carlo calculated energy deposition and nanodosimetric quantities around a gold nanoparticle
T. Dressel (Germany), M. Bug, E. Gargioni PO-0792

> Absorbed dose distributions of ruthenium ophthalmic plaques measured in water with radiochromic film
M. Hermida-López (Spain), L. Brualla PO-0793

> Comprehensive quality assurance test for high precision teletherapy
S. Wegener (Germany), A. Spiering, O.A. Sauer PO-0794

> Comparison of Service graph log and Dynamic linac log of Elekta Linacs for patient QA.
M. Kowatsch (Austria), M. Meinschad, G. Leitold, P. Szeverinski, T. Künzler PO-0795

> Optimisation of plan robustness to sinus filling in a magnetic field.
A. Pollitt (UK), R. Chuter, P. Whitehurst, R. MacKay, M. Van Herk, A. McWilliam PO-0796

> Studies on optical fiber dosimeters for *in-vivo* dosimetry in HDR brachytherapy
L. Moutinho (Portugal), H. Freitas, J. Melo, J.F.C.A. Veloso, P.J. Rachinhas, P.C.P.S. Simões, J.A.M. Santos, A. Pereira, J. Silva, S. Pinto PO-0797

> Identification of areas of high-risk skin toxicity in SBRT and IMRT treatments
P. Carrasco de Fez (Spain), M.A. Duch, N. Jornet, M. Lizondo, T. Eudaldo, A. Latorre-Musoll, C. Cases, A. Ruiz, M. Ribas **PO-0798**

> Fast protocol for radiochromic film dosimetry using a cloud computing web application
I.F. Calvo Ortega (Spain), M. Pozo-Massó, S. Moragues-Femenía, J. Casals-Farran **PO-0799**

> Log file based performance characterization of a PBS dose delivery system with dose re-computation
T.T. Böhlen (Austria), R. Dreindl, J. Osorio, G. Kragl, M. Stock **PO-0800**

> Benchmarking Gate/Geant4 for oxygen ion beams against experimental data
A. Resch (Austria), H. Fuchs, D. Georg **PO-0801**

> Experimental validation of single detector proton radiography with scanning beams
C. Chirvase (UK), K. Teo, R. Barlow, E.H. Bentefour **PO-0802**

> CloudMC, a Cloud Computing application for fast Monte Carlo treatment verification
H. Miras (Spain), R. Jiménez, R. Arrans, A. Perales, M. Cortés-Giraldo, A. Ortiz, J. Macías **PO-0803**

> Relative dosimetry evaluation for small multileaf collimator fields on a TrueBeam linear accelerator
T. Younes (France), S. Beilla, L. Simon, G. Fares, L. Vieillevigne **PO-0804**

> Commissioning of the new Monte Carlo algorithm SciMoCa for a VersaHD LINAC
W. Lechner (Austria), H. Fuch, D. Georg **PO-0805**

> Dosimetric end-to-end test procedures using alanine dosimetry in scanned proton beam therapy
A. Carlino (Austria), H. Palmans, G. Kragl, E. Traneus, C. Gouldstone, S. Vatnitsky, M. Stock **PO-0806**

> Practical advantages of a transmission chamber in relative dosimetry of Brainlab conical applicators
B. Tang (China), J. Li, S. Kang, P. WANG, L.C. Orlandini **PO-0807**

> Comparison of multi-institutional QA for VMAT of Nasopharynx with simulated delivery errors
D.I. Thwaites (Australia), E.M. Pogson, S. Arumugam, C.R. Hansen, M. Currie, S. Blake, N. Roberts, M. Carolan, P. Vial, J. Juresic, C. Ochoa, J. Yakobi, A. Haman, A. Trtovac, T. Al-Harthi, L. Holloway PO-0808

> A 3D polymer gel dosimeter coupled to a patient-specific anthropomorphic phantom for proton therapy
M. Hillbrand (Germany), G. Landry, G. Dedes, E.P. Pappas, G. Kalaitzakis, C. Kurz, F. Dörringer, K. Kaiser, M. Würl, F. Englbrecht, O. Dietrich, D. Makris, E. Pappas, K. Parodi PO-0809

> Absolute dose pre-treatment Portal Dosimetry using the Varian MAASTRO implementation
A. Taborda (Portugal), J. Stroom, C. Baltes, A. Seabra, K. Dikaiou, C. Greco PO-0810

> Monte Carlo simulation of peripheral dose for Gamma Knife treatments
B. Sanchez-Nieto (Chile), E. Doerner, A.M. Cardona, F. Bova PO-0811

> Dosimetric impact of using Acuros algorithm for stereotactic lung and spine treatments
L. Vieillevigne (France), T. Younes, A. Tournier, P. Graff Cailleaud, C. Massabeau, J.M. Bachaud, R. Ferrand PO-0812

POSTER

Physics track: Radiation protection, secondary tumour induction and low dose (incl. imaging)

> Cardiac Toxicity after Radiotherapy for Hodgkin Lymphoma: Impact of Breath Hold and Proton Therapy
L.A. Rechner (Denmark), M.V. Maraldo, I.R. Vogelius, P.M. Petersen, R.X. Zhu, B.S. Dabaja, N.P. Brodin, L. Specht, M.C. Aznar PO-0813

> The Influence of scans parameters on effective dose of CBCT scans used for IGRT procedures
A. Abuhaimed (Saudi Arabia), C. J. Martin, M. Sankaralingam PO-0814

> External neutron spectra measurements for a single room compact proton system
R. Howell (USA), E. Klein, S. Price Hedrick, M. Reilly, L. Rankine, E. Burgett PO-0815

POSTER

Physics track: Treatment plan optimisation: algorithms

> LRPM for fast automated high quality treatment planning – towards a novel workflow for clinicians
R. Van Haveren (The Netherlands), B.J.M. Heijmen, W. Ogryczak, S. Breedveld PO-0816

> Anatomical robust optimization to deal with variation in nasal cavity filling during IMPT
S. Van de Water (The Netherlands), F. Albertini, D.C. Weber, B.J.M. Heijmen, M.S. Hoogeman, A.J. Lomax PO-0817

> Improving plan quality and efficiency by automated rectum VMAT treatment planning
G. Wortel (The Netherlands), J. Trinks, D. Eekhout, P. De Ruiter, R. De Graaf, L. Dewit, E. Damen PO-0818

> Robustness evaluation of single- and multifield optimized proton plans for unilateral head and neck
M. Cubillos Mesías (Germany), E.G.C. Troost, S. Appold, M. Krause, C. Richter, K. Stützer, M. Baumann PO-0819

> Full automation of radiation therapy treatment planning
L. Court (USA), R. McCarroll, K. Kisling, L. Zhang, J. Yang, H. Simonds, M. Du Toit, M. Mejia, A. Jhingran, P. Balter, B. Beadle PO-0820

> Automatic re-planning of VMAT plans in prostate and HN patients using constrained optimization
L. Künzel (Germany), O. Dohm, M. Alber, D. Thorwarth PO-0821

> An evolutionary model improvement strategy for knowledge-based planning
Y. Zhang (China), F. Jiang, H. Yue, S. Li, Q. Hu, M. Wang, H. Wu PO-0822

> Hierarchical constrained optimization for automated SBRT paraspinal IMRT planning
M. Zarepisheh (United States Minor Outlying Island), L. Hong, J.G. Mechalakos, M.A. Hunt, G.S. Mageras, J.O. Deasy PO-0823

POSTER

Physics track: Treatment planning: applications

> IMRT dose painting for prostate cancer using PSMA-PET/CT: a planning study based on histology
K. Koubar (Germany), C. Zamboglou, I. Sachpazidis, R. Wiehle, S. Kirste, V. Drendel, M. Mix, F. Schiller, P. Mavroidis, P.T. Meyer, A.L. Grosu, D. Baltas PO-0824

> Multi-scenario sampling in robust proton therapy treatment planning
E. Sterpin (Belgium), A. Barragan, K. Souris, J. Lee PO-0825

> Evaluation of the new InCise MLC for Cyberknife stereotactic radiotherapy
C. Limoges, J. Bellec (France), N. Delaby, M. Perdrieux, F. Jouyaux, E. Nouhaud, I. Lecouillard, E. Chajon, R. De Crevoisier, E. Le Prisé, C. Lafond PO-0826

> Robustness evaluation of head and neck treatment with Proton Pencil Beam Scanning Technique
H. Lin (USA), H. Liu, X. Liang, A. Lin, P. Ahn, H. Zhai, M. Kirk, A. Kassaee, J. McDonough, S. Both PO-0827

> Stereotactic body radiotherapy (SBRT) for localised prostate cancer on the MR-Linac
A. Pathmanathan (UK), A. Mitchell, K. Thomas, D. Henderson, S. Nill, U. Oelfke, R. Huddart, N. Van As, A. Tree PO-0828

> Robustness of IMRT and VMAT for interfraction motion in locoregional breast irradiation
R. Canters (The Netherlands), M. Kunze-Busch, P. Van Kollenburg, M. Kusters, P. Poortmans, R. Monshouwer PO-0829

> Quantification of density and tissue changes in pencil beam scanning proton treatment.
F. Van den Heuvel (UK), F. Fiorini, B. George PO-0830

> Multi isocentric 4-pi volumetric modulated arc therapy approach for head and neck cancer
S. Subramanian (India), S. Chilukuri, V. Subramani, M. Kathirvel, G. Arun, S.T. Swamy, K. Subramanian, A. Fogliata, L. Cozzi PO-0831

> The impact of variable RBE and breathing control in proton radiotherapy of breast cancer
I. Odén (Sweden), K. Eriksson, A.M. Flejmer, A. Dasu, I. Toma-Dasu **PO-0832**

> Reducing small bowel dose for cervical cancer using IMPT and target tailoring in treatment planning
P. De Boer (The Netherlands), A.J.A.J. Van de Schoot, H. Westerveld, M. Smit, M.R. Buist, A. Bel, C.R.N. Rasch, L.J.A. Stalpers **PO-0833**

> Automated planning to reduce integral dose in robotic radiosurgery for benign tumors
L. Rossi (The Netherlands), A. Méndez Romero, M. Milder, E. De Klerck, S. Breedveld, B. Heijmen **PO-0834**

> PTV margin for pelvic lymph nodes in IGRT guided prostate radiotherapy
H.R. Jensen (Denmark), C.R. Hansen, S.N. Agergaard, E.L. Lorenzen, L. Johnsen, S. Hansen, L. Dysager, C. Brink **PO-0835**

> Impact of Deep Inspiration Breath Hold on Left Anterior Coronary dose in left breast irradiation.
F. Azoury (Lebanon), S. Achkar, N. Farah, D. Nasr, C. El Khoury, N. Khater, J. Barouky, R. Sayah, E. Nasr **PO-0836**

> Dosimetric advantages afforded by Dynamic WaveArc therapy accelerated partial breast irradiation
Y. Ono (Japan), M. Yoshimura, K. Hirata, N. Mukumoto, T. Ono, M. Inoue, M. Ogura, T. Mizowaki, M. Hiraoka **PO-0837**

> Treatment planning for the MR-linac: plan quality compared with current clinical practice
A.J.A.J. Van de Schoot (The Netherlands), C. Carbaat, B. Van Triest, T.M. Janssen, J.J. Sonke **PO-0838**

> Personalized VMAT optimization for pancreatic SBRT
I. Mihaylov (USA), L. Portelance **PO-0839**

> Hypofractionated intensity modulated radiotherapy in patients with immediate breast reconstruction
D.P. Rojas (Italy), R. Ricotti, M.C. Leonardi, A. Viola, S. Dicuonzo, D. Ciardo, R. Cambria, R. Luraschi, F. Cattani, C. Fodor, A. Morra, V. Dell'Acqua, V. Galimberti, R. Orecchia, B.A. Jereczek-Fossa **PO-0840**

> Feasibility of dose decrease in a rectal sub-region predictive of bleeding in prostate radiotherapy
C. Lafond (France), J. N'Guessan, G. Dréan, N. Perichon, N. Delaby, O. Acosta, A. Simon, R. De Crevoisier PO-0841

> Choosing the best heart sparing technique for breast and internal mammary chain radiotherapy
A. Ranger (UK), A. Dunlop, K. Hutchinson, M. Maclennan, H. Convery, H. Chantler, C. Rose, N. Twyman, E. Donovan, E. Harris, C. Coles, A. Kirby PO-0842

> Volumetric-modulated Dynamic WaveArc therapy reduces the doses to the hippocampus
M. Uto (Japan), T. Mizowaki, K. Ogura, Y. Miyabe, M. Nakamura, N. Mukumoto, H. Hirashima, M. Hiraoka PO-0843

> Dosimetric evaluation of MLC and Fixed Cone for patients in the Prone Position with CyberKnife
S.K. Ahn (Republic of Korea), J.H. Cho, K.C. Keum PO-0844

> Automatic treatment planning of FFF VMAT for breast cancer: fast planning and fast treatment
E.L. Lorenzen (Denmark), K.L. Gottlieb, C.R. Hansen, H.R. Jensen, J.D. Jensen, M.H. Nielsen, M. Ewertz PO-0845

POSTER
Physics track: (Radio)biological modelling

> Bowel dose-volume relationship for patient-reported acute intestinal toxicity from pelvic IMRT
C. Sini (Italy), B. Noris Chiorda, P. Gabriele, G. Sanguineti, S. Morlino, F. Badenchini, D. Cante, V. Carillo, M. Gaetano, T. Giandini, V. Landoni, A. Maggio, L. Perna, E. Petrucci, V. Sacco, R. Valdagni, T. Rancati, C. Fiorino, C. Cozzarini PO-0846

> The dose-response curve of post-treatment FDG-uptake in lung tissue of irradiated NSCLC patients
M. La Fontaine (The Netherlands), W.V. Vogel, G. Persson, G. Westman, B. Reymen, D. De Ruysscher, J.S. Belderbos, J.J. Sonke PO-0847

> Predictors of patient-reported incontinence after prostate cancer RT: results from a cohort study

C. Cozzarini (Italy), N. Bedini, E. Garibaldi, D. Balestrini, P. Franco, G. Girelli, I. Improta, F. Palorini, V. Vavassori, T. Rancati, R. Valdagni, C. Fiorino PO-0848

> Trismus after chemoradiation in head and neck cancer: relation with medial pterygoid and masseter dose
O. Hamming-Vrieze (The Netherlands), S. Kraaijenga, S. Verheijen, M. Jonker, L. Van der Molen, J. Van de Kamer, M. Van de Brekel, W. Heemsbergen PO-0849

> Predicting late fecal incontinence risk after RT for prostate cancer:external independent validation
A. Cicchetti (Italy), B. Avuzzi, T. Rancati, F. Palorini, C. Stucchi, G. Fellin, P. Gabriele, V. Vavassori, C. Degli Esposti, C. Cozzarini, C. Fiorino, R. Valdagni PO-0850

> Artificial neural networks for toxicity prediction in RT: a method to validate their "intelligence"
E. Massari (Italy), T. Rancati, T. Giandini, A. Cicchetti, V. Vavassori, G. Fellin, B. Avuzzi, C. Cozzarini, C. Fiorino, R. Valdagni, M. Carrara PO-0851

> External validation of a TCP model predicting PSA relapse after post-prostatectomy Radiotherapy
S. Broggi (Italy), A. Galla, B. Saracino, A. Faiella, N. Fossati, D. Gabriele, P. Gabriele, A. Maggio, G. Sanguineti, N. Di Muzio, A. Briganti, C. Cozzarini, C. Fiorino PO-0852

> A method for automatic selection of parameters in NTCP modelling
D. Christophides (UK), A.L. Appelt, J. Lilley, D. Sebag-Montefiore PO-0853

> Is radiation-induced trismus a time dependent masticatory structure story?
M. Thor (USA), C. Olsson, J. Oh, N. Pauli, N. Pettersson, C. Finizia, J. Deasy PO-0854

> Use of the LKB model to fit urethral strictures for prostate patients treated with HDRB
V. Panettieri (Australia), E. Onjukka, T. Rancati, R. Smith, J. Millar PO-0855

POSTER

Physics track: Intra-fraction motion management

> Systematic baseline shifts of lymph node targets between setup and treatment of lung cancer patients
M.L. Schmidt (Denmark), L. Hoffmann, M.M. Knap, T.R. Rasmussen, B.H. Folkersen, D.S. Møller, B. Helbo, P.R. Poulsen PO-0856

> Analysis of Intrafraction Motion in Image-Guided Stereotactic Radiosurgery of Spinal metastases
I.G. Svestad (Norway) PO-0857

> Intra-fraction motion quantification of head-and-neck tumors using dynamic MRI
T. Bruijnen (The Netherlands), R.H.N. Tijssen, M.E.P. Philippens, C.H.J. Terhaard, T. Schakel, J.J.W. Lagendijk, C.P.J. Raaijmakers, B. Stemkens PO-0858

> Impact of 4DCBCT reconstruction algorithm and surrogate on motion representation
E. Steiner (Australia), C.C. Shieh, V. Caillet, N. Hardcastle, C. Haddad, T. Eade, J. Booth, P. Keall PO-0859

> Characterization of a novel liquid fiducial marker for organ motion monitoring in prostate SBRT
R. De Roover (Belgium), W. Crijns, K. Poels, R. Peeters, K. Haustermans, T. Depuydt PO-0860

> Geometric validation of a 4D-MRI guided correction strategy on the MR-Linac
T. Van de Lindt (The Netherlands), R. Koopman, A. Van de Schoot, I. Torres-Xirau, U. Van der Heide, J.J. Sonke PO-0861

> Correlation of Liver and Pancreas Tumor motion with Normal Anatomical Structures
R. Kaderka (USA), A. Paravati, R. Sarkar, J. Tran, K. Fero, N. Panjwani, D. Simpson, J. Murphy, T. Atwood PO-0862

> Suggestion of optimal planning target volume margins for stereotactic body radiotherapy of the spine
S.H. Jeon (Republic of Korea), S.Y. Park, J.H. Kim, J.I. Kim, J.M. Park PO-0863

> Accuracy of fiducial based correction of target motion in prostate SBRT treatments
T. Viren (Finland), M. Korhonen, J. Seppälä PO-0864

> Commissioning and clinical implementation of intra-fractional 4D-CBCT imaging for lung SBRT
R. Sims (New Zealand) PO-0865

POSTER

Physics track: Inter-fraction motion management (excl. adaptive radiotherapy)

> Visibility, image artifacts and proton dose perturbation of fiducial markers
V.C. Hamming (The Netherlands), C.L. Brouwer, M.J. Van Goethem, R.I. Jolck, C. Van Leijsen, A.C.M. Van den Bergh PO-0866

> Magnitude and robustness of motion mitigation in stereotactic body radiation therapy of the liver
C. Heinz (Germany), S. Gerum, F. Kamp, M. Reiner, F. Roeder PO-0867

> Evaluation of Watchdog response to anatomical changes during head and neck IMRT treatment
T. Fuangrod, J. Simpson (Australia), S. Bhatia, S. Lim, M. Lovelock, P. Greer PO-0868

> A population-based estimate of proton beam specific range uncertainties in the thorax
Y.Z. Szeto (The Netherlands), M.G. Witte, M. Van Herk, J. Sonke PO-0869

> DIBH produces a meaningful reduction in lung dose for some women with right-sided breast cancer
J.L. Conway (Canada), L. Conroy, L. Harper, M. Scheifele, W. Smith, T. Graham, T. Phan, H. Li, I.A. Olivotto PO-0870

> Study of the effect of heterogeneous setup random errors in treatment margins
D. Sevillano (Spain), A.B. Capuz Suárez, R. Colmenares Fernández, R. Morís Pablos, M.J. Bejar Navarro, D. Prieto Moran, F. García-Vicente PO-0871

> Respiration motion management strategy for sparing of risk organs in esophagus cancer radiotherapy

S.B.N. Biancardo (Denmark), J.C. Costa, K.F. Hofland, T.S. Johansen, M. Josipovic PO-0872

> Inter- and intra-fraction motion of the tumor bed and organs at risk during IGRT for Wilms' tumor
F. Guerreiro (The Netherlands), E. Seravalli, G. Jansses, M. Heuvel-Eibrink, B. Raaymakers PO-0873

> The impact of rectal filing on rectal tumor position
J.J.E. Kleijnen (The Netherlands), M. Intven, B. Van Asselen, A.M. Couwenberg, J.J.W. Lagendijk, B.W. Raaymakers PO-0874

POSTER

Physics track: Adaptive radiotherapy for inter-fraction motion management

> Dosimetric effects of anatomical changes in proton therapy of head and neck (H&N) cancer
G. Miori (Italy), L. WIdesott, F. Fracchiolla, S. Lorentini, P. Farace, R. Righetto, C. Algranati, M. Schwarz PO-0875

> Treatment adaptation is mandatory for intensity modulated proton therapy of advanced lung cancer
L. Hoffmann (Denmark), M. Alber, M. Jensen, M. Holt, D. Møller PO-0876

> Proton therapy of oesophageal cancer is more robust against anatomical changes than photons
D.S. Møller (Denmark), M. Alber, T.B. Nyeng, M. Nordsmark, L. Hoffmann PO-0877

> Plan adaptation on the MR-Linac: first dosimetric validation of a simple dose shift
R. Koopman (The Netherlands), A.J.A.J. Van de Schoot, J. Kaas, T. Perik, T.M. Janssen, U.A. Van der Heide, J.J. Sonke PO-0878

> Differences between planned and delivered maximum spinal cord dose in Head and Neck cancer patients
D. Noble (UK), P. Yeap, K. Harrison, S. Thomas, M. Parker, N. Burnet PO-0879

> Using accumulated delivered dose to predict rectal toxicity in prostate radiotherapy

L.E.A. Shelley (UK), J.E. Scaife, A.M. Bates, J.R. Forman, K. Harrison, R. Jena, D.J. Noble, M.A. Parker, M.R. Romanchikova, M.P.F. Sutcliffe, S.J. Thomas, N.G. Burnet PO-0880

POSTER

Physics track: CT Imaging for treatment preparation

> 4DMRI for RT planning; novel precise amplitude binning in the presence of irregular breathing
I. Bones (The Netherlands), O.J. Gurney-Champion, A. Van der Horst, A. Bel, T. Alderliesten, G. Van Tienhoven, K. Ziemons, Z. Van Kesteren PO-0881

> Proxy-free slow-pitch helical 4DCT reconstruction
R. Werner (Germany), C. Hofmann, T. Gauer PO-0882

> Clinical Implementation Model-Based CT to Replace 4DCT for Lung Cancer Treatment Planning
D. Low (USA), D. O'Connell, L. Yang, J. Lewis, P. Lee PO-0883

> Availability of MRI improves interobserver variation in CT-based pancreatic tumor delineation
O.J. Gurney-Champion (The Netherlands), E. Versteijne, A. Van der Horst, E. Lens, H. Rütten, H.D. Heerkens, G.M.R.M. Paardekooper, M. Berbee, C.R.N. Rasch, J. Stoker, M.R.W. Engelbrecht, M. Van Herk, A.J. Nederveen, R. Klaassen, H.W.M. Van Laarhoven, G. Van Tienhoven, A. Bel PO-0884

POSTER

Physics track: (Quantitative) functional and biological imaging

> Assess Tumor Voxel Dose Response (SF2) Using Multiple FDG PET Images
D. Yan (USA), S. Chen, D. Krauss, P. Chen, G. Wilson PO-0885

> Early changes of FDG-PET markers predict the outcome after chemo-radiotherapy for pancreatic cancer
S. Broggi, P. Passoni, E.G. Vanoli, C. Fiorino, G.M. Cattaneo (Italy), C. Gumina, P. Mapelli, E. Incerti, L. Gianolli, N. Slim, M. Picchio, R. Calandrino, N.G. Di Muzio PO-0886

> Experimental validation of a 3D model to simulate FMISO spatial retention in HNSCC tumor xenografts

L.J.M. Wack (Germany), A. Menegakis, R. Winter, S. Boeke, K. Trautmann, A. Leun, M. Krueger, B. Pichler, D. Mönnich, D. Zips, D. Thorwarth PO-0887

> Response monitoring by 18FDG-PET in locally advanced NSCLC treated with concurrent chemoradiotherapy
J.N.A. Van Diessen (The Netherlands), M. La Fontaine, M. Van den Heuvel, W. Vogel, J.S.A. Belderbos, J.J. Sonke PO-0888

> FLT PET kinetic analysis biomarkers of resistance to radiotherapy for nasal tumours in canines
U. Simoncic (Slovenia), T.J. Bradshaw, L. Kubicek, L.J. Forrest, R. Jeraj PO-0889

> PET-based radiobiological modeling of changes in tumor hypoxia during chemoradiotherapy
M. Crispin Ortuzar (USA), M. Grkovski, B.J. Beattie, N.Y. Lee, N. Riaz, J.L. Humm, J. Jeong, A. Fontanella, J.O. Deasy PO-0890

> Quality assessment of target volume delineation and dose planning in the Skagen Trial 1
G. Francolini (Italy), M. Thomsen, E. Yates, C. Kirkove, I. Jensen, E. Blix, C. Kamby, M. Nielsen, M. Krause, M. Berg, I. Mjaaland, A. Schreiber, U. Kasti, K. Boye, B. Offersen PO-0891

POSTER

Physics track: Images and analyses

> Automatic quality assurance of rectal contours on image guidance scans
M. Romanchikova (UK), D.I. Johnston, M.P.F. Sutcliffe, K. Harrison, S.J. Thomas, J.E. Scaife, N.G. Burnet PO-0892

> Improving CBCT image quality for daily image guidance of patients with head/neck and prostate cancer
I. Chetty (USA), P. Paysan, F. Siddiqui, M. Weihua, M. Brehm, P. Messmer, A. Maslowski, A. Wang, D. Seghers, P. Munro PO-0893

> Comparing the spatial integrity of 7T and 3T MR images for image-guided radiotherapy of brain tumors
I. Peerlings (The Netherlands), I. Compter, F.M. Janssen, C.J. Wiggins, F.M. Mottaghy, P. Lambin, A.L. Hoffmann PO-0894

> MRI-based analysis of volumetric changes of healthy brain tissue in glioma patients after photon RT
A. Gommlich (Germany), H. Wahl, F. Raschke, M. Baumann, M. Krause, E.G.C. Troost PO-0895

> Quantitative MRI-based characterization of obturator muscles after prostate cancer radiotherapy
E. Scalco (Italy), I. Pirovano, T. Rancati, A. Cicchetti, F. Palorini, B. Avuzzi, A. Messina, R. Valdagni, (3), (5), G. Rizzo PO-0896

> Atlas-based auto-segmentation of heart structures in breast cancer patients
R. Kaderka (USA), R. Mundt, A. Bryant, E. Gillespie, B. Eastman, T. Atwood, J. Murphy PO-0897

> Automated segmentation for breast cancer radiation therapy based on the ESTRO delineation guideline.
A.R. Eldesoky (Denmark), E.S. Yates, T.B. Nyeng, M.S. Thomsen, H.M. Nielsen, P. Poortmans, C. Kirkove, M. Krause, C. Kamby, I. Mjaaland, E.S. Blix, I. Jensen, M. Berg, E.L. Lorenzen, Z. Taheri-Kadkhoda, B.V. Offersen PO-0898

> Tumor volume delineation using non-EPI diffusion weighted MRI and FDG-PET in head-and-neck patients.
B. Peltenburg, T. Schakel (The Netherlands), J.W. Dankbaar, M. Aristophanous, C.H.J. Terhaard, J.M. Hoogduin, M.E.P. Philippens PO-0899

> Quantifying the Effect of MRI Geometrical Distortions on Radiotherapy Treatment Planning Doses.
M. Adjeiwaah (Sweden), M. Bylund, J. Lundman, J. Jonsson, T. Nyholm PO-0900

> Is MRI in immobilization mask necessary for brain metastasis patients?
A. Van Lier (The Netherlands), A. De Boer, M. Kramer, G. Fanetti, W. Eppinga, J.J.C. Verhoeff, M. Philippens, E. Seravalli PO-0901

> Identifying the dominant prostate cancer focal lesion using 3D image texture analysis
D. Montgomery, K. Cheng, Y. Feng, D.B. McLaren, S. McLaughlin, W. Nailon (UK) PO-0902

> Patient-induced susceptibility effects simulation in magnetic resonance imaging
J.A. Lundman, M. Bylund (Sweden), A. Garpebring, C. Thellenberg Karlsson, T. Nyholm PO-0903

> Development of an MRI-protocol for radiotherapy treatment guidance in gastric cancer
V.W.J. Van Pelt (The Netherlands), M.F. Kruis, T. Van de Lindt, L.C. Ter Beek, M. Verheij, U.A. Van der Heide PO-0904

> (Semi-)Automatic contouring strategies for rectal boost treatment on the MR-Linac
C.N. Nomden (The Netherlands), M.P.W. Intven, A.N.T.J. Kotte, I.H. Kiekebosch, S. Mook, I.M. Jürgenliemk-Schulz, G.G. Sikkes, L.T.C. Meijers, E.N. De Groot, G.H. Bol, B. Van Asselen, L.G.W. Kerkmeijer, B.W. Raaymakers PO-0905

> Textural analysis of MR images to improve the characterisation of recurrent prostate cancer
I. Stirling (UK), R. Alonzi, P.J. Hoskin, N.J. Taylor, W.L. Wong, A.R. Padhani, B. Sanghera PO-0906

POSTER

Physics track: Implementation of new technology, techniques, clinical protocols or trials (including QA and audit)

> Remote auditing of IMRT/VMAT deliveries
N. Miri (Australia), K. Legge, J. Lehmann, P. Vial, B. Zwan, P. Greer PO-0907

> Application of Failure Mode and Effects Analysis to linac quality controls: advantages and limits
F. Bonfantini (Italy), T. Giandini, S. Meroni, C. Stucchi, M. Carrara, V. Mongioj, I. Veronese, E. Pignoli PO-0908

> QA test of MLC speed using a fluorescent screen-CCD based dosimetry system
B. Yang (Hong Kong SAR China), T.L. Chiu, C.W. Cheung, H. Geng, W.W. Lam, K.Y. Cheung, S.K. Yu PO-0909

> Is Linac-Based Total Body Irradiation (TBI) on the coach by VMAT Feasable?
B. Tas (Turkey), I.F. Durmus, A. Okumus, O.E. Uzel PO-0910

> Can the therapeutic benefits of microbeam radiation therapy be achieved using a clinical linac?
N. Suchowerska (Australia), V. Peng, L. Rogers, E. Claridge-Mackonis, D.R. McKenzie PO-0911

> Short- and long term stability of the isocenter of a three-source Co60 MR guided radiotherapy device
D. Hoffmans (The Netherlands), M.A. Palacios, J.P. Cuijpers PO-0912

> A national review of equipment, techniques and PTV margins used for SRS
R. Patel (UK), J. Lee, C. Walker, D.J. Eaton PO-0913

> Helium Beam Radiography System based on pixelized semiconductor detectors
T. Gehrke, G. Arico, S. Berke, J. Jakubek, M. Martisikova (Germany) PO-0914

> Performance study of a prototype straight-through linac delivery system with an EPID assembly
R. Scheuermann (USA), C. Kennedy, D. Mihailidis, J. Metz PO-0915

> Feasibility and potential for treating locally advanced non-small cell lung cancer with a MR-linac
M.J. Menten, H. Bainbridge (UK), M.F. Fast, S. Nill, F. McDonald, U. Oelfke PO-0916

> Nationwide audit of small fields output calculations in Poland
W. Bulski (Poland), K. Chelminski PO-0917

> Radiotherapy and Her2 targeting agents: synergism and antagonism in clonogenic and confluence assays
N. Suchowerska (Australia), J. Toohey, S. Carroll, L. Rogers, G. Lyons, J. Beith, A. Dos Santos Esteves, D.R. McKenzie PO-0918

> Stereotactic radiotherapy for brain metastases : Cyberknife versus VersaHD / ExacTrac
M. Perdrieux (France), M. Celeste, I. Lecouillard, E. Nouhaud, C. Blay, F. Jouyaux, N. Delaby, J. Bellec, C. Lafond PO-0919

> Utilizing monte carlo for log file-based delivery QA
C. Stanhope (USA), D. Drake, M. Alber, M. Sohn, J. Liang, C. Habib, D. Yan PO-0920

> Dose considerations of IGRT using MV projection and MV CBCT on a prototype linear accelerator
P. Balter (USA), T. Netherton, Y. Li, P. Nitsch, S. Gao, M. Muruganandham, S. Shaitelman-, S. Frank, S. Hahn, A. Klopp, L. Court PO-0921

POSTER

Brachytherapy: Breast

> Late toxicity and cosmetic outcome following APBI using interstitial multicatheter HDR brachytherapy
T. Soror (Egypt), G. Kovács, N. Seibold, C. Melchert, K. Baumann, E. Wenzel, S. Stojanovic-Rundic PO-0922

> Does catheter entry-exit dosimetry correlate with grade of skin marks after breast brachytherapy?
T. Wadasadawala (India), R. Krishnamurthy, U. Gayake, R. Phurailatpam, S. Paul, R. Sarin PO-0923

> HDR boost IN cT3 breast carcinoma with neoadjuvant chemotherapy and conserving therapy
F. Romero (Spain), J. Guinot, M. Santos, M. Tortajada, P. Santamaría, L. Oliver, V. Campo, L. Arribas PO-0924

> Timing of post-implant analysis in permanent breast seed implant: results from a serial CT study
E. Watt (Canada), M. Peacock, L. Conroy, S. Husain, A. Frederick, M. Roumeliotis, T. Meyer PO-0925

POSTER

Brachytherapy: Prostate

> Interstitial HDR prostate brachytherapy: comparison of pre- and post-implant dose distribution.
S. Novikov (Russian Federation), S. Kanaev, N. Ilin, R. Novikov, M. Girshovich PO-0926

> Plug-free needles provide dosimetric advantages over plugged needles in I-125 prostate brachytherapy
A.B. Mohamed Yoosuf (UK), L. Sarri, M. Byrne, G. Workman, D. Mitchell, S. Jain PO-0927

> Androgen deprivation therapy influences PSA bounce rate after brachytherapy
W. Burchardt (Poland), M. Kanikowski, J. Skowronek PO-0928

> Needle Migration in HDR Brachytherapy for Prostate Cancer evaluated by Serial MRI and Photos

S. Buus (Denmark), M. Lizondo, S. Hokland, S. Rylander, E. Pedersen, L. Bentzen, K. Tanderup PO-0929

> CT to TRUS based Prostate HDR: what is the optimal dosimetric margin to use?
F. Lacroix (Canada), M. Lavallée, E. Vigneault, W. Foster, A.G. Martin PO-0930

> Clinical outcome and quality of life after MRI-guided HDR boost for prostate cancer.
F. Lakosi (Hungary), A. Miovecz, G. Antal, J. Pall, D. Nagy, M. Csima, J. Hadjiev, I. Repa, G. Toller PO-0931

> Prostate-specific Antigen bounce in patients treated with 125I prostate brachytherapy: Keep calm
A. Pires (Portugal), D. Moreira, C. Castro, A. Oliveira, J. Oliveira, L. Trigo PO-0932

POSTER
Brachytherapy: Gynaecolgy

> Urethral dose in cervical image guided brachytherapy
K. MacLennan (UK), M. Zahra, W. Keough PO-0933

> Brachytherapy as part of the conservative treatment for primary and recurrent vulvar carcinoma
C. Chargari, P. Castelnau-Marchand (France), A. Escande, I. Dumas, R. Mazeron, P. Maroun, E. Bentivegna, S. Gouy, A. Cavalcanti, P. Morice, C. Haie-Meder PO-0934

> Modeling to compensate for intra-fractional bladder dose variations in gynecological brachytherapy
Z. Siavashpour (Islamic Republic of Iran), R. Jaberi, M.R. Aghamiri, C. Kirisits PO-0935

> Dose effects of draining rectal gas in image-guided brachytherapy for gynecological cancer
H. Takase (Japan), N. Ii, Y. Yamao, T. Kawamura, M. Naito, Y. Watanabe, Y. Toyomasu, A. Takada, H. Tanaka, T. Yamada, H. Maki, H. Sakuma, Y. Nomoto PO-0936

> HDR image-guided interstitial brachytherapy for postoperative local recurrent uterine cancer
K. Yoshida (Japan), H. Yamazaki, T. Takenaka, T. Kotsuma, K. Masui,

T. Komori, T. Shimbo, N. Yoshikawa, H. Yoshioka, Y. Uesugi, T. Hamada, M. Nakata, H. Matsutani, M.M. Ueda, Y. Tsujimoto, E. Tanaka, Y. Narumi PO-0937

> Should we use point A dose for image-guided adaptive brachytherapy reporting in cervix cancer?
R. Mazeron (France), I. Dumas, A. Escande, W. Bacorro, R. Sun, C. Haie-Meder, C. Chargari PO-0938

> Comparison of brachytherapy sources of endometrial cancer: Electronic brachytherapy source and 192Ir
S. Lozares (Spain), J.A. Font Gómez, A. Gandía Martínez, A. Miranda Burgos, A. Méndez Villamón PO-0939

> 3D mapping for precise definition of GTV, CTV and their correlation in cervix cancer BT (EMBRACE)
S. Banerjee (India), R. Pötter, C. Kirisits, K. Majercakova, M.P. Schmid, S.K. Shrivastava, U. Mahantshetty PO-0940

> Verifying the treatment planning system in individualized HDR brachytherapy of cervical cancer
M. Van den Bosch (The Netherlands), B. Vanneste, R. Voncken, L. Lutgens PO-0941

POSTER
Brachytherapy: Physics

> Real time *in vivo* dosimetry for cervix HDR brachytherapy - feasibility study using a MOSFET
J. Mason (UK), P. Bownes PO-0942

> Evaluation of a recent *in vivo* dosimetry methodology for HDR prostate BT using MOSFET detectors
R. Fabregat Borrás (Spain), S. Ruiz-Arrebola, E. Rodriguez Serafín, M. Fernández Montes, A. García Blanco, J. Cardenal Carro, J.T. Anchuelo Latorre, M. Ferri Molina, A. Kannemann, D. Guirado, P.J. Prada PO-0943

> Dosimetric influence produced by the presence of an air gap between the skin and the Freiburg Flap
M. Fernandez Montes (Spain), S. Ruíz Arrebola, R. Fabregat Borrás, E. Rodríguez Serafín, J.A. Vázquez Rodríguez, M.T. Pacheco Baldor, N. Ferreiros Vázquez, M.A. Mendiguren Santiago, J.I. Raba Díez, M.M. Fernández Macho, J.T. Anchuelo Latorre, M. Ferri Molina,

A. García Blanco, I. Díaz de Cerio, M.A. Cobo Belmonte, A. Kannemann, J. Andreescu Yagüe, A. Arangüena Peñacoba, A. Sierrasesumaga Martín, D. Guirado llorente, I. Bernat Piña, P.J. Prada Gómez PO-0944

> Pretreatment verification for brachytherapy
G. Fonseca (The Netherlands), M. Podesta, M. Bellezzo, B. Reniers, F. Verhaegen PO-0945

> Entropic model for real-time dose calculation: I-125 prostate brachytherapy application.
G. Birindelli (France), J.L. Feugeas, B. Dubroca, J. Caron, J. Page, T. Pichard, V. Tikhonchuk, P. Nicolaï PO-0946

> Image-guided brachytherapy with 106Ru eye plaques for uveal melanomas using post implantation MRI
G. Heilemann (Austria), N. Nesvacil, M. Blaickner, L. Fetty, R. Dunavoelgyi, D. Georg PO-0947

POSTER
Brachytherapy: Miscellaneous

> Role of HDR Intraluminal Brachytherapy in carcinoma Esophagus: An institutional experience.
P.B. Kainthaje (India), P. Gaur, A. Malavat, R. Paliwal, V. Sehra PO-0948

> Evaluation of role of Interstitial Brachytherapy in Soft Tissue Sarcoma: Single institute experience
V. Pareek (India) PO-0949

> High-dose-rate brachytherapy treatment in T1-T2 stage non-melanoma skin cancer patients.
M.A. González Ruiz (Spain), J. Quirós Rivero, M.F. Ropero Carmona, A. Ruiz Herrero, M.C. Cruz Muñoz, P. Simón Silva, J.J. Cabrera Rodríguez, J.L. Muñoz García, Y. Ríos Kavadoy, F. García Urra, P. Almendras Manzano PO-0950

> Episcleral Brachytherapy for Uveal Melanoma
A. Ponte (Portugal), T. Teixeira, I. Nobre-Góis, J. Casalta-Lopes, P.C. Simões, A. Cavaco, J. Veríssimo, R. Proença, M. Borrego PO-0951

POSTER

Radiobiology track: Normal tissue biology of the heart

> Integral heart dose and lymphocytopaenia in lung cancer patients treated with radical radiotherapy
N. Joseph, A. McWilliam, K. Haslett, J. Kennedy, C. Faivre-Finn, A. Choudhury (UK) PO-0952

POSTER

Radiobiology track: Radiobiology of the intestinal track

> Proteome profiles in PDAC patients with local recurrence after postoperative radiochemotherapy
L. Bolm (Germany), V. Oria, L. Kaesmann, P. Bronsert, U.F. Wellner, O. Schilling, D. Rades PO-0953

> A model to study long-term impact of radiation towards the colorectal area
F. Sjöberg (Sweden), D. Malipatlolla, G. Steineck, C. Bull PO-0954

> Co-treatment of MSC and vascular permeability inhibitor reduces radiation side effects on the colon
V. Monceau (France), C. Demarquay, A. Accarie, L. Moussa, B. Doix, M. Benderitter, A. Sémont, N. Mathieu PO-0955

POSTER

Radiobiology track: Normal tissue radiobiology (others)

> Prediction of irradiated cells fate: the necessity to revisit RBE by multi-parametric investigations
V. Paget (France), M. Ben Kacem, M. Dos Dantos, F. Soysouvanh, M. Benadjaoud, A. Francois, O. Guipaud, F. Milliat PO-0956

> Radiobiological studies in *in vitro* reconstituted squamous epithelia
G. Zemora (Austria), W. Dörr PO-0957

> Radiogenomics: role of non-coding RNA genes in increased radiotherapy sensitivity
L. Duran-Lozano (Spain), V. Reyes, M. Mollà, M.J. Fuentes-Raspall, M. Altabas, T. Ramón y Cajal, A. Barnadas, O. Diez, J. Giralt, S. Gutiérrez-Enríquez PO-0958

> REQUITE: Radiation Induced Lymphocyte Apoptosis assay as a predictor for radiotherapy side effects
C. Talbot (UK), A. Appanvel, A. Botma, T. Rancati, A. Webb, D. Azria, T. Burr, J. Chang-Claude, C. Herskind, D. De Ruysscher, R. Elliott, S. Gutiérrez Enríquez, P. Lambin, B. Rosenstein, T. Rattay, A. Vega, F. Wenz, R. Valdagni, C. West PO-0959

POSTER

Radiobiology track: Radiobiology of proton and heavy ions

> Radiobiological effectiveness and its role in modelling secondary cancer risk for proton therapy
A. Madkhali (UK), C. Timlin, M. Partridge PO-0960

> DNA damage and repair influence tumor sensitivity to diffusing alpha emitters radiation therapy
Y. Keisari (Israel), R. Etzyoni, H. Bittan, E. Lazarov, M. Efrati, M. Schmidt, T. Cooks, L. Arazi, I. Kelson PO-0961

> Proton minibeam irradiation leads to reduced acute side effects in an *in-vivo* mouse ear model
E. Zahnbrecher (Germany), M. Sammer, J. Reindl, C. Greubel, B. Schwarz, C. Siebenwirth, D.W.M. Walsh, K. Ilicic, J.J. Wilkens, S.E. Combs, G. Dollinger, T.E. Schmid PO-0962

> RBE variations along the Bragg curve of a 200 MeV proton beam
C. Vandevoorde (South Africa), A. Baeyens, A. Vral, J. Slabbert PO-0963

POSTER

Radiobiology track: Radiobiology of head and neck cancer

> Biomarkers in wound drainage fluids affect response to radiations of head and neck cancer cells
M. Mangoni (Italy), M. Sottili, T. Gualtieri, A. Javarone, M. Loi, I. Meattini, P. Bonomo, I. Desideri, A. Deganello, L. Livi PO-0964

> Imaging of the hypoxia related marker Carbonic Anhydrase IX in human head and neck cancer xenografts
F.J. Huizing (The Netherlands), B.A.W. Hoeben, O.C. Boerman, J. Bussink PO-0965

> Prognostic value of tissue necrosis,CD34 MVD and CA-IX in head and neck cancer patients

D. Ou (France), I. Garberis, J. Adam, P. Blanchard, F. Nguyen, A. Levy, O. Casiraghi, P. Gorphe, I. Breuskin, F. Janot, S. Temam, J. Scoazec, E. Deutsch, Y. Tao PO-0966

> Analysis of tumour microenvironment using multi-parametric PET/MR imaging in HNSCC xenograft models
S. Boeke (Germany), R. Winter, A. Menegakis, P. Mena-Romano, M. Krueger, E.C. Sezgin, G. Reischl, B. Pichler, D. Zips, D. Thorwarth PO-0967

> The Role of epithelial to mesenchymal transition (EMT) as Biomarker for Radioresistance in HNSCC
I. Kurth (Germany), D. Digomann, L. Hein, A. Linge, L. Koi, S. Loeck, K. Maebert, H. Stephan, C. Peitzsch, M. Krause, M. Baumann, A. Dubrovska PO-0968

> Accelerated fractionation should start early for laryngeal/hypopharyngeal cancer.
C. Terhaard (The Netherlands), N. Kasperts, H. Dehnad, E. Smid, L. Janssen, R. Wigggenraad, C. Raaijmakers PO-0969

POSTER

Radiobiology track: Radiobiology of prostate cancer

> Prostate brachytherapy; DNA damage biomarker (gH2AX) induction rate correlates with late toxicity
S. Osman (UK), S. Horn, D. Brady, S.J. McMahon, A.B. Mohamed Yoosuf, D. Mitchell, K. Crowther, C.A. Lyons, A.R. Hounsell, K.M. Prise, C.K. McGarry, S. Jain, J.M. O'Sullivan PO-0970

POSTER

Radiobiology track: Radiobiology of breast cancer

> Estimating second malignancy risk in IMRT and VMAT in radiotherapy for carcinoma of left breast
J. Selvaraj (Australia), V. Sakthivel PO-0971

> Breast cancer cell survival using flattening filter-free beam compared to a standard flattened beam
M. Boccia (Italy), L. Manti, S. Clemente, C. Oliviero, F. Perozziello, R. Liuzzi, M. Conson, L. Cella, R. Pacelli PO-0972

> Dimensionality reduction of clonogenic survival data to identify candidates for radiosensitization
N. Brix (Germany), R. Hennel, C. Belka, K. Lauber PO-0973

> Biomarkers of radiosensitivity for patient stratification and personalized radiotherapy treatment
E. Palumbo (Italy), C. Piotto, L. Baggio, E. Groff, E. Calura, F. Busato, B. El Khouzai, E. Fasanaro, M. Rigo, L. Loreggian, C. Romualdi, A. Russo, M. Mognato, D. Zafiropoulos, L. Corti PO-0974

POSTER

Radiobiology track: Radiobiology of lung cancer

> Clinical utilization of the radiation-hypoxia-induced abscopal/bystander effect in lung cancer
S. Tubin (Austria), S. Gupta, A.M. Mansoor PO-0975

POSTER

Radiobiology track: Radiobiology of colorectal cancer

> Mechanisms of normal tissue toxicity from SAHA, an HDAC inhibitor and radiosensitizer
I.S. Barua (Norway), A.H. Ree, L. Sønstevold, K.R. Redalen, E. Kalanxhi PO-0976

> Plasma lipidomics for predictive biomarker analysis in rectal cancer.
P. Bulens (Belgium), A. Debucquoy, K. Bloch, S. Fieuws, J. Swinnen, K. Haustermans PO-0977

> Potential predictive biomarkers to chemoradiotherapy response in rectal cancer: a lipidomic study.
F. Perrotti (Italy), P. Del Boccio, D. Pieragostino, L. Caravatta, M. Di Tommaso, C. Rosa, M. Di Perna, P. Sacchetta, D. Genovesi PO-0978

POSTER

Radiobiology track: Radiobiology of cancer (others)

> Differential response of glioma cell lines to microbeam versus conventional radiotherapy
L. Smyth (Australia), P. Rogers, J. Crosbie, J. Donoghue PO-0979

> MEK/ERK pathway sustains radioresistance of embryonal rhabdomyosarcoma stem-like cell population.
F. Marampon (Italy), G. Gravina, C. Festuccia, C. Ciccarelli, F. De Felice, D. Musio, V. Tombolini **PO-0980**

> Disturbance of redox status enhances radiosensitivity of hepatocellular carcinoma
H. Zhang (China), C. Sun **PO-0981**

> Fused Toes Homolog (FTS) is a potential target for Notch-mediated radioresistance in cervical cancer
W.Y. Park (Republic of Korea), P.D. Subramania, J.R. Yu **PO-0982**

> Antrodia cinnamomea Regulates DNA Repair and Enhances Radiosensitivity of Esophageal Cancer Cells
Y.M. Liu (Taiwan), Y.J. Chen, Y.K. Liu, T.H. Tsai **PO-0983**

> Checkpoint HLA-G or its ligands ILT2/ILT4 changes radiosensitivity of renal carcinoma cell lines
C. Hennequin (France), M. Daouya, D. Tronik-Le Roux, J. LeMaoult, N. Rouas-Freiss, F. Desgrandchamps, E. Carosella **PO-0984**

> Tumor metabolic changes after neoadjuvant radiotherapy: consequences for surgery-related metastases
N. Leroi (Belgium), F. Lallemand, J. Leenders, S. Blacher, P. De Tullio, P. Coucke, A. Noel, P. Martinive **PO-0985**

> Downregulation of the oncoprotein SET enhances RT-induced apoptosis in hepatocellular carcinoma
C.Y. Huang (Taiwan), M.H. Hung, C.W. Kuo, C.T. Shih, M.H. Chen, K.F. Chen **PO-0986**

> Gemcitabine-based chemoradiotherapy gets improved with PARP inhibitor in pancreatic cancer cells
W. Waissi (France), H. Burckel, E. Magisson, G. Larderet, G. Noel **PO-0987**

> Following tumour microenvironment after Neoadjuvant radiotherapy with IVIM perfusion analysis
F. Lallemand (Belgium), N. Leroi, M. Bahri, E. Balteau, A. Noël, P. Coucke, A. Plenevaux, P. Martinive **PO-0988**

> Sub-lethal radiation allows an efficient antitumor therapy with engineered T-cells in RIP-Tag2 mice

F. Maione, E. Garibaldi (Italy), X. Zhuang, J. Robinson, R. Bicknell, E. Delmastro, A. Miranti, S.P. Lee, P. Gabriele, E. Giraudo PO-0989

> Combining radiotherapy and notch inhibition in melanoma
K. Thippu Jayaprakash (UK), M. Hussein, A. Nisbet, R. Shaffer, M. Ajaz PO-0990

> Chromosomal radiosensitivity and genomic instability of Fanconi anaemia patients in South Africa
F.Z. Francies (South Africa), R. Wainwright, J. Poole, J. Slabbert, A. Baeyens PO-0991

> Low-dose whole lung irradiation plus Re-188-liposome eliminates lung metastasis of esophageal cancer
Y.J. Chen (Taiwan), S.Y. Liu, H.C. Tai, T.W. Lee, C.H. Chang PO-0992

> Influence of radiotherapy on differentiation, maturation and functionality of dendritic cells
L. König (Germany), A. Gardyan, J. Hörner-Rieber, P. Huber, K. Herfarth, S. Rieken PO-0993

> Integrin antagonistic drugs reveal different effectiveness in 2D monolayer vs. 3D spheroid culture
V. Kopatz (Austria), E. Selzer, W. Dörr PO-0994

> Estimation of radiobiology parameters of infiltrative low-grade gliomas WHO Grade II.
S. Milyukov (Russian Federation), Y. Lysak, G. Panshin, N. Kharchenko, Z. Tsallagova, T. Izmailov PO-0995

POSTER

RTT track: Patient preparation, positioning and immobilisation

> Accuracy of an optical surface monitoring device to reduce daily imaging of breast cancer patients
J. Sharpe (Switzerland), A. Tini, A. Moreira, I. Pytko, C. Winter, M. Guckenberger, C. Linsenmeier PO-0996

> Improving shoulder positioning in a 5-points mask.
L. Mesch (The Netherlands), S. Hol, G. D'Olieslager, C. Buijs, D. Washington PO-0997

> Comparison of the accuracy of different pillow for radiation therapy of head and neck cancer
C.Y. Lin (Taiwan), W.H. Yu, C.Y. Lin, J.T.C. Chang PO-0998

> Control of rectal volume with Kampo formula during prostate radiotherapy: A prospective study
J. Kobayashi (Japan), T. Tahara, Y. Matsuzaki, Y. Ono, J. Matsumoto, H. Sato, K. Onko, Y. Kishimoto, T. Tanino, H. Sakaguchi, N. Uchida PO-0999

> Immobilisation systems for brain treatment: are individual head supports needed for stable fixation?
S. Meessen (The Netherlands), F. De Beer, P. Van Haaren, D. Schuring PO-1000

POSTER

RTT track: Imaging acquisition and registration, OAR and target definition

> Evaluation of target volume delineation of the regional lymph nodes in breast cancer patients
M. Mast, E. Gagesteijn (The Netherlands), T. Stam, N. Knotter, E. Kouwenhoven, A. Petoukhova, E. Coerkamp, J. Van der Steeg, J. Van Egmond, H. Struikmans PO-1001

> Comparison of Best Commercial Model and Atlas based segmentation with CT and MR in brain cancer.
J.Y. Woo (Republic of Korea), T.Y. KIM, J.Y. SEOK, T.M. KIM, Y.W. CHO, S.Y. KIM, J.G. BAEK, J.H. KIM, J.H. CHO PO-1002

> A analysis of safety of whole brain radiotherapy with Hippocampus avoidance in brain metastasis
Y. Han (China), J. Chen, G. Cai, X. Cheng, Y. Kirova, W. Chai PO-1003

> Machine learning methods for automated OAR segmentation
P. Tegzes (Hungary), A. Rádics, E. Csernai, L. Ruskó PO-1004

> Automatic segmentation of cardiac sub-structures in the treatment of HL
C. Fiandra (Italy), M. Levis, F. Cadoni, V. De Luca, F. Procacci, A. Cannizzaro, R. Ragona, U. Ricardi PO-1005

> Evaluation of an auto-segmentation software for definition of organs at risk in radiotherapy

M.D. Herraiz Lablanca (Switzerland), S. Paul, M. Chiesa, K.H. Grosser, W. Harms PO-1006

POSTER

RTT track: Treatment planning and dose calculation / QC and QA

> The effect of VMAT on tumor coverage and organs at risk for head and neck cancer patients
M. Kertevig (Denmark) PO-1007

> Feasibility of stereotactic ablative radiotherapy for locally-advanced non-small cell lung cancer
K. Woodford (Australia), V. Panettieri, T. Tran Le, S. Senthi PO-1008

POSTER

RTT track: Image guided radiotherapy and verification protocols

> Evaluation of setup margins using cone-beam CT for prostate and pelvic nodes irradiation
A. Van Nunen (The Netherlands), T. Budiharto, B. De Vocht, D. Schuring PO-1009

> Investigation of reproducibility of bolus position based on kV CBCT imaging
E. Dabrowska (Poland), P. Czuchraniuk, M. Gruda, P. Kukolowicz, A. Zawadzka PO-1010

> Is it safe to omit a setup correction validation scan for central lung lesions treated with SBRT?
M.M.G. Rossi (The Netherlands), H.M.U. Peulen, J.S.A. Belderbos, J.J. Sonke PO-1011

> Traffic Light Protocol as a guide for optimal registration of LACC complex tumor pathology
E. Bogaert (Belgium), L. Van den Berghe, A.L. Michiels, C. De Wagter, Y. Lievens, K. Vandecasteele PO-1012

POSTER

RTT track: Motion management and adaptive strategies

> Library of plans and CTV-PTV margins for VMAT irradiation of cervical cancer
P.M. Kager (The Netherlands), S. Ali, I. Valkering, M. Bloemers, P. Remeijer PO-1013

> Target volume motion during anal cancer IGRT using cone-beam CT
C. Brooks (UK), L. Bernier, V. Hansen, D. Tait PO-1014

> Dosimetric comparison of the breath-hold based and conventional radiation therapy of lung cancer.
A.H. Choi (Republic of Korea), K.Z. Chung, B.S. Park, J.H. Park, H.R. Pyo, B.K. Choi PO-1015

> Impact of CBCT based IGRT strategies on margins in IMRT of gynecological tumors after hysterectomy
M. Buijs (The Netherlands), M. Bloemers, P. Remeijer PO-1016

> Dose guided adaptive radiotherapy based on cumulated dose in OAR for prostate cancer
M. Nassef (France), A. Simon, B. Rigaud, L. Duvergé, C. Lafond, J.Y. Giraud, P. Haigron, R. De Crevoisier PO-1017

POSTER

RTT track: Patient care, side effects and communication

> Improvement of radiation-induced late toxicity after hyperbaric oxygen treatment
R. Roncero (Spain), J. Pardo, E. Jimenez-Jimenez, D. Morera, N. Aymar, I. Ortiz, M. Vidal PO-1018

> Mobile oncology: survey with healthcare professionals about telemedicine, mHealth and mobile apps
K. Kessel (Germany), M. Vogel, F. Schmidt-Graf, S. Combs PO-1019

> Re-irradiation of head and neck sarcomas: initial results of protontherapy center of trento, Italy
I. Giacomelli (Italy), D. Scartoni, M. Cianchetti, F. Dionisi, B. Rombi, M. Amichetti PO-1020

POSTER

RTT track: Risk management/quality management

> An electronically configurable checklist program for quality control of RT treatment planning
K.H. Grosser (Switzerland), A.C. Schulte, W. Harms PO-1021

> Implementation of a paperless workflow in radiotherapy; Reducing transcription
O. Shoffren (UK), Y. Tsang, J. Kudhail **PO-1022**

> Reducing waiting room times - A 5 year review of an in-house KPI tool
A. Wallis (Australia), D. Moretti **PO-1023**

> Effectiveness of couch coordinate constraints to reduce error rates in radiation therapy delivery
O. Nairz (Germany), N. Breitkreutz **PO-1024**

> Development of a in-house KPI tool
A. Wallis, D. Moretti (Australia) **PO-1025**

Electronic posters

ELECTRONIC POSTER

Clinical track: Head and Neck

> Clinical Outcomes of Taiwan cT4b OSCC: toward the Identification of the Optimal Initial Treatment
T.C. Yen (Taiwan), C.T. Liao, Y.W. Wen, L.Y. Lee, C.Y. Lin, H.M. Wang, C.H. Lin EP-1026

> Evaluation of induction chemotherapy followed by radiation therapy in advanced oropharyngeal cancers
R.K. Pothamsetty (India), B.P. Thaliath, R.R. Ghosh EP-1027

> MRI during radiotherapy: tumor geometry and changes in organs at risk for head-and-neck patients
C. Grundmann, K.A. Kessel (Germany), S. Pigorsch, S. Graf, F. Nüsslin, S.E. Combs EP-1028

> Improved interobserver reproducibility in nasopharyngeal tumour delineation using a reference GTV
A. Lapierre (France), F. Lorchel, P. Boisselier, B. Fleury, F. Craighero, M. Deberne, G. Gascou, M. Rousset, V. Favrel, J.B. Pialat, J.M. Ardiet, P. Céruse, O. Chapet EP-1029

> External beam radiation therapy for locoregionally recurrent differentiated thyroid carcinoma
C.Y. Kim (Republic of Korea), N.K. Lee, K.Y. Jung, S.K. Baek EP-1030

> FDG-PET/CT as a guide for Intensity-Modulated Radiation Treatment of advanced head and neck cancer
F. Ricchetti (Italy), R. Mazzola, S. Fersino, N. Giaj-Levra, A. Fiorentino, U. Tebano, D. Aiello, R. Ruggieri, F. Alongi EP-1031

> Optimising head and neck radiotherapy for dental rehabilitation
S. O'Cathail (UK), N. Karir, K. Shah EP-1032

> Survival patterns in elderly head and neck squamous cell carcinoma patients treated with definitive RT

L. Sommers (The Netherlands), R. Steenbakkers, H. Bijl, J. Vemer-van den Hoek, J. Roodenburg, S. Oosting, S. De Rooij, J. Langendijk **EP-1033**

> Significance of mutant p53 and Ki67 as predictive biomarkers post Chemo-RT in locally advanced HNSCC
P. Baskaran Shanmuga (India), K. Periasamy, S. Sharma, G.K. Singh, K. Pratap, P. Singh, V. Yadav, A.K. Mandal, K.T. Bhowmik **EP-1034**

> Dose-volume analysis of the hypoglossal nerve and its correlation with Dysarthria-Dysphagia Syndrome
F. Chen (China), R. Ren **EP-1035**

> 18F-FDG-PET in guiding dose-painting with IMRT in oropharyngeal tumours (FiGaRO) – swallow qesults
C. Doughty (UK), J. Dunton, A. Michaelidou, M. Lei, T. Guerrero Urbano **EP-1036**

> Chronic radiation-associated dysphagia (RAD) after curative reirradiation in head and neck cancer
L. Gutierrez Bayard (Spain), M. Salas Buzón, E. Porras Alonso, S. Garduño Sánchez, M. Macias, L. Ingunza Barón, E. Gonzalez Calvo, I. Villanego Beltran, V. Diaz Diaz **EP-1037**

> Intraoperative electron beam radiotherapy for locoregionally recurrent head and neck cancer
P. Wald (USA), J. Grecula, A. Bhatt, V. Diavolitsis, T. Teknos, M. Old, J. Rocco, A. Agarwal, E. Ozer, R. Carrau, D. Blakaj **EP-1038**

> CTV growth evaluation for involved site neck lymphoma RT if pre-chemo RT position PET-CT is absent
D. Bird (UK), C. Patel, A. Scarsbrook, V. Cosgrove, E. Thomas, D. Gilson, R. Prestwich **EP-1039**

> Identifying risk factors for L'Hermitte's syndrome after chemo-IMRT for head and neck cancer
H. Laidley (UK), D. Noble, G. Barnett, R. Jena, N. Burnet **EP-1040**

> The preliminary report of PG2 in improving QoL of pharyngeal cancer patients in chemoradiotherapy
H.M. Wang (Taiwan), J.R. Lin, C.H. Hsieh, C.L. Hsu, C.Y. Lin, J.T.C. Chang **EP-1041**

> Olfactory neuroblastoma – 10-year experience with VMAT radiotherapy
H. Ariyaratne (UK), A. Ward, P. Bhudia, V. Lund, D. Carnell **EP-1042**

> Chemo-reirradiation with simultaneously integrated boost in patients with local recurrence of HNSCC
A. Mikhaylov (Russian Federation), N. Vorobyov, E. Sokolova, G. Andreev, A. Kalesnik, A. Lyubinskiy, M. Rukhlenko, V. Sokurenko **EP-1043**

> Survival and functional outcome after treatment for primary base of tongue cancer
S. Park (Republic of Korea), Y. Cho, J. Lee, K.C. Keum, C.G. Lee **EP-1044**

> L glutamine in reducing severity of oral mucositis due to chemoradiation in head and neck cancer
V. Pareek (India), R. Bhalavat, M. Chandra **EP-1045**

> Hypofractionated palliative radiotherapy in head and neck cancer
P. Vargas Arrabal (Spain), I. Tovar Martin, C. Prieto Prieto, M. Zurita Herrera, R. Guerrero Tejada, J. Exposito Hernandez, R. Del Moral Avila, A. Ruiz Martinez, S. Rodriguez Pavon, R. Ching **EP-1046**

> Comparison of TPF and CF induction chemoradiotherapy for radical treatment of head and neck cancer.
C. Adkin (UK), D. Adjogatse, T. Guerrero Urbano, M. Lei **EP-1047**

> Phantom Tumour Phenomenon in nasopharyngeal carcinoma patients after radiotherapy
Y.M. Jen (Taiwan), S. Shi **EP-1048**

> Intensity-Modulated Radiotherapy (IMRT) could provide better outcomes for nasopharyngeal carcinoma.
P. Pattaranutaporn (Thailand), N. Ngamphaiboon, T. Chureemas, J. Juengsamarn, S. Lukerak, R. Sophonsakulchot, C. Jiarpinitnun **EP-1049**

> Prognostic factors analysis in advanced SCCHN treated by induction chemotherapy/local therapy
C. Wu (Taiwan), H.Y. Hsieh, Y.C. Liu, W.Y. Wang, J.C. Lin **EP-1050**

> Characteristics and Impact of HPV to head and neck squamous cell carcinoma in Thai patients
C. Jiarpinitnun (Thailand), P. Pattaranutaporn, N. Larbcharoensub, T. Chureemas, J. Juengsamarn, N. Trachu, S. Lukerak, P. Chansriwong, N. Ngamphaiboon **EP-1051**

> Hypofractionated vs. conventional radiotherapy for early glottic cancer: a propensity score analysis

> Hypofractionated vs standard radical radiotherapy in early (T1-T2) glottic cancer patients.
M.A. González Ruiz (Spain), J.J. Cabrera Rodríguez, A. Ruiz Herrero, M.C. Cruz Muñoz, P. Simón Silva, J. Quirós Rivero, J.L. Muñoz García, Y. Ríos Kavadoy, M.F. Ropero Carmona, F. García Urra **EP-1062**

> Epidemiology and clinical outcome of HPV in different head and neck cancer a subgroup analysis
E. Boelke (Germany), B. Gössler, B. Tamaskovic, W. Budach, C. Matuschek **EP-1063**

> Does parotid sparing adaptive radiotherapy (PSART) benefit patients? Interim results of PARITY study
M. Arunsingh (India), C. Nallathambi, S. Prasath, A. Balakrishnan, R.K. Shrimali, R. Achari, I. Mallick, S. Chatterjee **EP-1064**

> Prediction of Dysphagia and Xerostomia based on CT imaging features of HNSCC patients
K. Pilz (Germany), S. Leger, A. Zwanenburg, C. Richter, M. Krause, M. Baumann, S. Löck, E.G.C. Troost **EP-1065**

> Hypofractionated accelerated SIB-VMAT radiotherapy for head and nedk cancer: brachial plexus constraint
M. Nuzzo (Italy), L.P. De Vivo, F. Deodato, G. Macchia, M. Ferro, M. Ferro, L.G. Serino, S. Cilla, S. Cammelli, A. Farioli, A. Arcelli, A. Veraldi, G.P. Frezza, V. Valentini, A.G. Morganti **EP-1066**

> Is adenoid cystic carcinoma (ACC) radioresistant? The effect of radiotherapy for ACC of head and neck
I. Jung (Republic of Korea), J. Kim, S. Ahn, S. Song, S. Yoon, S. Kim, J. Park, E. Choi, S. Lee **EP-1067**

> Hypoxic imaging obtained at 2-h postinjection in FMISO-PET
M. Kawamura (Japan), M. Yoshimura, T. Katagiri, T. Mitsuyoshi, H. Inokuchi, T. Ishimori, Y. Nakamoto, T. Mizowaki, M. Hiraoka **EP-1068**

> Survival-weight health profile in nasopharyngeal cancer patients
C.H. Lai (Taiwan), W.C. Chen, M.F. Chen **EP-1069**

> Concurrent chemoradiation versus upfront surgery for clinical T3-4 hypopharynx and larynx cancer
G.S. Yoo (Republic of Korea), D. Oh, J.M. Noh, Y.C. Ahn, C.H. Baek, Y.I. Son, H.S. Jeong, J.M. Sun, M.J. Ahn, K. Park **EP-1070**

> Organ-sparing SBRT in reirradiation of head and neck cancer: efficacy, toxicity, and quality of life
I. Zhang (USA), G. Gill, M. Marrero, A. Sharma, A. Riegel, D. Paul, J. Knisely, S. Teckie, M. Ghaly **EP-1071**

> Early nutritional support in head and neck: survey of Italian radiation oncologists/otolaryngologists.
M. Trignani (Italy), A. Allajbej, A. Di Pilla, M. Nuzzo, S. Di Biase, M. Di Perna, A. Croce, M. Di Nicola, I. Porfilio, D. Genovesi **EP-1072**

> Volumetric changes in parotid volume during radiation therapy in head and neck cancer
M.R. Tonse (India) **EP-1073**

> Dose impact using standard head and neck immobilisation system in brain tumours
M. Rincon (Spain), J. Olivera, J. Penedo, I. Prieto, S. Gomez, M. Garcia, J. Luna, D. Esteban, A. Ilundain, J. Vara **EP-1074**

> Role of Diffusion Weighted Imaging in laryngeal and hypopharyngeal cancers treated with radiotherapy
S. Pavamani (India), S. Thomas, P. Surya, R. Michael, G. Mathew, S. Mathews, S. Balukrishna, M. Sunithi **EP-1075**

> Toxicity of concomitant chemotherapy and IMRT in locally advanced OPSCC: sequential vs SIB technique
G. Abate (Italy), F. De Felice, A. Galdieri, G. Gravina, F. Marampon, D. Musio, V. Tombolini **EP-1076**

> Predictive modeling for radiation-induced acute dysphagia in head and neck cancer patients.
D. Alterio (Italy), M. Gerardi, L. Cella, V. D'Avino, G. Palma, D. Ciardo, E. Rondi, A. Ferrari, M. Muto, R. Spoto, R. Pacelli, R. Orecchia, B. Jereczek **EP-1077**

> Transient xerostomia in head and neck cancers with significant parotid inclusion in target volume
A. Datta (India), A. Mukherji, E. Thiraviyam **EP-1078**

> Carotid blowout syndrome after reirradiation with particle therapy in the head and neck region
I.E. Dale (Norway), S. Molinelli, E. Ciurlia, O. Dahl, P. Fossati **EP-1079**

> Psychological distress in patients with head and neck cancer during radiotherapy
M. Massaccesi (Italy), L. Dinapoli, A. Pesce, R. Autorino, A. Tenore, M. Balducci, D. Smaniotto, G. Chiloiro, M. Rigante, G. Cadoni, G. Paludetti, V. Valentini, F. Miccichè **EP-1080**

> Tumour response after palliative radiotherapy in head and neck cancer and its influence on survival
M. Cruz (Portugal), C. Sousa, D. Branco, L. Khouri, J. Brandão, G. Melo **EP-1081**

> Primary surgery vs. radiotherapy in early-stage oropharyngeal cancer: a single centre experience
C. Pedro (Portugal), B. Mira, P. Silva, E. Netto, R. Pocinho, A. Mota, P. Pereira, M. Ferreira, T. Alexandre, I. Sargento, P. Montalvão, M. Magalhães, S. Esteves, F. Santos **EP-1082**

> HPV as an etiological and prognostic factor for the Polish patients with HNC.
A. Brewczyński (Poland), T. Rutkowski, A. Mazurek, M. Snietura, Z. Kołosza, A. Wygoda, K. Składowski, A. Celejewska, E. Małusecka, A. Fiszer-Kierzkowska, U. Bojko, W. Pigłowski, A. Hajduk, P. Polanowski, U. Dworzecka, I. Gawron, M. Kentnowski, B. Pilecki, T. Stępień, I. Domińczyk, E. Nadolska, A. Tatar, P. Widłak **EP-1083**

> Laryngeal preservation using chemo-radiotherapy, single institution experience from Egypt.
A. Al Nagmy (Egypt), T. Shouman, A. Hassouna, M. Gaber **EP-1084**

> Comparative study of outcomes and toxicities in conventional 2DRT vs IMRT in locally advanced HNSCC
K. Periasamy (India), P. Baskaran Shanmuga, S. Sambasivam, T.P. Soni, N. Patni, G.K. Singh, J. Kaur, A. Gupta, K.T. Bhowmik **EP-1085**

> Health status and phisical activity in head and neck cancer survivors
A. Matías-Pérez (Spain), G. Gallego-Herreros, B. G. Díaz de Tudanca, P. Soria-Carreras, A. Nieto-Palacios, A. Rodríguez-Gutierrez, L.A. Pérez-Romasanta **EP-1086**

> Real-world Cetuximab toxicity in curative and recurrent/metastatic setting in HNSCC patients.
I. Desideri (Italy), C. Muntoni, C. Ciabatti, M. Lo Russo, P. Bonomo, M. Loi, D. Greto, I. Meattini, L. Livi **EP-1087**

> EGFR as blood biomarker improves prognostic value of nomogram for survival in laryngeal carcinoma
F.W.R. Wesseling (The Netherlands), G. Feliciani, C. Oberije, M.P. Van de Waarenburg, C.G. Schalkwijk, P. Lambin, F.J. Hoebers EP-1088

> Prospective study of body composition changes during IMRT for head and neck cancer as assessed by DXA scans
J. Johansen (Denmark), A. Hermann, S. Lønbro EP-1089

> Particle therapy and IMRT for patients with esthesioneuroblastoma: a single-institution experience
J. Liermann (Germany), M. Syed, D. Bernhardt, N. Bougatf, S.B. Harrabi, A. Paul, T. Sprave, S. Rieken, T. Haberer, K. Herfarth, J. Debus, H. Hauswald, S. Adeberg EP-1090

> Low dose fractionated RT in association to TPF as induction therapy in advanced head and neck cancer
R. Autorino (Italy), M. Massaccesi, A. Pesce, M. Balducci, N. Di Napoli, T. Tartaglione, V. Rufini, F. Bussu, J. Galli, S. Chiesa, G. Paludetti, V. Valentini, F. Miccichè EP-1091

> Perioperative high dose rate brachytherapy in previously irradiated head and neck cancer: results
M.I. Martinez Fernandez (Spain), M. Cambeiro, J. Alcalde, R. Martínez-Monge EP-1092

> Hypofractioned robotic stereotactic radiotherapy of head and neck Paragangliomas
F. Meniai-Merzouki (France), B. Coche-Dequeant, E. Bogart, T. Lacornerie, X. Mirabel, E. Lartigau, D. Pasquier EP-1093

> Transoral Laser Microsurgery associated to radiotherapy in advanced laryngeal carcinomas.
I. Nieto Regueira (Spain), V. Ochagavia, A. Nuñez, C. Ponte, V. Muñoz EP-1094

> Combined induction chemotherapy and radiotherapy in locally advanced nasopharyngeal carcinoma.
A. Gevorkov (Russian Federation), A. Boyko, L. Bolotina, A. Kornietskaya, T. Deshkina EP-1095

> Using DIR to study patterns of loco-regional failure in patients with head and neck cancer
Y. Zheng (UK), D.J. Noble, R. Jena, N. Burnet EP-1096

> P16 expression: a predictive marker for treatment-related outcomes in oropharyngeal cancer patients?
A. Modesto (France), T. Galissier, A. Lusque, E. Uro-Coste, J. Delord, A. Laprie, J. Sarini, P. Graff, P. Vergez, M. Rives EP-1097

> Survival predictors in patients with head and neck cancer treated with surgical resection
R.C.D.O. Franco, L.L. De Matos, G. De Castro Junior, M.A.V. Kulcsar, G.N. Marta (Brazil) EP-1098

> Evaluation of laryngeal preservation and outcomes following RT for locally advanced laryngeal SCC
A.M. Glynn (Ireland), J. O Shea, R. McDermott, S. Brennan EP-1099

> Nodal response during radiotherapy for head and neck cancer Correlates with outcome
K. Latifi, A. Rishi, J. Caudell (USA) EP-1100

ELECTRONIC POSTER
Clinical track: CNS

> Leptomeningeal spread after stereotactic radiation for brain metastases from breast cancer
O. Kaidar-Person (USA), A. Deal, C. Anders, M. Ewend, L. Carey, E. Dees, J. Camporeale, J. Ramirez, J. Benbow, L. Marks, T. Zagar EP-1101

> Primary and secondary gliosarcomas: clinical, molecular, and survival characteristics
H.J. Kim (Republic of Korea), S.H. Kim, J.H. Chang, I.J. Lee, C.O. Suh, J. Cho EP-1102

> Are hippocampi considered organs at risks during stereotactic radiotherapy for brain metastases?
U. Tebano (Italy), A. Fiorentino, G. Scicignano, N. Giaj-Levra, S. Fersino, R. Mazzola, F. Ricchetti, S. Naccarato, R. Ruggieri, F. Alongi EP-1103

> SABR for brain metastases with VMAT and FFF: feasibility and early clinical results
N. Giaj Levra (Italy), A. Fiorentino, G. Scicignano, U. Tebano, S. Fersino, R. Mazzola, F. Ricchetti, D. Aiello, S. Naccarato, R. Ruggieri, F. Alongi EP-1104

> Treatment outcomes and prognostic factors of atypical meningioma: a single-institution experience
H.J. Kang (Republic of Korea), B.O. Choi **EP-1105**

> Local control and overall survival after frameless radiosurgery
A. Bilger (Germany), F. Frenzel, O. Oehlke, R. Wiehle, D. Milanovic, V. Prokic, C. Nieder, A.L. Grosu **EP-1106**

> Treatment Strategies for local and distant recurrence after HFSRT of the Resection Cavity
A. Bilger (Germany), E. Bretzinger, H. Lorenz, O. Oehlke, A.L. Grosu, S.E. Combs, H.M. Specht **EP-1107**

> CyberKnife® stereotactic radiation therapy for re-irradiation of recurrent high grade gliomas.
H. Grzbiela (Poland), M. Stąpór-Fudzińska, E. Nowicka, M. Gawkowska, R. Tarnawski **EP-1108**

> Measurement of hippocampus atrophy after whole brain irradiation using voxel based morphometry
T. Ito (Japan), M. Nishihara, S. Takaki, Y. Tani **EP-1109**

> Evaluation of [18F]FET-PET and MRI assessed recurrence pattern in patients with high-grade glioma
J. Hesse, K. Kessel (Germany), H. Specht, M. Schwaiger, T. Pyka, C. Zimmer, S. Combs **EP-1110**

> Cyber knife for Idiopathic Trigeminal Neuralgia – Novel technique to reduce brainstem dose
P.S. Sridhar (India), N. Madhusudhan, K. Roopesh, H. Madhusudhan, R. Satish, G. Swaroop, A. Jerrin, A. Pichandi, J. Vijaykumar, M. Praveen kumar, S. Shivkumar, M. Arunakumari, G. Monica, B. Ramesh, K. Gurunath, B. Ajai kumar **EP-1111**

> dosimetric evaluation in tri-cobalt60 viewray system for hypofractionated imrt in brain metastases
M. Ferro (Italy), E. Placidi, S. Chiesa, F. Cellini, M. Massaccesi, G.C. Mattiucci, V. Frascino, R. Canna, C. Masciocchi, L. Azario, V. Valentini, M. Balducci **EP-1112**

> Helical Tomotherapy and altered fractionation in the treatment of Glioblastoma
C. Caruso (Italy), R. Barbara, S. Gomellini, A.D. Andrulli, A. Caccavari, M. Moreschi, U. De Paula **EP-1113**

> A prospective multicenter feasibility trial of Spine Stereotactic Body Radiation Therapy
T. Hiroshi (Japan), T. Furuya, K. Nihei, Y. Kumazaki, K. Miyaura, H. Mayahara, H. Nishimura, M. Nakayama, Y. Nomto, N. Shikama, K. Karasawa **EP-1114**

> Linac vs viewray in brain metastases: a dosimetric comparison of hypofractionated IMRT and VMAT
F. Cellini (Italy), M. Ferro, E. Placidi, S. Chiesa, B. Diletto, M. Massaccesi, C. Votta, C. Masciocchi, V. Frascino, G.C. Mattiucci, L. Azario, V. Valentini, M. Balducci **EP-1115**

> Reirradiation and concurrent bevacizumab high-grade recurrent gliomas: experience and perspectives.
A. Schernberg (France), F. Dhermain, S. Dumont, A. Patrikidou, J. Domont, J. Pallud, E. Deutsch, G. Louvel **EP-1116**

> Sequential proton boost after standard chemoradiation for high-grade glioma
S. Adeberg (Germany), D. Bernhardt, S. Harrabi, M. Uhl, A. Paul, N. Bougatf, V. Verma, T. Haberer, S. Combs, K. Herfarth, J. Debus, S. Rieken **EP-1117**

> Radiotherapy-related endocrine dysfunction in patients treated for craniopharyngioma
N. Taku (UK), A. Powlson, M. Gurnell, N. Burnet **EP-1118**

> Radiosurgery for meningioma: evaluation of radiological outcome and factors of recurrence
S. Hassas yeganeh, M. Tabatabiefar (Islamic Republic of Iran), R. Sarghampour **EP-1119**

> Fractionated stereotactic radiotherapy in adult craniopharyngiomas: outcomes and complications.
R. Benlloch Rodríguez (Spain), R. Magallón Sebastián, D. Rincón Cruz, M.I. García Berrocal, P. Ruiz García, J. Romero Fernández, I. Zapata Paz, M.J. Expósito Casas, B. Vaquero Barrón, A. De la Torre Tomas **EP-1120**

> Newly diagnoses grade III glioma patients: evaluation of factors conditioning outcome.
P. Navarria (Italy), F. Pessina, S. Tomatis, L. Cozzi, G.R. D'Agostino, A.M. Ascolese, M. Simonelli, A. Santoro, E. Clerici, C. Franzese, L. Bello, M. Scorsetti **EP-1121**

> TSPO PET imaging RT treatment planning in malignant glioma
D.F. Fleischmann (Germany), N.L. Albert, M. Unterrainer, P. Bartenstein, C. Belka, M. Niyazi **EP-1122**

> To contour or not contour hippocampus in stereotactic brain radiotherapy? A dosimetric study
C. Di Carlo, S. Di Biase, L. Caravatta (Italy), G. Caponigro, C. Rosa, M. Di Biase, F. Perrotti, M. Trignani, A. Vinciguerra, A. Augurio, S. Giancaterino, A. De Nicola, M.D. Falco, D. Genovesi **EP-1123**

> PET-MRI prior to re-irradiation of high-grade glioma patients - a planning study
D.F. Fleischmann (Germany), M. Unterrainer, S. Corradini, M. Rottler, P. Bartenstein, C. Belka, N.L. Albert, M. Niyazi **EP-1124**

> Concomitant temozolomide therapy improves survival outcome of patients with multifocal glioblastoma
M. Syed (Germany), J. Liermann, T. Sprave, V. Verma, J. Rieber, S.B. Harrabi, N. Bougatf, D. Bernhardt, A. Mohr, S. Rieken, J. Debus, S. Adeberg **EP-1125**

> Whole brain radiotherapy of breast cancer brain metastases: intracranial progression and prognosis.
D. Ou (China), L. Cao, C. Xu, J. Chen **EP-1126**

> Dose to hippocampus in brain metastases radiosurgery: need for an hippocampal sparing approach
S. Scoccianti (Italy), D. Greto, S. Calusi, L. Poggesi, C. Arilli, M. Casati, A. Compagnucci, C. Becherini, G.A. Carta, I. Desideri, M. Baki, L. Visani, G. Simontacchi, P. Bonomo, L. Bordi, P. Bono, S. Pallotta, L. Livi **EP-1127**

> Stereotactic radiotherapy or whole brain with simultaneous integrated boost in brain metastases?
F. Beghella Bartoli (Italy), S. Chiesa, C. Mazzarella, S. Luzi, R. Autorino, S. Bracci, F. Micciché, G.C. Mattiucci, C. Masciocchi, M. Massaccesi, V. Valentini, M. Balducci **EP-1128**

> Fractionated stereotactic radiotherapy for the treatment of cavernous sinus meningiomas
I. Tovar Martin (Spain), P. Vargas, M. Zurita, R. Guerrero, E. Saura, J.L. Osorio, A. Horcajadas, J. Busquier, C. Prieto, S. Rodríguez, A. Ruiz, R. Ching, J. Expósito, R. Del Moral **EP-1129**

> Hippocampus Dosimetry in patients treated with stereotactic radiosurgery for brain metastases
N.S. Iqbal (UK), J.R. Powell, D.W.O. Tilsley, A. Bryant, A.E. Millin, D. Lewis, J.N. Staffurth **EP-1130**

> Evaluation of overall survival following SRS for non-small cell lung cancer brain metastases
A. Keller, S. All (USA), H. Patel, C. Sherrill, B. Dumas, M. Mejia, N. Ramakrishna **EP-1131**

> Hypofractionated Stereotactic Reirradiation for recurrent high-grade glioma
L. Hynkova (Czech Republic), P. Slampa, T. Kazda, J. Garcic, M. Vrzal, P. Fadrus, R. Belanova, I. Sikova, D. Dvorak, H. Dolezelova, P. Pospisil **EP-1132**

> Multifraction radiosurgery for large brain metastasis: initial results from Brazilian experience.
A. Borges (Brazil), L. Ercolin, M. De Mattos, J. Alexandre, M. Giglioli, A. Camargo, D. Marconi, D. Fonseca, T. Kaprealian **EP-1133**

ELECTRONIC POSTER

Clinical track: Haematology

> Head and neck DLBCL in HIV-positive patients: long-term results in the HAART era
F. De Felice (Italy), L. Grapulin, A. Di Mino, J. Dognini, D. Musio, V. Tombolini **EP-1134**

> Radiotherapy in primary CNS lymphoma
R. Muni (Italy), G. Grittii, L. Feltre, F. Filippone, E. Iannacone, M. Kalli, L. Maffioletti, F. Piccoli, S. Takanen, L. Cazzaniga **EP-1135**

> Technical results of total skin irradiation using helical TomoTherapy.
K. Okuma (Japan), A. Haga, Y. Imae, W. Takahashi, K. Nakagawa **EP-1136**

> Meningeal localisation in Sezary Syndrome patient treated with VMAT craniospinal irradiation
R. Muni (Italy), M. Fortunato, L. Feltre, F. Filippone, E. Iannacone, M. Kalli, L. Maffioletti, F. Piccoli, S. Takanen, L. Cazzaniga **EP-1137**

> Dosimetric accuracy of linac based Total marrow Irradiation
B. Aydogan (USA) EP-1138

ELECTRONIC POSTER
Clinical track: Breast

> Eliot- boost and conservative surgery followed by hypofractionated ebrt in breast cancer patients
S. Takanen (Italy), G. Gritti, M. Källi, L. Feltre, F. Filippone, E. Iannacone, L. Maffioletti, R. Muni, P. Fabio, E.M.P. Mauri, M. Giovanelli, L. Burgoa, A. Paludetti, C. Valerii, F. Palamara, M. Ferro, P. Fenaroli, S. Andreoli, M. Fortunato, L.F. Cazzaniga EP-1139

> Dosimetric comparison between helical tomotherapy and IMRT for bilateral breast cancer
M.H. Wang (Taiwan) EP-1140

> Acute and late toxicity of IORT during BCS followed by whole breast radiotherapy (WBI).
B. Urbanski (Poland), A. Roszak Andrzej, K. Bratos, P. Milecki, A. Karczewska-Dzionk, M. Litoborski, S. Adamczyk EP-1141

> EORTC QLQ C-30 scores evolution in stage I-III breast cancer patients during sequential treatment
A. Vila (Spain), J. Perez de Olaguer, P. Gallego, G. Carrera, A. Pedro EP-1142

> Hypofractionated vs conventionally fractionated breast radiotherapy: Economic consequences.
A.C. Ciafre (Spain), J.M. Torices, E. Jordá, D. Dualde, R. García, E. Ferrer EP-1143

> Old age impact on radiotherapy omission in breast cancer patients
S. Cima (Switzerland), B. Muoio, P. Fanti, A. Richetti, C. Azinwi, F. Martucci, K. Yordanov, G. Pesce, M. Valli EP-1144

> Troponin I for the detection of cardiac toxicity in adjuvant breast cancer radiotherapy
K. Boudaoud (Algeria), H. Allioueche, O. Haderbeche, K. Sifi, S. Taleb, C. Kourteli, K. Benmebarek, M. Setta, S. Serradj, T. Filali, A. Djemaa, N. Abadi EP-1145

> Acute toxicity of hypofractionation with SIB in the radiation therapy for breast cancer

I. Fernandez-Ibiza (Spain), J. Calvo, O. Coronil, S. San José, E. Puertas, R. Robaina, J. Casals **EP-1146**

> Radiation induced oesophagitis in breast cancer patients
K. West (Australia), N. Coburn, R. Beldham-Collins, K. Tiver, K. Stuart, V. Gebski **EP-1147**

> Distress and self-awareness of disease severity in early breast cancer: two Institutions comparison
I. Meattini (Italy), T. Zagar, G. Francolini, A. Deal, G. Carta, J. Camporeale, L. Terzo, L. Livi, O. Kaidar-Person **EP-1148**

> Omission of completion axillary lymph node dissection in patients underrepresented in ACOSOG Z11
B. Gebhardt (USA), Z. Horne, G. Ahrendt, E. Diego, S. Beriwal **EP-1149**

> Preliminary results of intra-operative radiotherapy in old women with good prognostic features
S. Guillerm, E. Bourstyn, R. Itti, I. Fumagalli, V. Martin, L. Cahen-Doidy, L. Quero, S. Giacchetti, C. Cuvier, M. Espié, C. Hennequin (France) **EP-1150**

> Hypofractionated radiotherapy in breast cancer treatment: a comparison between 3-DCRT and IMRT
A. Fiorentino (Italy), R. Mazzola, N. Giaj Levra, G. Sicignano, G. Di Paola, S. Naccarato, S. Fersino, U. Tebano, F. Ricchetti, R. Ruggieri, F. Alongi **EP-1151**

> Intraoperative radiotherapy for early breast cancer: a monocentric experience
A. Baldissera (Italy), L. Giaccherini, I. Marinelli, A. Parisi, G. Siepe, O. Martelli, F. Salvi, D. Balestrini, C. Degli Esposti, I. Ammendolia, G. Tolento, V. Panni, G. Macchia, F. Deodato, S. Cilla, A.G. Morganti, G.P. Frezza **EP-1152**

> Post-Mastectomy hypofractionated radiotherapy for breast cancer treatment
C.S. Ortiz Arce (Mexico), A. Chagoya González, E.N. Barrientos Luna **EP-1153**

> Changes in skin microcirculation during radiation therapy for breast cancer
E. Tesselaar, A.M. Flejmer (Sweden), S. Farnebo, A. Dasu **EP-1154**

> Outcomes of breast cancer patients older than 80 years treated with adjuvant radiotherapy

R. Barrientos (Chile), M. Frelinghuysen, M. Burotto EP-1155

> A clinical trial on hypofractionated whole-breast irradiation after breast-conserving surgery
M. Nozaki (Japan), Y. Kagami, T. Shibata, K. Nakamura, Y. Ito, Y. Nishimura, Y. Kawaguchi, Y. Saito, Y. Nagata, Y. Matsumoto, T. Akimoto, T. Nishimura, T. Uno, K. Tsujino, M. Kataoka, T. Kodaira, K. Shiraishi, K. Inoue, F. Isohashi, M. Hiraoka, K. Karasawa, S. Izumi, H. Sakurai EP-1156

> Serial changes of post-lumpectomy seroma during MRI-guided partial breast irradiation
S.H. Jeon (Republic of Korea), K.H. Shin, S.Y. Park, J.M. Park EP-1157

> Vmat radiation induced nausea/vomiting in adjuvant breast cancer radiotherapy: dosimetrical issues.
G. Lazzari (Italy), A. Terlizzi, B. Turi, M.G. Leo, D. Becci, G. Silvano EP-1158

> Hypofractionated adjuvant radiotherapy and concomitant trastuzumab for breast cancer: 5-year results
M. Pasetti, A. Fodor (Italy), C. Sini, F. Zerbetto, P. Mangili, P. Signorotto, I. Dell'Oca, C. Gumina, M. Azizi, A.M. Deli, P. Passoni, N. Slim, C.L. Deantoni, B. Noris Chiorda, S. Foti, A. Chiara, G. Rossi, C. Fiorino, A. Bolognesi, N.G. Di Muzio EP-1159

> T4s for T4 small breast cancer: a new TNM classification subgroup proposal
W.S. Zrafi (Tunisia), S. Tebra, H. Ouaz, N. Bouaouina EP-1160

> Hypofracionated radiation therapy in breast cancer: retrospective analysis of late toxicity
P. Ferrazza (Italy), F. De Renzi, T. Iannone EP-1161

> Non surgical breast conserving treatment using a new radiosensitizer
T. Shimbo (Japan), K. Yoshida, N. Yoshikawa, H. Yoshioka, M. Nakata, Y. Narumi, T. Komori, H. Matsutani, T. Hamada, Y. Uesugi EP-1162

> A prospective evaluation of lumpectomy cavity volume changes during whole breast radiotherapy
B. Barney (USA), G. Martinez, R. Hecox, J. Clark EP-1163

> Improved accuracy in IORT with electron beams by a new measuring system of mammary gland thickness

P. Scalchi (Italy), A. Marchesin, G. Scalco, S. Bacchiddu, C. Mari, L. Grandin, P. Francescon, F. De Marchi, C. Baiocchi EP-1164

> Short and long term safety of a post-mastectomy conformal electron beam radiotherapy (PMERT)
N. Grellier-Adedjouma (France), M. Chevrier, H. Xu, N. Fournier-Bidoz, F. Campana, F. Berger, A. Fourquet, D. Peurien, D. Lefeuvre, Y.M. Kirova EP-1165

> Patterns of post-operative radiotherapy in breast cancer patients after neoadjuvant chemotherapy
K.M. Lopes, T.B. De Freitas, H.A. Carvalho, A.A. Pereira, S.B. Silva, S.R. Stuart, M.S. Mano, J.R. Filassi, G.N. Marta (Brazil) EP-1166

> Accelerated partial breast irradiation: a single center analysis.
K. Nugent (Ireland), D. Kelly, J. McCaffrey, M. Maher EP-1167

> Male breast cancer; a review of patients treated from 2004 - 2013 (10yrs)
P. Scott (Ghana), V. Vanderpuye, J. Yarney, N. Aryeetey, H. Ayettey, M. Dadzie, Z. Meles EP-1168

> Preoperative CT scan in tumour bed delineation after breast conserving surgery and oncoplasty
T. Saxena (India), V. Goel, G. Kadyaprath, D. Arora, A.K. Verma, P. Agarwal, P. Kumar, J. Jain, R. Shukla, P. Kumar, A. Masanta, T.R. Singh, R. Kaur, A.K. Anand EP-1169

> Hypofractionated radiotherapy for ductal carcinoma *in situ* using VMAT: acute toxicity and cosmesis
F. De Rose (Italy), A. Fogliata, D. Franceschini, C. Iftode, A.M. Ascolese, T. Comito, L. Di Brina, A. Tozzi, C. Franzese, E. Clerici, G.R. D'Agostino, P. Navarria, F. Lobefalo, M. Scorsetti EP-1170

> Thermography and association to high-grade radiation dermatitis: a prospective trial on 64 patients.
N. Leduc (France), V. Atallah, A. Petit, S. Belhomme, P. Sargos, V. Vinh-Hung EP-1171

> Post-mastectomy radiotherapy with patient-tailored bolus using 3D printing for left breast cancer
K. Yang (Republic of Korea), Y. Chung, W. Park, S.G. Ju, S.J. Huh, D.H. Choi, H. Cha, J.Y. Park, C.H. Na EP-1172

> Understanding variations in the use of hypofractionated radiotherapy for breast cáncer
I.M. Borras (Spain), J. Prades, M. Algara, J.A. Espinàs, B. Farrús, M. Arenas, V. Reyes, V. Garcia-Reglero, M.J. Cambra, E. Rubio Calatayud, L. Anglada, A. Eraso, A. Pedro, M.J. Fuentes-Raspall, V. Tuset **EP-1173**

> Impact of radiotherapy to posterior supraclavicular and posterior triangle area in breast cancer
S.H. Liu (Taiwan), Y.C. Huang, Y.J. Chen **EP-1174**

> Impact of body-mass index on setup displacement in patients with breast cancer
Y.C. Tsai (Taiwan), C.Y. Chen, J.T. Tsai **EP-1175**

> Helical tomotherapy in chest wall/breast and draining node irradiation after breast cancer surgery
V. Lancellotta (Italy), M. Iacco, S. Chierchini, E. Perrucci, I. Palumbo, L. Falcinelli, S. Saccia, S. Nucciarelli, A. Milletti, C. Aristei **EP-1176**

> Late radiation skin effects after breast conserving surgery: possible predictive clinical factors.
A. Romano (Italy), A. Rese, E. Toska, L. Faraci, M. Conson, A. Farella, R. Solla, R. Liuzzi, L. Cella, R. Pacelli **EP-1177**

> Breast radiotherapy without nodal irradiation in pT1-2 pN0-1 stage: prognostic factors and outcomes.
C. Di Carlo (Italy), M. Nuzzo, L.A. Ursini, M. Trignani, L. Caravatta, G. Di Girolamo, M. Di Nicola, D. Genovesi **EP-1178**

> Target volume definition after lumpectomy for Accelerated Partial Breast Irradiation (APBI) or boost
I.F. Ciernik (Germany), A.M. Greiß **EP-1179**

> Whole breast radiotherapy in Lateral Decubitus position: efficacy and toxicity
E. Bronsart (France), S. Dureau, H. Xu, F. Berger, F. Campana, E. Costa, A. Chilles, A. Fourquet, Y. Kirova **EP-1180**

> Dose to non-routinely delineated risk organs in post left conservative surgery conformal breast RT
M. Abdelwahed (Egypt), M.A.H. Mohamed Abdelrahman Hassan **EP-1181**

> Locoregional treatment of breast cancer with IMRT: a single center experience
I. Ratosa (Slovenia), A. Jenko, R. Hudej, F. Kos, A. Gojkovic Horvat, D. Golo, T. Marinko, M.S. Paulin Kosir, J. Gugic **EP-1182**

> Initial clinical experience with a noninvasive breast stereotactic radiotherapy device: the GammaPod
S. Feigenberg, E. Nichols, Y. Mutaf, W. Regine, S. Becker, Y. Niu, C. Yu (USA) **EP-1183**

> HDR boost decreases the risk of breast failure in invasive breast ca. with close or involved margins
J.L. Guinot (Spain), M.I. Tortajada, M.A. Santos, F. Romero, A. Moreno, V. Campo, L. Oliver, P. Santamaria, J. Fernandez, L. Arribas **EP-1184**

> Post-operative Irradiation after nipple-sparing or skin-sparing mastectomy: an international survey
G.N. Marta (Brazil), P. Poortmans, R.A. Audisio, R. Freitas Junior, A.C. De Barros, J.R. Filassi, S.M. DeSnyder, S. Meterissian, T.A. Buchholz, T. Hijal **EP-1185**

> Real-time intrafraction motion in breast radiotherapy using an optical surface scanner
D. Reitz (Germany), S. Schönecker, P. Freislederer, M. Pazos, M. Niyazi, U. Ganswindt, C. Belka, S. Corradini **EP-1186**

> Heart dose evaluation in two free-breathing and deep-breathing modes of breast cancer patients
R. Anbiae, A.R. Taji (Islamic Republic of Iran), A. Ahmari, Z. Siavashpour, M. Beigi **EP-1187**

> DIBH radiotherapy in left-sided breast cancer patients using an optical surface scanning system
S. Schönecker (Germany), M. Pazos, P. Freislederer, D. Reitz, H. Scheithauer, S. Corradini, C. Belka **EP-1188**

> Right Coroner Artery Assessment in radiotherapy of breast cancer
A. Altinok (Turkey), O. Askeroğlu, M. Cağlar, M. Doyuran, E. Cantürk, C. Erol, N. Bese **EP-1189**

> Assessment of the dose to the heart and the LAD for the left breast radiotherapy
A. Plieskienė (Lithuania), D. Burdulis, J. Remeikienė **EP-1190**

> Postmastectomy locoregional irradiation to temporary tissue-expander or permanent breast implant
M.A. Gerardi (Italy), D.P. Rojas, R. Ricotti, M.C. Leonardi, G. Riva, D. Ciardo, C.M. Francia, R. Cambria, R. Luraschi, F. Cattani, C. Fodor, F. De Lorenzi, M. Rietjens, P. Veronesi, A. Morra, V. Dell'Acqua, R. Orecchia, B.A. Jereczek-Fossa **EP-1191**

> Assessment of quality of life in phase III clinical trials of radiation therapy in breast cancer
G.N. Marta (Brazil), F.Y. Moraes, E.T. Leite, E. Chow, D. Cella, A. Bottomley **EP-1192**

> Hypofractionated external beam radiation therapy for breast cancer. The new standard?
I. Nobre Góis (Portugal), A. Ponte, J. Casalta-Lopes, T. Teixeira, P. Vicente, M. Borrego **EP-1193**

> Dose-volume relationship for acute skin erythema in patients undergoing breast irradiation
F. Badenchini (Italy), F. Bonfantini, M. De Santis, S. Gay, F. Palorini, A. Cicchetti, T. Rancati, M. Carrara, T. Giandini, E. Pignoli, R. Valdagni, L. Lozza **EP-1194**

> Regional nodal recurrences after adjuvant breast radiotherapy – are we covering the target?
L.E. Beaton (Canada), L. Nica, K. Sek, G. Ayers, C. Speers, S. Tyldesley, A. Nichol **EP-1195**

> Possible use of genetic tests: let's consider the opinion of patients
S. Gay (Italy), F. Palorini, M. De Santis, S. Frasca, C. West, T. Rattay, T. Rancati, R. Valdagni, L. Lozza **EP-1196**

> Results in breast cancer patients who received adjuvant radiation after immediate reconstruction
A. Giraldo Marin (Spain) **EP-1197**

> Low risk breast cancer patients' supportive care needs and perceptions of follow-up care options
J. Kwan (Canada), J. Croke, J. Bender, T. Panzarella, K. Ubhi, F. Liu, A. Fyles, A. Koch, R. Dinniwell, W. Levin, D. McCready, C. Chung **EP-1198**

ELECTRONIC POSTER

Electronic Poster: Clinical track: Lung

> Radiotherapy for pN2 EGFR wide type adenocarcinoma and Squamous Cell Carcinoma lung cancer
S.Y. Wu (Chinese Taipei) **EP-1199**

> Early versus late PORT for pathologic stage IIIA-N2 NSCLC: a multi-institutional retrospective study
M.B. Meng (China), H.H. Wang, L. Deng, Q.L. Wen, C.Z. Zhang, X.L. Zeng, Y.L. Cui, Z.Y. Yuan, P. Wang **EP-1200**

> SLR versus SBRT for high-risk elderly patients with stage I NSCLC
H.H. Wang (China), M.B. Meng, X.L. Zeng, L. Deng **EP-1201**

> A lot to a little or a little to a lot - dose-volume relationships in thoracic tumors
C. Schröder (Germany), R. Engenhart-Cabillic, A. Buchali **EP-1202**

> Changes in pulmonary function after high dose intrathoracic radio (-chemo)therapy up to 74 Gy
C. Schröder (Germany), R. Engenhart-Cabillic, A. Buchali **EP-1203**

> Treatment outcomes and patterns of radiologic injury after tomotherapy-based SBRT for lung tumours
S. Arcangeli (Italy), L. Falcinelli, S. Bracci, A. Greco, A. Monaco, J. Dognini, C. Chiostrini, R. Bellavita, C. Aristei, V. Donato **EP-1204**

> The prognostic role of Neutrophil-to-lymphocyte ratio in limited disease small-cell lung cancer
L. Käsmann (Germany), L. Bolm, L. Motisi, S. Janssen, S.E. Schild, D. Rades **EP-1205**

> FDG-PET/CT predictive parameters of early response after SABR for lung oligometastases
R. Mazzola (Italy), N. Giaj Levra, A. Fiorentino, S. Fersino, F. Ricchetti, U. Tebano, D. Aiello, R. Ruggieri, F. Alongi **EP-1206**

> Outcomes and prognostic factors in solitary brain metastasis from small cell lung cancer
D. Bernhardt (Germany), S. Adeberg, F. Bozorgmehr, J. Kappes, J. Hoerner-Rieber, L. Koenig, J. Debus, M. Thomas, A. Unterberg, F. Herth, C.P. Heussel, M. Steins, S. Rieken **EP-1207**

> Concomitant chemoradiotherapy followed by stereotactic ablative boost in non small cell lung cancer
J. Doyen (France), M. Poudenx, J. Gal, J. Otto, J. Mouroux, B. Padovani, A. Leysalle, C. Guerder, E. Chamorey, P. Bondiau **EP-1208**

> SBRT for lung metastases: retrospective analyses of tumor control and toxicity with a lower BED.
Y. Crempe (Brazil), I.P. Barbosa, C.D.O. Rodrigues, E. Gil, P.H. Zanuncio, P.L. moraes, L. Fagundes, R. Ferrigno **EP-1209**

> SBRT with FFF Beams and V-MAT for lung cancer. A mono-institutional experience.
F. Martucci (Switzerland), P. Fanti, B. Muoio, S. Cima, C. Azinwi, K. Yordanov, G. Pesce, M.C. Valli, S. Presilla, A. Richetti **EP-1210**

> How selected are patients in clinical trials of radiotherapy for non-small cell lung cancer?
M. Berry (Australia), K. Neville, J. Ruben, L. Holloway, S. Vinod **EP-1211**

> Parenchymal and functional lung changes after stereotactic body radiotherapy for early-stage NSCLC
J. Rieber (Germany), J. Dern, D. Bernhardt, L. König, S. Adeberg, A. Paul, J. Kappes, H. Hoffmann, J. Debus, C.P. Heussel, S. Rieken **EP-1212**

> Long-term outcomes of stereotactic ablative radiotherapy for stage I non-small cell lung cancer
S. Lee (Republic of Korea), S.Y. Song, S.S. Kim, S.W. Lee, S.D. Ahn, S.M. Yoon, Y.S. Kim, J.H. Park, J.H. Kim, E.K. Choi **EP-1213**

> Stereotactic ablative radiotherapy in clinical stage I (<5cm) non-small cell lung cancer
S.J. Ahn (Republic of Korea), W. Jeon, Y.C. Kim, I.J. Oh, J.U. Jeong, M.S. Yoon, J.Y. Song, T.K. Nam, W.K. Chung **EP-1214**

> Risk factors of radiation pneumonitis after SRT: the usefulness of the PTV to lung volume ratio.
T. Ueyama (Japan), T. Arimura, K. Takumi, F. Nakamura, R. Higashi, S. Ito, Y. Fukukura, T. Umanodan, M. Nakajo, C. Koriyama, T. Yoshiura **EP-1215**

> Impact of the radiation dose on the pulmonary perfusion assessed using lung scintigraphy
B. De Bari (France), S. Godin, M. Zeverino, L. Deantonio, T. Breuneval, J. Prior, J. Bourhis, R. Moeckli, M. Ozsahin **EP-1216**

> Non-small cell lung cancer invading the vertebra: what is the optimal strategy for radiation?
S. Appel (Israel), J. Goldstein, Z. Symon, Y. Lawrence, M. Ben aiun, N. Honig, T. Rabin **EP-1217**

> Prognostic values of tumour markers in lung cancer patients treated with definitive chemoradiotherapy
J.H. Chung (Republic of Korea), J.S. Kim **EP-1218**

> Concomitant radiotherapy and TKI in EGFR mutant or ALK positive stage IV non-small cell lung cancer
P. Borghetti (Italy), M. Bonù, E. Roca, E. Salah, A. Baiguini, S. Pedretti, M. Maddalo, M. Buglione, S. Magrini **EP-1219**

> Sites of recurrent disease and prognostic factors in SCLC patients treated with radiochemotherapy
R. Bütof (Germany), C. Gumina, C. Valentini, A. Sommerer, S. Appold, D. Zips, S. Löck, M. Baumann, E.G.C. Troost **EP-1220**

> Adherence to lung cancer guidelines and its impact on survival
I. Linares (Spain), M. Sánchez, J. Pérez-Alija, E. Molina, Y. Chang-Chan, R. Guerrero, J. Expósito **EP-1221**

> Beclin-1 expression of circulating tumor cells in non-small cell lung cancer patients.
C. Prieto Prieto (Spain), D. De Miguel **EP-1222**

> Comparing concurrent versus sequential chemoradiotherapy in locally advanced NSCLC
G. Wei (China), G. Xiaobin, G. Xian-Shu, M. Mingwei, C. Ming, P. Chuan **EP-1223**

> Therapeutic effects of accelerated hyperfractionation and conventional fractionation CRT on NSCLC
T. Mitsuyoshi (Japan), Y. Matsuo, T. Shintani, Y. Iizuka, W.A. Mampuya, H. Nagai, H. Ozasa, Y.H. Kim, T.F. Chen-Yoshikawa, M. Sonobe, N. Nakajima, A. Yoshizawa, T. Mizowaki, H. Date, M. Hiraoka **EP-1224**

> Atlas-based segmentation reduces inter-observer variation and delineation time for OAR in NSCLC
W. Van Elmpt (The Netherlands), J. Van der Stoep, J. Van Soest, T. Lustberg, M. Gooding, A. Dekker **EP-1225**

> Stereotactic robotic body radiotherapy for patients with pulmonary oligometastases
P. Berkovic (Belgium), A. Gulyban, L. Swenen, D. Dechambre, P. Viet Nguyen, N. Jansen, C. Mievis, N. Bartelemy, P. Lovinfosse, M. Baré, F. Lakosi, L. Janvary, P.A. Coucke **EP-1226**

> Neutrophil-lymphocyte ratio and a dosimetric factor for symptomatic radiation pneumonitis in NSCLC
Y.H. Lee, H.S. Choi, H. Jeong, K.M. Kang (Republic of Korea), J.H. Song, W.S. Lee, G.W. Lee, H.N. Song, H.G. Kim, M.H. Kang, D.Y. Rhee, B.K. Jeong **EP-1227**

> UK NCRI CTRad consensus on drug and radiotherapy combination platform studies in NSCLC
G. Hanna (UK), F. McDonald, A. Greystoke, M. Forester, S. Brown, E. Hall, C. Faivre-Finn, S. Harrow, M. Hatton, A. Chalmers **EP-1228**

> Phase II trial of concurrent erlotinib in locally advanced non-small cell lung cancer (LA-NSCLC)
O. Hansen (Denmark), M. Knap, A. Khalil, C. Nyhus, C. Brink, L. Hoffmann, T. Schytte **EP-1229**

> Post-operative radiotherapy (PORT) in patients with resected non small cell lung cancer (NSCLC)
T. Schimek-Jasch (Germany), M. Kuppler, S. Adebahr, A.L. Grosu, U. Nestle **EP-1230**

> Early Clinical outcome of the first lung SBRT program in a developing country
S. Wadi-Ramahi, J. Khader (Jordan), F. Abu Hijli, H. Ghatasheh, A. Sulaiman **EP-1231**

> Patient-reported toxicity in twice-daily (BID) versus once-daily (OD) chemoradiotherapy for LS-SCLC
J. Lodeweges (The Netherlands), A. Niezink, H. Elzinga, E. Haan-Stijntjes, N. Dollekamp, O. Chouvalova, J. Ubbels, M. Woltman-van Iersel, A. Van der Leest, J. Langendijk, J. Widder **EP-1232**

> Early results of SBRT as a salvage treatment after thoracic radiotherapy.
A. Navarro-Martin (Spain), I. Guix, J. Mases, M. Mutto, E. Nadal, F. Guedea **EP-1233**

> Prophylactic Cranial Irradiation (PCI) in small-cell lung cancer: a single-institution experience.
M. Konkol (Poland), M. Matecka-Nowak, M. Trojanowski, A. Kubiak, P. Milecki EP-1234

> Stereotactic body radiotherapy for lung metastases: retrospective analysis of a single-center
H. Herrmann (Austria), C. Proksch, K. Dieckmann EP-1235

> Validation of the clinical diagnostic method for solitary pulmonary nodules before SBRT in Navarra
M. Campo (Spain), I. Visus, S. Flamarique, M. Barrado, A. Martin, M. Rico, E. Martinez EP-1236

> Heart dose as a risk factor for dyspnea worsening after multimodality treatment for NSCLC and MPM
A. Botticella (Belgium), C. Billiet, G. Defraene, S. Peeters, C. Draulans, P. Nafteux, J. Vansteenkiste, K. Nackaerts, C. Dooms, C. Deroose, J. Coolen, D. De Ruysscher EP-1237

ELECTRONIC POSTER

Electronic Poster: Clinical track: Upper GI (oesophagus, stomach, pancreas, liver)

> Patterns of recurrence in patients of pT2 esophageal squamous cell carcinoma after radical resection
Y.X. Wang (China), Y.H. Gao, J. Li, R. Qiu, X.Y. Qiao EP-1238

> SBRT in patients with HCC/CCC or oligometastatic liver disease
S. Gerum (Germany), C. Heinz, C. Belka, M. Niyazi, U. Ganswindt, F. Roeder EP-1239

> Stereotactic radiotherapy in pancreatic cancer: a systematic review on pain relief
M. Buwenge (Italy), G. Macchia, F. Deodato, S. Cilla, L. Caravatta, A. Farioli, A. Guido, A. Arcelli, F. Bertini, F. Cellini, G.C. Mattiucci, M.C. Di Marco, S. Cammelli, G. Tolento, V. Valentini, L. Fuccio, A.G. Morganti EP-1240

> Successful pain relief after a short course of palliative radiotherapy in painful pancreatic cancer.
G. Ebrahimi (The Netherlands), C.R.N. Rasch, G. Van Tienhoven EP-1241

> Palliative EBRT for incurable esophageal cancer and symptomatic dysphagia-single center results
K. Yordanov (Switzerland), A. Richetti, S. Cima, G. Pesce, C. Azinwi, F. Martucci, B. Muoio, P. Fanti, M.C. Valli **EP-1242**

> A Study on predictive value of 18F-FDG PET-CT to Chemoradiation of Esophageal Cancer
J. Li (China), W. Sun **EP-1243**

> Neoadjuvant chemo radiation followed by surgery in Ca Esophagus – retrospective review from India
V. Goel (India), A.K. Anand, H.K. Chaturvedi, A. Verma, P. Agarwal, T. Saxena, R. Shukla, D. Arora, A.K. Bansal, A. Gulia, C. Garg, U. Mukherjee **EP-1244**

> A retrospective study for helical tomotherapy for radiotherapy in esophageal cancer: is it feasible?
Z. Jastaniah (France), J.B. Clavier, D. ANTONI, M. Ben Abdelghani, C. Schumacher **EP-1245**

> Definitive chemoradiotherapy for esophageal cancer: the impact of histological subtypes on survival
F.E.M. Voncken (The Netherlands), R.T. Van der Kaaij, K. Sikorska, J.M. Van Dieren, C. Grootscholten, P. Snaebjornsson, J.W. Van Sandick, B.M.P. Aleman **EP-1246**

> Exclusive chemoradiation with Carboplatin-Taxol vs Folfox-4 in locally advanced esophageal cancer.
G. Crehange (France), A. Bertaut, J.F. Bosset, J. Boustani, M. Rouffiac, F. Ghiringhelli, C. Borg, B. De Bari, J. Buffet Miny **EP-1247**

> Adjuvant radiotherapy for gastric cancer patients underwent gastrectomy and D2 lymph node dissection
Y. Wang (Taiwan), J.M. Hwang, Y.K. Chang, W.Y. Kao, H.L. Wan, S.Y. Chang, C.C. Wu **EP-1248**

> Changes in normal liver volume after high dose radiation in cancer of the liver
K. Rajamanickam (India), S. Chopra, R. Engineer, V. Ostwal, P. Patil, S. Mehta, E. Dhandpani, K. Joshi, S.K. Shrivastava **EP-1249**

> Prognostic impact of post-surgery and post-adjuvant therapy in resected pancreatic adenocarcinoma

G.C. Mattiucci (Italy), A. Arcelli, F. Bertini, F.A. Calvo, M. Falconi, G.P. Frezza, A. Guido, J.M. Herman, R.C. Miller, V. Picardi, G. Macchia, W.F. Regine, N. Sharma, M. Reni, A. Farioli, A.G. Morganti, V. Valentini **EP-1250**

> Safety and efficacy of preoperative chemoradiotherapy in patients with locally advanced EGJ cancer
Y. Li (China), X. Li, Y. Zhang, J. Geng, Y. Cai, Z. Li, K. Hu, J. Yu, J. Jin, D. Zhao, B. Qu, L. Chen, J. JI **EP-1251**

> Update of stereotactic body radiation therapy for pancreatic adenocarcinoma: efficacy and safety
X. Chen (Spain), E. Sanchez, A. Montero, O. Hernando, M. Lopez, J. Garcia, J.M. Perez, R. Ciervide, J. Valero, M. Garcia-Aranda, R. Alonso, D. Zucca, M.A. De la Casa, B. Alvarez, J. Marti, L. Alonso, P . Fernandez-Leton, C. Rubio **EP-1252**

> Interobserver variability in the target delineation of hepatocellular carcinoma.
E. Gkika (Germany), S. Tandini-Lang, S. Kirste, P. Holzner, H.P. Neeff, H.C. Rischke, T. Reese, F. Lohaus, M.N. Duma, K. Dieckmann, R. Semrau, M. Stockinger, D. Imhoff, N. Kremers, M. Häfner, N. Andratschke, U. Nestle, A.L. Grosu, M. Guckenberger, T. Brunner **EP-1253**

> DVH analysis of radiotherapy of upper gastrointestinal tumours: a model to predict toxicity.
G.C. Mattiucci (Italy), L. De Filippo, N. Dinapoli, L. Boldrini, S. Chiesa, M. Bianchi, R. Canna, F. Cellini, G. Chiloiro, F. Deodato, G. Macchia, C. Indellicati, D. Pasini, A.G. Morganti, V. Valentini **EP-1254**

> Early clinical results for esophageal brachytherapy using a novel multi-balloon HDR applicator
A.S. Taggar (USA), G.N. Cohen, P.J. Brady, J.J. Cuaron, A. Wu **EP-1255**

> Local ablative radiotherapy for liver metastasis: factors affecting local control and survival
C. Petersen (Germany), T. Gauer, T. Frenzel, M. Todorovic, A. Krüll, M. Blaschczyk **EP-1256**

ELECTRONIC POSTER

Electronic Poster: Clinical track: Lower GI (colon, rectum, anus)

> A look at pre-operative MRI accuracy at predicting rectal cancer staging post chemoradiotherapy
K. Nugent (Ireland), R. McDermott, M. Higgins, B. O'Neill **EP-1257**

> High precision SIB-IMRT versus conventional radiotherapy in anal cancer: a propensity score analysis
F. Arcadipane (Italy), A. Lepinoy, P. Franco, M. Ceccarelli, B. De Bari, L. Lestrade, G. Furfaro, M. Mistrangelo, G. Créhange, U. Ricardi **EP-1258**

> Modern intensity modulated radiotherapy with daily image guidance for anal cancer patients
B. De Bari (France), L. Lestrade, A. Franzetti-Pellanda, M. Biggiogero, M. Kountouri, O. Matziinger, R. Miralbell, J. Bourhis, M. Ozsahin, T. Zilli **EP-1259**

> Helical tomotherapy with daily image guidance for rectal cancer patients
B. De Bari (France), A. Franzetti-Pellanda, A. Saidi, M. Biggiogero, D. Hahnloser, D. Wagner, M. Montemurro, J. Bourhis, O. Ozsahin **EP-1260**

> Hypofractionated radiotherapy for inoperable rectal cancer: a retrospective analysis 2007 to 2015
N. Abdul Satar (UK), A. Sibtain, C. Cottrill, T.M. Richards **EP-1261**

> EBRT And HDRBT in rectal cancer patients who are medically unfit or refuse surgery
C.L. Chiang (Hong Kong SAR China), V.W.Y. Lee, C.S.Y. Yeung, M.Y.P. Wong, F.A.S. Lee, S.Y. Tung **EP-1262**

> Short course radiotherapy, surgery and chemotherapy for stage IV rectal cancer with liver metastasis.
L. Díaz Gómez (Spain), A. Seguro, M. Macias, E. Gonzalez, I. Villanego, L. De Ingunza, V. Díaz, L. Gutierrez, M. Salas, J. Jaén **EP-1263**

> Metabolic response and change in CEA level in rectal cancer patients treated with neoadjuvant CRT
T.K. Nam (Republic of Korea), J. Jeong, K. Ahn, Y. Kim, M. Yoon, J. Song, S. Ahn, W. Chung **EP-1264**

> Image-guided SIB-IMRT for the treatment of anal cancer patients
F. Arcadipane, P. Franco (Italy), S. Martini, G. Furfaro, M. Ceccarelli, M. Mistrangelo, N. Rondi, P. Cassoni, P. Racca, U. Ricardi **EP-1265**

> In silico evaluation of subcutaneous skin dose associated to use of MRIdian MRI- 60Co System
G.C. Mattiucci (Italy), L. Boldrini, D. Cusumano, L. Azario, M. Ferro, S. Chiesa, G. Chiloiro, N. Dinapoli, M.A. Gambacorta, C. Masciocchi, E. Placidi, D. Piccari, M.V. Antonelli, M. Rapisarda, S. Teodoli, M. Balducci, A. Piermattei, F. Cellini, V. Valentini EP-1266

> In silico evaluation of the impact of magnetic field on dose distribution using of MRIdian MRI- 60Co
D. Cusumano (Italy), L. Boldrini, L. Azario, S. Teodoli, M. Balducci, G.C. Mattiucci, S. Chiesa, G. Chiloiro, N. Dinapoli, M.A. Gambacorta, C. Masciocchi, D. Piccari, M. Rapisarda, M.V. Antonelli, M. Ferro, E. Placidi, A. Piermattei, F. Cellini, V. Valentini EP-1267

> Tumour response according to NK cell change during preoperative chemoradiotherapy in rectal cancer
J. Heo (Republic of Korea), Y.T. Oh, O.K. Noh, M. Chun, J.E. Park, S.R. Cho EP-1268

> Comparison of 2 and 3 arc VMAT versus fixed field IMRT and proton beam therapy in anal cancer
C. Kronborg (Denmark), E.E. Wilken, J. Hansen, L. Nyvang, J.B. Petersen, E. Serup-Hansen, K.L.G. Spindler EP-1269

> Clinical outcome of non-metastatic rectal cancer patients with extremely high cea level
S.H. Youn (Republic of Korea), D.Y. Kim, T.H. Kim, S.Y. Kim, J.H. Baek, Y.J. Cha, H.J. Chang, M.J. Kim, S.C. Park, J.H. Oh EP-1270

> Is 3D-CRT still a valid option in radical radiochemotherapy of anal carcinoma in the era of IMRT?
S. Shakir (Canada), A. Garant, S. Alshehri, D. Slobodan, T. Alcindor, T. Vuong EP-1271

> Impact of Ki67 on pathological complete response rate after neoadjuvant CRT in cT3N0M0 rectal cancer
D. Adua (Italy), L. Giaccherini, A. Guido, D. Cuicchi, F. Di Fabio, F.L. Rojas Llimpe, G. Macchia, S. Cammelli, L. Fuccio, A. Ardizzoni, A.G. Morganti EP-1272

> Stereotactic body radiation therapy (SBRT) for pelvic re-irradiation
Y. Augustin (UK), C. Chaw, N. Van As, K. Aitken EP-1273

> Impact of concomitant radiotherapy boost in locally advanced rectal cancer: dose escalation
M.A. Estornell (Spain), D. Martinez, V. Morillo, M. López, M. Soler, J.L. Monroy, A.V. Navarro, A. Soler-Rodriguez **EP-1274**

> Patients with locally advanced rectal cancer (LARC): predictive factors of pathological response
S. Montrone (Italy), A. Sainato, R. Morganti, C. Vivaldi, B. Manfredi, C. Laliscia, M. Cantarella, G. Coraggio, G. Musettini, A. Gonnelli, G. Masi, P. Buccianti, F. Pasqualetti, F. Paiar **EP-1275**

> Clinic and radiobiology of hypofractionated radiotherapy for metastatic liver tumors. Pilot results.
T. Latusek (Poland), L. Miszczyk, J. Rembak-Szynkiewicz **EP-1276**

> Optimising RT dose for anal cancer – the development of three clinical trials in one platform
D. Sebag-Montefiore (UK), R. Adams, S. Bell, L. Berkman, D. Gilbert, R. Glynne-Joones, V. Goh, W. Gregory, M. Harrison, L. Kachnic, M. Lee, L. McParland, R. Muirhead, B. O'Neil, G. Hutchins, S. Rao, A. Renehan, A. Smith, G. Velikova, M. Hawkins **EP-1277**

> FMISO-PET and perfusion CT at baseline and week 2 CRT as predictive markers for response in rectal cancer
T. Greenhalgh (UK), J. Wilson, T. Puri, J. Franklin, L. Wang, R. Goldin, K. Chu, V. Strauss, M. Partridge, T. Maughan **EP-1278**

> Tumour response after short course radiotherapy for rectal cancer: immediate versus delayed surgery
M. Cruz (Portugal), C. Sousa, D. Branco, T. Serra, M. Areia, J. Brandão, G. Melo **EP-1279**

> Clinical outcomes of anal squamous cell carcinoma, treated with IMRT, using UK guidance.
S. Sengupta (UK), S. Padmanaban, C. Jacobs, R. Muirhead **EP-1280**

> Feasibility and toxicity analysis of dose-escalation by SIB/VMAT schedule in rectal cancer patients
A. Re (Italy), G. Chiloiro, M.A. Gambacorta, F. Cellini, A. Pesce, D. Marchesano, G.C. Mattiucci, S. Manfrida, V. Valentini **EP-1281**

> Clinical and pathological prognostic factors in locally advanced rectal cancer (LARC)

S. Montrone (Italy), A. Sainato, R. Morganti, C. Vivaldi, C. Laliscia, B. Manfredi, G. Coraggio, M. Cantarella, G. Musettini, D. Delishaj, E. Lombardo, A. Cristaudo, F. Orlandi, G. Masi, P. Buccianti, A. Falcone, F. Pasqualetti, F. Paiar EP-1282

> Short course radiation therapy for locally advanced rectal cancer
I. Casalta Lopes (Portugal), A. Ponte, I. Nobre-Góis, T. Teixeira, M.R. Silva, M. Borrego EP-1283

> Impact of surgical delay after long-course radiochemotherapy in rectal cancer
T.M. Dos Santos Teixeira (Portugal), A. Ponte, J. Casalta.Lopes, I. Nobre-Góis, M.R. Silva, R. Lebre, A. Barros, M. Borrego EP-1284

ELECTRONIC POSTER

Clinical track: Gynaecological (endometrium, cervix, vagina, vulva)

> Neutrophilia in locally advanced cervical cancer: biomarker for image-guided adaptive brachytherapy?
C. Chargari, A. Escande (France), C. Haie-Meder, P. Maroun, S. Gouy, R. Mazeron, T. Leroy, E. Bentivegna, P. Morice, E. Deutsch EP-1285

> MRI vs clinical assessment in staging and prediction of recurrence in carcinoma cervix treatment
A. Mintu Mathew (India), S. Aravindh Anand EP-1286

> 10-Year outcomes on patients receiving radical radiotherapy for cervical cancer
K. Woo, L. Davis (UK), M. Light, L. Croydon, M. Powell EP-1287

> Correlation between PET/CT primary tumor FDG uptake and lymph node metastases in cervical cancer
G. Ugurluer (Turkey), B. Atalar, H.A. Saran Ikizler, N. Sozer, M. Kibar, M. Serin, E. Ozyar EP-1288

> Use of image guided brachytherapy reduces late toxicity for elderly patients with cervical cancer
D.K. Daijiro Kobayashi (Japan), N.O. Noriyuki Okonogi, M.W. Masaru Wakatsuki, H.K. Hiroki Kiyohara, T.O. Tatsuya Ohno, S.K. Shingo Katoh, T.N. Takashi Nakano, T.K. Tadashi Kamada EP-1289

> Helical tomotherapy plus brachytherapy boost in cervical cancer: a double dose escalation
G. Cattari (Italy), E. Delmastro, A. Mranti, S. Bresciani, S. Squintu, E. Garibaldi, P. Gabriele **EP-1290**

> Does concomitant boost using conformal therapy maximize local control in Stage III.B cervical cancer
R. Santosham (India) **EP-1291**

> Prognostic factors of patients with cancer of uterine cervix in chemo-irradiation era.
M. Anjanappa (India), F. James, A. Kumar, S. Mathews, J. Joseph, P.S. George, A. Mathew **EP-1292**

> Clinical outcome of prophylactic PAN irradiation for locally advanced cervical cancer
K. Fukuda (Japan), Y. Nishimura, K. Nakamatsu **EP-1293**

> Interfractional motion of vaginal cuff after hysterectomy in gynecologic cancer
S. Chun (Republic of Korea), K.Y. Eom, H. Kim **EP-1294**

> Role of postoperative adjuvant radiotherapy in early stage cervical cancer without high risk factors
W. Jung (Republic of Korea), J. Kim, Y.J. Kim, J. Lee, K. Kim, S. Jeong **EP-1295**

> Adjuvant radiotherapy in endometrial cancer: Volumetric Modulated Intensity Arc Therapy vs 3DRT
C. Iftode (Italy), A. Tozzi, E. Clerici, L. Di Brina, G.R. D'Agostino, A.M. Ascolese, T. Comito, D. Franceschini, C. Franzese, F. De Rose, S. Tomatis, P. Mancosu, P. Navarria, M. Scorsetti **EP-1296**

> Update: Phase III randomised trial on electro-hyperthermia plus chemoradiation for cervical cancer
C. Minnaar (South Africa), J. Kotzen, A. Baeyens **EP-1297**

> Radiotherapy in invasive vaginal carcinoma: a systematic review
M. Buwenge (Italy), G. Macchia, M. Ferioli, L. Giaccherini, A. Arcelli, A. Galuppi, S. Cammelli, A.M. Perrone, P. De Iaco, M. Boccardi, L. Tagliaferri, G. Ferrandina, F. Deodato, S. Cilla, G.P. Frezza, A.G. Morganti **EP-1298**

> Nomogram prediction for overall survival of patients diagnosed with cervical cancer.
S. Jagadeesan (India) EP-1299

> Stereotactic radiotherapy for oligometastatic ovarian cancer patients: preliminary results.
S. Ronchi (Italy), R. Lazzari, A. Surgo, S. Volpe, S. Comi, F. Pansini, E. Rondi, C. Fodor, R. Orecchia, B.A. Jereczek-Fossa EP-1300

> Early toxicity for image guided adaptive radiochemotherapy including brachytherapy in cervix cancer
K. Majercakova, D. Najjari, M. Buschmann, A. Sturdza, E. Dörr, R. Pötter, D. Georg, Y. Seppenwoolde (Austria) EP-1301

> Acute toxicity of prophylactic para-aortic chemoradiation for cervical cancer treated in IMAT era
N. Ballari (India), B. Rai, R. Miriyala, A. Bahl, B.R. Mittal, S. Ghoshal EP-1302

> Clinical outcomes of patients with advanced cervical cancer and percutaneous nephrostomy : An audit
R. Salunkhe, S. Chopra (India), S. Kulkarni, R. Engineer, U. Mahantshetty, N. Shetty, J. Ghosh, S. Gupta, S.K. Shrivastava EP-1303

> A moderate ipofractionation schedule with IMRT in preoperative locally advanced cervical cancer
R. Autorino (Italy), M. Campitelli, A. Martino, A. Nardangeli, G. Mattiucci, V. Frascino, D. Smaniotto, A. Valentini, G. Ferrandina, M. Gambacorta EP-1304

> Hemoglobin monitoring in endometrial carcinoma: how preoperative anemia impacts overall survival.
K. Holub, A. Biete (Spain) EP-1305

> New pre-treatment eosinophiles-related ratios as predictive factors for OS in endometrial carcinoma.
K. Holub (Spain), A. Biete EP-1306

> New neutrophils-related ratios as a novel predictive biomarkers for endometrial carcinoma.
K. Holub (Spain), A. Biete EP-1307

ELECTRONIC POSTER

Clinical track: Prostate

> A prospective trial of hypofractionation salvage radiation therapy after radical prostatectomy
P. Bulychkin (Russian Federation), S. Tkachev, A. Nazarenko **EP-1308**

> Is it necessary to make a re-plan during IMRT for prostate cancer due to change in prostate size?
O. Tanaka (Japan), H. Komeda, T. Iida, M. Tamaki, K. Seike, T. Yokoyama, D. Kawaguchi, S. Hirose, S. Fujimoto **EP-1309**

> 68Ga-PSMA-PET/CT imaging of localized prostate cancer patients for IMRT with integrated boost
L. Thomas, S. Kantz, A. Hung, D. Monaco, M. Essler, H. Strunk, C. Thomas, W. Laub (USA), R. Bundschuh **EP-1310**

> Beyond IMRT for prostate cancer: the effect of modern technique on treatment quality and outcome
I. Kao (USA), A. Zucker, J. Timmins, A. Wong, A. Woodall, E. Loizides **EP-1311**

> Long terms outcome in prostate cancer with image guided and intensity modulated radiation therapy.
C. Salas (Spain), L. Gutiérrez, S. Garduño, M. Macias, L. Ingunza, I. Villanego, V. Díaz, E. Gonzalez, L. Díaz, A. Ureña, L. Quiñones, J. Jaén **EP-1312**

> 18 F NaF PET use in prostate cancer staging in a single centre 2013-2016: retrospective review
M. Higgins (Ireland), J. Murphy, K. Nugent, K. O'Regan, P. Kelly **EP-1313**

> Changes in hormonal therapy during the first 24 months of treatment: a longitudinal cohort study
C. Hennequin (France), D. Rossi, M. Zerbib, J.L. Moreau, A. Ruffion, Y. Neuzillet, T. Lebret **EP-1314**

> Prostate cancer lymph nodal disease: SBRT only or extensive prophylactic irradiation and boost?
A. Fodor (Italy), C. Sini, C.L. Deantoni, C. Fiorino, C. Cozzarini, B. Noris Chiorda, I. Dell'Oca, M. Picchio, P. Mangili, E. Incerti, R. Calandrino, L. Gianolli, N.G. Di Muzio **EP-1315**

> Moderate hypofractionation RT in post-prostatectomy setting:report on feasibility and acute toxicity

S. Fersino (Italy), U. Tebano, R. Mazzola, F. Ricchetti, N. Giaj Levra, A. Fiorentino, G. Sicignano, S. Naccarato, R. Ruggeri, F. Alongi **EP-1316**

> PET-guided pelvic re-irradiation for nodal recurrences of prostate cancer
P. Dirix (Belgium), G. De Kerf, B. De Laere, G. Buelens, P. Huget, D. Verellen, P. Meijnders **EP-1317**

> Is hypofractionation combined to WPRT effective in high risk prostate cancer patients?
N.G. Di Muzio (Italy), A. Fodor, C.L. Deantoni, B. Noris Chiorda, S. Broggi, P. Mangili, I. Dell'Oca, A. Chiara, P. Passoni, N. Slim, M. Pasetti, R. Calandrino, C. Cozzarini, C. Fiorino **EP-1318**

> "Adjuvant"/ radical radiotherapy in prostate cancer patients with synchronous bone oligometastasis
C.L. Deantoni (Italy), A. Fodor, C. Sini, B. Noris Chiorda, C. Cozzarini, C. Fiorino, I. Dell'Oca, M. Picchio, E. Incerti, P. Mangili, R. Calandrino, L. Gianolli, N. Di Muzio **EP-1319**

> Phase II Study of SBRT as treatment for oligometastases in prostate cancer: trial in progress.
A. Conde Moreno (Spain), J. Lopez Torrecilla, J. Pastor Peidro, A. Hervás Morón, F. López-Campos, A. Mendez Villamón, M.M. Puertas Valiño, A. Sola Galarza, M. Rico Oses, P. Samper Ots, L.A. Pérez-Romasanta, C. Ibañez Villaoslada, J. Valero Albarrán, N. Ortiz Rodil, F. García Piñon, C. Ferrer Albiach **EP-1320**

> Salvage radiotherapy in locoregional macroscopically relapsed prostate cancer:retrospective analysis
A. Bruni (Italy), G. Ingrosso, E. Mazzeo, L.M. Lamin, B. Lanfranchi, M. Andolina, P. Morelli, I. Turturici, G. Guidi, R. Santoni **EP-1321**

> Performance diagnosis of 11C-choline PET/CT in prostate cancer
P.M. Samper Ots (Spain), A. Luis Cardo, M.A. Cabeza Rodriguez, C. Vallejo Ocaña, L.A. Glaria Enriquez, M.L. Couselo Paniagua, J. Olivera Vegas **EP-1322**

> Role of 68Ga-PSMA PET/CT in radiotherapy for prostate cancer: A single centre experience
N.S. Hegemann (Germany), W.P. Fendler, A. Buchner, C. Stief, M. Niyazi, P. Bartenstein, C. Belka, U. Ganswindt **EP-1323**

> Single-fraction HDR brachytherapy boost in combination to EBRT for prostate cancer
A. Huertas (France), P. Blanchard, L. Calmels, M. Edouard, A. Bossi **EP-1324**

> Risk adapted dose-intensified postoperative tomotherapy RT in prostate cancer using a SIB.
M. Beck (Germany), T. Barelkowski, A.H. Thieme, S. Wecker, D. Kaul, W. Wlodarczyk, V. Budach, P. Wust, P. Ghadjar **EP-1325**

> Long term patients clinical outcome after salvage post-prostatectomy Radiation Therapy (RT)
P. Pietro Gabriele (Italy), E. Elisabetta Garibaldi, A. Angelo Maggio, E. Elena Delmastro, A. Andrea Galla, A. Sara Bresciani, D. Domenico Gabriele, M. Michele Atasi **EP-1326**

> Decision Support System to implant a rectum spacer during prostate cancer radiotherapy
Y. Van Wijk (The Netherlands), B. Vanneste, S. Walsh, S. Van der Meer, B. Ramaekers, W. Van Elmpt, M. Pinkawa, P. Lambin **EP-1327**

> Long term patients clinical outcome after adjuvant postprostatectomy Radiation Therapy
P. Pietro Gabriele (Italy), A. Angelo Maggio, E. Elena Delmastro, E. Elisabetta Garibaldi, S. Sara Bresciani, M. Marco Gatti, A. Andrea Galla, M. Michele Stasi, D. Domenico Gabriele **EP-1328**

> IG-SBRT for localized prostate cancer: clinical results and late toxicity of a phase-II study
A. Magli (Italy), E. Moretti, A. Tullio, C. Foti, M. Crespi, M. Urpis, A. Prisco, M.R. Malisan **EP-1329**

> Predictive factors for urinary toxicity in patients treated with radical ebrt for prostate cancer
C. Pisani (Italy), A. Galla, D. Beldì, G. Apicella, G. Loi, M. Krengli **EP-1330**

> Efficacy and safety of re-irradiation of locally recurrent prostate cancer with fff-vmat
G.R. D'Agostino (Italy), C. Franzese, L. Di Brina, S. Tomatis, C. Iftode, D. Franceschini, E. Clerici, G. Reggiori, A. Tozzi, P. Navarria, M. Scorsetti **EP-1331**

> Contouring variability with CT and MRI of prostate cancer for radiation planning
A. Otero-Romero (Spain), A. Pérez-Rozos, R. Correa-Generoso,

I. Jerez-Sainz, M.J. García-Anaya, I. Zapata-Martínez, A. Román-Jobacho, M.D. Toledo-Serrano, R. Ordoñez-Marmolejo, I. García-Ríos, J. Goméz-Millan, J.A. Villalobos-Martín, T. Díaz-Antonio, J.A. Medina-Carmona **EP-1332**

> Impact of 18F-Choline PET scan acquisition time on delineation of GTV in Prostate cancer
C. Parkinson (UK), J. Chan, I. Syndikus, C. Marshall, J. Staffurth, E. Spezi **EP-1333**

> Stereotactic radiotherapy with cyberknife® system in localized prostate cancer
S. Falivene (Italy), V. Borzillo, R. Di Franco, G. Totaro, V. Ravo, G. Quarto, D. Sorrentino, S. Perdonà, P. Muto **EP-1334**

> Hypofractionated versus conventional radiotherapy in intermediate- to high-risk prostate cancer
W. Guo (China), X.S. Gao, X.B. Gu, M.W. Ma **EP-1335**

> Effect of bladder,trigone,urethra doses on acute genitourinary toxicity in prostate cancer treatment
L.Z. Arican (Turkey), N. Akturk, K. Meltem, B. Aydin, H. Ellidokuz, I. Bilkay Gorken **EP-1336**

> High hypofractionation using beacon transponders in intermediate-risk prostate cancer: first results
L. Di Brina (Italy), G. D'agostino, C. Franzese, D. Franceschini, T. Comito, F. De Rose, P. Navarria, A. Tozzi, C. Iftode, A. Ascolese, E. Clerici, L. Pasini, A. Benetti, M. Scorsetti **EP-1337**

> High precision radiotherapy for early prostate cancer with concomitant boost to the dominant lesion.
G. Riva (Italy), G. Timon, D. Ciardo, A. Bazani, D. Maestri, D. De Lorenzo, F. Pansini, R. Cambria, F. Cattani, G. Marvaso, D. Zerini, D.P. Rojas, S. Volpe, F. Golino, V. Scroffi, C. Fodor, G. Petralia, O. De Cobelli, R. Orecchia, B.A. Jereczek-Fossa **EP-1338**

> Feasibility and efficacy of moderately hypofractionated radiotherapy in high risk prostate cancer
G. Marvaso (Italy), G. Riva, C. Bassi, C. Fodor, D. Ciardo, D. Zerini, G. Timon, A. Surgo, A. Maucieri, F. Pansini, P. De Marco, F. Cattani, O. De Cobelli, R. Orecchia, B. Jereczek-Fossa **EP-1339**

> Comparing dosimetry and toxicity of 5-field IMRT versus VMAT for prostate and pelvic nodal irradiation
P. Turner (UK), S. Jain, D. Mitchell, J. Harney, F. Houghton, J. McAleese, D. Stewart, A. Hounsell, D. Irvine, G. Corey, K. Tumelty, K. Thompson, J. O'Sullivan **EP-1340**

> Pelvic SABR with HDR boost in intermediate and high risk prostate cancer (spare): early results
H.B. Musunuru, A. Deabreu, M. Davidson, A. Ravi, J. Hlou, L. Ho, P. Cheung, D. Vesprini, S. Liu, W. Chu, H. Chung, L. Zhang, A. Loblaw (Canada) **EP-1341**

> Salvage stereotactic body radiotherapy for lymph node oligorecurrent prostate cancer
G. Fanetti (Italy), C. Fodor, D. Ciardo, L. Santoro, C.M. Francia, M. Muto, A. Surgo, D. Zerini, G. Marvaso, G. Timon, P. Romanelli, E. Rondi, S. Comi, F. Cattani, D.V. Matei, M. Ferro, G. Musi, F. Nolè, O. De Cobelli, P. Ost, R. Orecchia, B.A. Jereczek-Fossa **EP-1342**

> Is stereotactic body radiation therapy a viable option for elderly patients with prostate cancer?
C. Franzese (Italy), G. D'agostino, L. Di Brina, L. Cozzi, T. Comito, D. Franceschini, F. De Rose, P. Navarria, E. Clerici, A. Ascolese, A. Tozzi, C. Iftode, S. Tomatis, M. Scorsetti **EP-1343**

> Long-term quality of life after high-dose-rate brachytherapy boost for prostate cancer
W. Busser (The Netherlands), I. Korfage, S. Aluwini **EP-1344**

> Dosimetric effect of seed-based prostate localisation on pelvic lymph nodes in high-risk prostate cancer
R. Valentine (UK), E. Miguel Chumacero **EP-1345**

> Oligorecurrent nodal prostate cancer: long-term results of an elective nodal irradiation approach
S. Tran (Switzerland), S. Jorcano, T. Falco, G. Lamanna, R. Miralbell, T. Zilli **EP-1346**

> Treatment outcomes with hypofractionated high-dose radiation therapy for prostate cancer
D. Candini (Spain), F. López Campos, C. Vallejo Ocaña, M. Martín Martín, A. Hervás Morón **EP-1347**

> Set-up errors in prostate cancer radiotherapy based on cone-beam computed tomography.
M. Trignani (Italy), G. Caponigro, M. Di Biase, P. Bagalà, M.D. Falco, A. Vinciguerra, A. Augurio, M. Di Tommaso, L. Caravatta, D. Genovesi **EP-1348**

> Adjuvant hypofractionated radiotherapy for prostate cancer: acute toxicity
S. Saldi (Italy), R. Bellavita, I. Palumbo, C. Mariucci, E. Arena, M. Lupattelli, M. Mendichi, M. Tenti, F. Tamburi, V. Bini, C. Aristei **EP-1349**

> Stereotactic re-irradiation for prostate cancer recurrence after upfront surgery and radiotherapy
V. Di Cataldo (Italy), G. Simontacchi, B. Detti, M. Loi, P. Bonomo, L. Masi, R. Doro, I. Bonucci, S. Cipressi, D. Greto, M. Mangoni, I. Desideri, I. Meattini, S. Scoccianti, E. Olmetto, C. Muntoni, G.A. Carta, L. Livi **EP-1350**

> Stereotactic radiotherapy in recurrent prostate cancer previously treated by radical irradiation
M. Loi (Italy), B. Detti, G. Simontacchi, V. Di Cataldo, P. Bonomo, L. Masi, R. Doro, I. Bonucci, S. Cipressi, I. Desideri, D. Greto, M. Perna, V. Carfora, G. Francolini, I. Meattini, M. Mangoni, S. Scoccianti, L. Livi **EP-1351**

> Single-fraction stereotactic body radiotherapy for nodal oligorecurrent prostate cancer
M. Loi (Italy), G. Simontacchi, B. Detti, V. Di Cataldo, P. Bonomo, L. Masi, R. Doro, I. Bonucci, S. Cipressi, I. Desideri, D. Greto, C. Becherini, C. Delli Paoli, R. Grassi, M. Lo Russo, I. Meattini, S. Scoccianti, M. Mangoni, L. Livi **EP-1352**

> Salvage hypofractionated radiotherapy for prostate cancer: acute toxicity
S. Saldi (Italy), R. Bellavita, I. Palumbo, C. Mariucci, E. Arena, M. Lupattelli, A. Podlesko, S. Russo, R. Dottorini, V. Bini, C. Aristei **EP-1353**

> Delayed salvage radiotherapy for macroscopic local recurrence after radical prostatectomy
M. Shelan (Switzerland), S. Odermatt, B. Bojaxhiu, O. Elicin, D.M. Aebersold, A. Dal Pra **EP-1354**

> Comparing toxicity in IMRT and particle therapy of prostate cancer in a ROCOCO in silico trial
Y. Van Wijk (The Netherlands), E. Roelofs, B. Vanneste, S. Walsh, P. Lambin **EP-1355**

> SBRT benefit in oligometastatic prostate cancer patients detected by [18F]fluoromethylcholine PET/CT
E. Bouman-Wammes (The Netherlands), J.M. Van Dodewaard- de Jong, M. Dahele, M.C.F. Cysouw, O.S. Hoekstra, A.H.M. Piet, A.J.M. Van den Eertwegh, H.M.W. Verheul, D.E. Oprea-Lager, V.M. H. EP-1356

> Moderate hypofractionated-imrt of prostate bed after radical prostatectom: acute toxicity
I. Valero Albarran (Spain), A. Ruiz Herrero, A. Montero, E. Sanchez, E. Castro, D. Olmos, M. Hernandez, R. Ciervide, X. Chen, B. Alvarez, M. Garcia Aranda, M. Lopez, M. Serrano, L. Osorio, M. Asenjo, P. Fernandez Leton, A. Acosta, O. Hernando Requejo, C. Rubio EP-1357

> Prostate postoperative hypofractionated radiotherapy: a single institution experience with Tomo
S. Gomellini (Italy), B. Shima, R. Barbara, C. Caruso, A.D. Andrulli, U. De Pula EP-1358

> Pain response in a population-based study of Radium-223 for metastatic prostate cancer
S. Tyldesley (Canada), S. Parimi, E. Tsang, F. Bachand, M. Aparicio, G. Duncan, K. Sunderland, R. Olson, H. Pai, A. Alexander, V. Lapointe, K. Chi EP-1359

> Stereotactic body radiotherapy for oligometastatic prostate cancer recurrence after local treatment.
P.A. Laurent (France), E. Martin, F. Cousin, M. Quivrin, F. Bidault, F. Mazoyer, A. Bertaut, G. Crehange EP-1360

> Prostate SBRT in 5 fractions, report of 185 patients and late toxicity analysis.
P. Castro Peña (Argentina), O. Muriano, A. Henao, P. Murina, C. Niño de Guzman, D. Venencia, S. Zunino EP-1361

> Correlations between dose to small intestine and bladder volume in patients receiving pelvic IMRT
M. Alfayez (UK), A. Sadozye EP-1362

> Clinical efficacy of a dose escalated and hypofractionated pelvic IMRT study in prostate cancer
A. Khan (UK), K. Thomas, L. Truelove, M. Ferreira, S. Gulliford, H. McNair, C. Parker, R. Huddart, D. Dearnaley EP-1363

> Substratification of prostate cancer risk groups by core involvement and T stage may alter prognosis
A.B. Hopper (USA), J.P. Einck EP-1364

> Pure Hypofractionated Radiotherapy for the Treatment of Low- to Intermediate-Risk Prostate Cancer
R. Stephens (Canada), D. Gopaul, D. Panjwani, M. Lock EP-1365

ELECTRONIC POSTER
Clinical track: Urology-non-prostate

> Radiotherapy aimed at functional preservation in patients with small cell carcinoma of the bladder.
H. Akamatsu (Japan), K. Nakamura, T. Ebara, K. Inaba, S. Itasaka, K. Jingu, Y. Kosaka, T. Murai, K. Nagata, T. Soejima, S. Takahashi, T. Toyoda, S. Toyoshima, K. Nemoto, T. Akimoto EP-1366

> Conservation treatment of carcinoma penis with surface mould brachytherapy
M. Anjanappa (India), A. Kumar, P. Raghukumar, F. James EP-1367

> Impact of post-operative radiotherapy in bladder cancer after loco-regional relapse.
M.J. Mañas (Spain), X. Maldonado, F. Lozano, C. Raventós, R. Morales, V. Reyes, S. Micó, D. SantaMaria, J. Carles, J. Morote, J. Giralt EP-1368

> Cystectomy with adjuvant radiotherapy for invasive bladder tumors: early results of a phase II study
M. Swimberghe (Belgium), E. Rammant, K. Decaestecker, P. Ost, S. Junius, P. Dirix, G. De Meerleer, V. Fonteyne EP-1369

> Simultaneous integrated tumour boost planning in bladder cancer: a comparison of strategies
S. Hafeez (UK), K. Warren-Oseni, H. McNair, V. Hansen, R. Huddart EP-1370

ELECTRONIC POSTER
Clinical track: Skin cancer / malignant melanoma

> Primary oesophageal melanoma responds to hypofractionated radiotherapy
K. Griffin, A. Scarsbrook, W. Merchant, G. Radhakrishna, O. Donnelly (UK) EP-1371

> Preliminar results of fractionated cyberknife stereotactic radiotherapy for uveal melanoma
I. Bossi Zanetti (Italy), M. Pellegrini, G. Beltramo, V. Ravera, A. Bergantin, A.S. Martinotti, I. Redaelli, P. Bonfanti, A. Bresolin, L.C. Bianchi, G. Staurenghi EP-1372

> Will appropriate TSEI timing help to find effective dose for patients with mycosis fungoides?
A. Chourova (Czech Republic), M. Doleckova, D. Kralova, P. Berkovsky, T. Juraskova EP-1373

> Hypofractionated radiotherapy in non-melanoma skin cancer ≥ 3 cm in elderly PTS
L. Ferella (Italy), S. Parente, G.L. Gravina, P. Bonfili, M. Di Staso, P. Franzese, M.E. La Verghetta, M. Cerasani, D. Di Genova, E. Di Cesare EP-1374

ELECTRONIC POSTER

Clinical track: Sarcoma

> Volumetric-modulated-arc-therapy versus 3D-conformal-radiotherapy for sarcoma of extremities
A.M. Ascolese (Italy), P. Navarria, P. Mancosu, S. Tomatis, A. Fogliata, P. Colombo, R. De Sanctis, A. Marrari, D. Franceschini, G.R. D'Agostino, A. Santoro, V. Quagliuolo, M. Scorsetti EP-1375

> IOERT combined with EBRT in R1-resected soft tissue sarcomas of the extremities: a pooled analysis
F. Roeder (Germany), A. De Paoli, I. Alldinger, G. Bertola, G. Boz, J. Garcia-Sabrido, M. Uhl, A. Alvarez, B. Lehner, F. Calvo, R. Krempien EP-1376

> Single institutional experience of the treatment of angiosarcoma of the scalp
H. Ihara (Japan), K. Katsui, K. Hisazumi, S. Sugiyama, K. Watanabe, T. Waki, T. Kaji, N. Katayama, M. Takemoto, O. Yamasaki, K. Iwatsuki, S. Kanazawa EP-1377

> The role of radiation therapy in the treatment of hemangiopericytoma/solitary fibrous tumour
Y.Y. Chiang (Taiwan) EP-1378

ELECTRONIC POSTER

Clinical track: Paediatric tumours

> Heart volume reduction in paediatric cancer patients during radiotherapy
I. Van Dijk (The Netherlands), J. Visser, J. Wiersma, J. Van Boggelen, B. Balgobind, L. Feijen, S. Huijskens, L. Kremer, C. Rasch, A. Bel **EP-1379**

> Impact of radiobiological models in decision making to individualize proton and photon radiotherapy
A. Chaikh (France), J. Balosso, J. Blouzard, J. Bondiau **EP-1380**

> Treatment outcomes of proton craniospinal irradiation for paediatric medulloblastoma
S.Q.E. Ho (Ireland), L.M. Mullaney, S.A. Barrett **EP-1381**

> Feasibility of proton therapy with concomitant chemotherapy for atypical teratoid rhabdoid tumors
S. Peters (Germany), M. Christiaens, S. Schulz, S. Frisch, P.H. Kramer, C. Blase, M.C. Frühwald, B. Timmermann **EP-1382**

ELECTRONIC POSTER

Clinical track: Palliation

> Evaluation of QOL and psychological response in patients treated with palliative radiotherapy
T. Takahashi (Japan), T. Yamano, K. Nishimura, N. Utsumi, M. Shimbo, S. Hatanaka, S. Ueno, Y. Iijima **EP-1383**

> Concomitant use of steroids and immunotherapy in cancer patients: a comprehensive review
A. Garant (Canada), T. Vuong **EP-1384**

> Evaluation of the spinal instability neoplastic score for spinal metastases
L. Bollen (The Netherlands), K. Groenen, W. Pondaag, C. Van Rijswijk, M. Fiocco, Y. Van der Linden, S. Dijkstra **EP-1385**

> Mobile health technologies for severely-ill and palliative care patients
G. Theile (Switzerland), V. Klass, G. Tröster, M. Guckenberger **EP-1386**

> Time trends in opioid use in cancer patients with pain: observations from administrative data

L. Barbera (Canada), C. DeAngelis, C. Earle, C. Atzema, D. Dudgeon, D. Howell, A. Husain, M.A. O'Brien, H. Seow, J. Sussman, R. Sutradhar, A. Chu, Y. Liu EP-1387

> Clinical features of bone metastases and their importance for radiotherapy
N. Bychkova (Russian Federation), E. Khmelevsky EP-1388

> Superficial hyperthermia with radiotherapy: toxicity and outcome of 62 metastatic lesions
G. Cattari (Italy), A.G. Di Dia, M. Gatti, E. Delmastro, E. Garibaldi, G. Belli, A. Salatino, P. Gabriele EP-1389

> Superior target delineation of renal cell carcinoma bone metastases on MRI vs CT
F.M. Prins (The Netherlands), J.M. Van der Velden, A.S. Gerlich, A.N.T.J. Kotte, W.S.C. Eppinga, N. Kasperts, L.G.W. Kerkmeijer EP-1390

> Digestive toxicity after conformal radiotherapy for palliative cervico-thoracic spinal metastases
G. Peyraga (France), D. Caron, Y. Metayer, Y. Pointreau, F. Denis, G. Ganem, C. Lafond, S. Roche, O. Dupuis EP-1391

> Prognostic factors for survival in patients with bone metastases
P.M. Samper Ots (Spain), M. Hernandez Miguel, E. Amaya Escobar, M.D. De las Peñas Cabrera EP-1392

> Prognostic factors for survival in patients with brain metastases
P.M. Samper Ots (Spain), M. Hernandez Miguel, E. Amaya Escobar, M.D. De las Peñas Cabrera EP-1393

> Prognostic factor for palliative radiotherapy of bone metastases in good performance-status patients
Y. Hamamoto (Japan), S. Taguchi, T. Manabe, H. Kanzaki, K. Nagasaki, N. Takata, T. Mochizuki EP-1394

> CyberKnife treatment of intraorbital metastases: a single center experience on 24 lesions.
G. Riva (Italy), M. Augugliaro, G. Piperno, A. Ferrari, E. Rondi, S. Vigorito, R. Orecchia, B.A. Jereczek-Fossa EP-1395

> Versatis® and focal neuropathic pain in cancer patients (screening tool)
C. Prieto Prieto (Spain), E. López Ramirez EP-1396

> Dose painting guided by diffusion-weighted MRI applied to recurrent glioblastoma: a phase I protocol
M. Iori (Italy), M. Galeandro, A. Botti, R. Sghedoni, P. Ciammella, M. Orlandi, M. Napoli, S. Tanzi, R. Pascarella, S. Cavuto, A. Pisanello, M. Russo, E. Cagni, D.E. Chiari, M. Campioli, C. Iotti EP-1397

> Application of radiosurgery in treatment of oligometastases
T. Chebotarova (Ukraine), N. Spizhenko, N. Lisovzka, O. Yarmak EP-1398

> Rotary-dual total skin electron beam therapy as palliative treatment for mycosis fungoides
A. Jodda (Poland), M. Pawlaczyk, M. Fundowicz, T. Piotrowski EP-1399

> Quality of life in responders after palliative radiation therapy for painful bone metastases
L.C. Mendez, J.L. Padilha, K.M. Lima, E. Chow, F.Y. Moraes, M.D.P.E. Esteves, M.F. Silva, G.N. Marta (Brazil) EP-1400

> SBRT for solitary extracranial metastases from gynecologic malignancies
M.C. Repka (USA), N. Aghdam, S. Suy, S.P. Collins, W. Barnes, B.T. Collins EP-1401

> Impact of SBRT on pain and local control for bone metastases: a systematic review and meta-analysis
I.M. Van der Velden (The Netherlands), A.S. Gerlich, E. Wong, E. Chow, M. Intven, N. Kasperts, W.S.C. Eppinga, E. Seravalli, M. Van Vulpen, H.M. Verkooijen EP-1402

> A comparison between 3D and volumetric technique in lumbar vertebral palliative irradiation
N. Ricottone (Italy), N. Cavalli, E. Bonanno, C. Marino, G. Pisasale, A. D'Agostino, A. Girlando EP-1403

> Survival time following palliative whole brain radiotherapy to treat brain metastases
A. Billfalk Kelly (Ireland), M. Dunne, C. Faul, O. McArdle, I. Fraser, J. Coffey, A. Boychak, B.D. O'Neill, D. Fitzpatrick EP-1404

> A rapid access palliative radiotherapy clinic to reduce waiting time in a regional cancer centre
M. Morris (Ireland), T. O'Donovan, B. Ofi, A. Flavin EP-1405

> Improvement in cancer pain management: the value of a joint approach in a single prospective series
V. Masiello (Italy), S. Mafrida, F. Cellini, F. Rodolà, G. Cannelli, S. Longo, L. Polidori, M. Balducci, M. Rossi, V. Valentini **EP-1406**

ELECTRONIC POSTER
Clinical track: Elderly

> Are future radiation oncologists equipped with the knowledge to manage elderly cancer patients?
L. Morris, N. Thiruthaneeswaran (Australia), M. Lehman, G. Hasselburg, S. Turner **EP-1407**

> Nutritional parameters in elderly patients with lung cancer and radiation treatment
J. Monroy Anton (Spain), L. Ribes llopis, E. Molina Luque, M. Soler Tortosa, M. Lopez Muñoz, A. Soler Rodriguez, A. Navarro Bergada, M. Estornell Gualde **EP-1408**

> Prospective study of hypofractionated radiotherapy for elderly patients with High Grade Glioma
E. Clerici (Italy), P. Navarria, A.M. Ascolese, F. Pessina, S. Tomatis, L. Cozzi, M. Simonelli, A. Santoro, C. Franzese, L. Bello, M. Scorsetti **EP-1409**

> Role of PMRT in elderly patients with T1-2 and 1 to 3 positive nodes breast cancer
L. Cao (China), M.Y. Kirova, C. Xu, K.W. Shen, J.Y. Chen **EP-1410**

> Chemo-IMRT in elderly head and neck cancer patients
I. Ahmed (India), S. Kotur, D. Sahoo, D. Sougumarane, R. Bhise, K. Vinchurkar, M. Kalloli, A. Sanikoppa **EP-1411**

ELECTRONIC POSTER
Clinical track: Other

> Quality of life of patients after high dose radiation therapy for thoracic carcinomas
C. Schröder (Germany), R. Engenhart-Cabillic, A. Buchali **EP-1412**

> IORT for treatment of recurrent tumors - a single institution analysis.
T.M. Coelho (Brazil), R.C. Fogaroli, A.C.A. Pellizzon, D.G. Castro, G.R.M. Gondim, M.L.G. Silva, M.J. Chen, A.A. Ambrosio **EP-1413**

> Toxicity of concurrent stereotactic radiotherapy and targeted or immunotherapy: a systematic review
S.G.C. Kroeze (Switzerland), C. Fritz, M. Hoyer, S.S. Lo, U. Ricardi, A. Sahgal, R. Stahel, R. Stupp, M. Guckenberger **EP-1414**

> Interventions to Address Sexual Problems in People with Cancer
L. Barbera (Canada), C. Zwaal, D. Elterman, W. Wolfman, A. Katz, K. McPherson, A. Matthew **EP-1415**

> A new model of care to improve clinical trial participation in radiation oncology
M. Grand (Australia), M. Berry, D. Forstner, S. Gillman, P. Phan, K. Wong, S. Vinod **EP-1416**

> Clinical evaluation of a fully automatic body delineation algorithm for radiotherapy
T. Fechter (Germany), J. Dolz, U. Nestle, D. Baltas **EP-1417**

> Randomized study exploring the combination of radiotherapy with two types of Acupuncture treatment
R. Asadpour, K. Kessel (Germany), D. Habermehl, T. Bruckner, S. Sertel, S. Combs **EP-1418**

> Optimal design and patient selection for interventional trials using radiogenomic biomarkers
D. De Ruysscher (The Netherlands), G. Defraene, B. Ramaekers, P. Lambin, E. Briers, H. Stobart, T. Ward, S. Bentzen, T. Van Staa, S. Kerns, C. West **EP-1419**

> Effects of Japanese traditional Kampo medicines "Goreisan" for acute radiation enteritis
H. Matsutani (Japan), T. Shimbo, H. Yoshioka, N. Yoshikawa, K. Yoshida, M. Nakata, T. Hamada, T. Komori, Y. Narumi, Y. Uesugi **EP-1420**

> Outcome by prognostic factors of AVM treated with LINAC:18 years experience, Spanish Institution
S. Cafiero (Colombia) **EP-1421**

> Pregnancy outcomes in cancer patients received radiotherapy: a nationwide population-based study
Y.J. Chiang (Taiwan) **EP-1422**

> The evaluation of sleep quality in cancer patients following the diagnosis of a metastatic site

ELECTRONIC POSTER

Physics track: Basic dosimetry and phantom and detector development

> Photoneutron flux measurement via NAA in a radiotherapy bunker with an 18 MV linear accelerator
T. Gulumser (Turkey), Y. Ceçen, A.H. Yeşil **EP-1433**

> Comparison of small-field output factor measurements
C. Oliver (Australia), V. Takau, D. Butler, I. Williams **EP-1434**

> Evaluation of single material and multi-material patient-specific, 3D-printed radiotherapy phantoms
D. Craft (USA), E. Burgett, R. Howell **EP-1435**

> A newly designed water-equivalent bolus technique enables BNCT application to skin tumor.
K. Hirose (Japan), K. Arai, T. Motoyanagi, T. Harada, R. Shimokomaki, T. Kato, Y. Takai **EP-1436**

> New Cobalt-60 system for reference irradiations and calibrations
C.E. Andersen (Denmark) **EP-1437**

> Experimental determination of correction factors for reference dosimetry in Gamma Knife Perfexion
E. Zoros (Greece), E.P. Pappas, K. Zourari, E. Pantelis, A. Moutsatsos, G. Kollias, C.I. Hourdakis, P. Karaiskos **EP-1438**

> Small field dosimetry: preliminary characterisation of a nano-chamber with a focus on stem effect
A. Stravato (Italy), G. Reggiori, P. Mancosu, F. Lobefalo, L. Paganini, F. Zucconi, V. Palumbo, S. Tomatis, M. Scorsetti **EP-1439**

> Monte Carlo determination of scintillator quenching effect for small radiation fields
G. Valdes Santurio (Denmark), C. E. Andersen **EP-1440**

> Repurposing of a small clinical x-ray source for radiobiology irradiations
M. Barry, R. Jones, M. Fay, D. Butler, J. Lehmann (Australia) **EP-1441**

> Fricke and Polymer gel dosimeters for radiotherapy pre-treatment 3D dosimetry
G.M. Liosi (Italy), L. Trombetta, P. Salmoiraghi, M. Mariani, F. Locatelli, E. Bombardieri **EP-1442**

> Measurement of 3D dose distributions from an MR Linac with gel dosimetry
Y. Roed (USA), L. Pinsky, G. Ibbott EP-1443

> Reliable error detection in radiochromic film dosimetry with optimal density curves and corrections
H. Park (Republic of Korea), Y. Bae, J. Park, M. Kim, Y. Oh, M. Chun, O. Noh, O. Cho, J. Lee EP-1444

> Performance evaluation of scintillators for SiPM PET/MRI brain imaging
N. Campos Rivera (UK), B. Seitz EP-1445

> Can parallel plate ion chambers be used for PDD measurements in FFF beams?
S. Vargas Castrillón (UK), F. Cutanda EP-1446

> Dose determination in a CT control room using TLD and Monte-Carlo-method-based FLUKA code
A.H. Yeşil (Turkey), M.G. Aksu, Y. Ceçen EP-1447

ELECTRONIC POSTER

Physics track: Dose measurement and dose calculation

> Epid-based *in vivo* dosimetry for SBRT-VMAT treatment dose verification
S. Cilla (Italy), A. Ianiro, M. Craus, P. Viola, A. Fidanzio, L. Azario, F. Greco, M. Grusio, F. Deodato, G. Macchia, V. Valentini, A. Morganti, A. Piermattei EP-1448

> The effect of a build-up screen on superficial dose in total body irradiation
L.S. Fog (Denmark) EP-1449

> Implementation of dosimetry equipment and phantoms in clinical practice of light ion beam therapy.
L. Grevillot (Austria), J. Osorio, V. Letellier, R. Dreindl, A. Elia, H. Fuchs, A. Carlino, S. Vatnitsky, H. Palmans, M. Stock EP-1450

> Validation of local tolerances for VMAT patient specific QA using the IBA Compass system
E. Crees (UK), R. Hulley, G. Kidane, Y. Miao EP-1451

> Evaluation of a collapsed-cone algorithm in a commercial software for *in vivo* volumetric dosimetry
I. Gimeno Olmos (Spain), V. Carmona, F. Lliso, B. Ibanez-Rosello, J. Bautista, J. Bonaque, J. Perez-Calatayud EP-1452

> Modeling a carbon fiber couch in a commercial Treatment Planning System
R. Gómez Pardos (Spain), D. Navarro Jiménez, A. Ramírez Muñoz, E. Ambroa Rey, M. Colomer Truyols EP-1453

> Comparison of treatment planning algorithms and Monte Carlo simulations in oesophageal radiotherapy
D. Johns (UK), E. Spezi, P. Downes, D. Lewis EP-1454

> IGRT kV-CBCT dose calculations using Virtual Source Models and validated in phantoms using OSL
G. Boissonnat (France), H. Chesneau, J. Garcia-Hernandez, D. Lazaro EP-1455

> *In-vivo* dosimetry using dosimetry check: 5-year experience on 345 prostate cancer patients
W.H. Nailon (UK), D. Welsh, K. MacDonald, D. Burns, J. Forsyth, G. Cooke, F. Cutanda, D.B. McLaren, J. Puxeu-Vaque, T. Kehoe, S. Andiappa EP-1456

> Introducing the fraction of penumbra dose in the evaluation of VMAT treatment plans
A. Bäck (Sweden), F. Nordström, M. Gustafsson, J. Götstedt, A. Karlsson Hauer EP-1457

> 3D dose reconstruction on CBCT for daily monitoring of delivered patient dose
K. Eilertsen (Norway), F.C. Vidaurre, Y. Pylypchenko EP-1458

> Relative signal ratios using an unshielded silicon detector: data from 30 centers
C. Talamonti (Italy), S. Russo, M.D. Falco, A. Bartoli, E. Cagni, L. Strigari, M. Esposito, F.R. Giglioli, C. Fiandra, C. Marino, S. Clemente, M. Stasi, E. Villaggi, P. Mancosu EP-1459

> Detection of forced errors in VMAT plans using EPID and Epiqa dosimetric system
D. Granero (Spain), L. Brualla, A. Vicedo, M. Trinitat, J. Rosello EP-1460

> Scintillator dosimetry reveals lung tumor size dependency of 6 MV AAA dose calculations
W. Ottosson, P. Sibolt (Denmark), C.F. Behrens, C.E. Andersen **EP-1461**

> The impact on VMAT optimisation using type C vs B algorithms for patients with temporary gas pockets
B. Smulders (Denmark), J. Thomsen, P. Munck Af Rosenschöld **EP-1462**

> MONET: an accurate model for the evaluation of the ion dose in water
A. Embriaco (Italy), E.V. Bellinzona, A. Fontana, R. Alberto **EP-1463**

> Investigation on beam width tolerances for proton pencil beam scanning
B. Ackermann (Germany), S. Brons, M. Ellerbrock, O. Jäkel **EP-1464**

> A beam matching procedure for Volumetric Modulated Arc Therapy
L. Abdullah (Saudi Arabia), C. Constantinescu, M.N. Hussein **EP-1465**

> Implementation of a linac head-mounted matrix detector to clinical use for dynamic technique
L. Szczurek (Poland) **EP-1466**

> IPEM Code of Practice for proton and ion beam dosimetry: update on work in progress
S. Green (UK), R. Amos, F. Van den Heuvel, A. Kacperek, R.I. MacKay, H. Palmans, D. D'Souza, R. Thomas **EP-1467**

> Skin dose in radiotherapy: results of *in vivo* measurements with gafchromic EBT3 films
A. Giuliano (Italy), V. Ravaglia **EP-1468**

> Flattening filter free beam profile analysis using two different normalization methods
G. Nicolini (Switzerland), A. Fogliata, E. Vanetti, G. Reggiori, A. Stravato, P. Mancosu, M. Scorsetti, L. Cozzi **EP-1469**

> Determination of paramagnetic gel sensitivity in low energy X-ray beam
Y. Ben Ahmed (France), J. Coulaud, S. Ken, L. Parent **EP-1470**

> Comparison of the integral dose of IMRT, RapidArc and helical tomotherapy prostate treatments

I. Martinez Ortega (Spain), P. Castro Tejero, M. Pinto Monedero, M. Roch Gonzalez, L. Perez Gonzalez **EP-1471**

> Dosimetric E2E verification using 3D printing and 3D dosimeter for brain stereotactic radiotherapy
M.S. Kim (Republic of Korea), K.H. Chang, J. Kwak, G.M. Back, T.Y. Kang, S.W. Kim, Y. Ji **EP-1472**

> Improving the accuracy of dosimetry verification by non-uniform backscatter correction in the EPID
Y. Md Radzi (UK), R.S. Windle, D.G. Lewis, E. Spezi **EP-1473**

> Feasibility of dose delivery error detection by a transmission detector for patient-specific QA
H. Honda (Japan), K. Kubo, R. Yamamoto, Y. Ishii, H. Kanzaki, Y. Hamamoto, T. Mochizuki, M. Oita, M. Sasaki, M. Tominaga, Y. Uto **EP-1474**

> RBE estimation of different brachytherapy sources based on micro- and nanodosimetry
M. Bug (Germany), T. Schneider **EP-1475**

> Preliminary results of *in-vivo* dosimetry by EPID
S. Giancaterino (Italy), M. Falco, A. De Nicola, N. Adorante, M. Di Tommaso, M. Trignani, A. Allajbej, F. Perrotti, D. Genovesi, F. Greco, M. Grusio, A. Piermattei **EP-1476**

> Evaluating gamma-index quality assurance methods for Nasopharynx Volumetric Arc Therapy (VMAT)
E.M. Pogson S. Arumugam, S. Blake, N. Roberts, C. Hansen, M. Currie, M. Carolan, P. Vial, J. Juresic, C. Ochoa, J. Yakobi, A. Haman, A. Trtovac, L. Holloway, D.I. Thwaites (Australia), **EP-1477**

> A split field beam model of beam modulator linear accelerator in Pinnacle treatment planning system
M. Chandrasekaran (UK), S. Worrall, M.K.H. Chan, N. Khater, C. Birch **EP-1478**

> Gamma 3D analysis for VMAT treatments using two detector arrays
E.M. Ambroa Rey (Spain), D. Navarro Jiménez, A. Ramirez Muñoz, R. Gómez Pardos, D. Amat de los Angeles, A. Gibert Serrano, A. López Muñoz, M. Parcerisa Torné, M. Colomer Truyols **EP-1479**

> Patient-specific QA for CyberKnife MLC plans using Monte Carlo
P.H. Mackeprang (Switzerland), D. Vuong, W. Volken, D. Henzen, D. Schmidhalter, M. Malthaner, S. Mueller, D. Frei, D.M. Aebersold, M.K. Fix, P. Manser EP-1480

> Testing algorithms in water and heterogeneous medium using experimental designs
S. Dufreneix (France), A. Barateau, M. Bremaud, C. Di Bartolo, C. Legrand, J. Mesgouez, D. Autret EP-1481

> Signal prediction for an on-line delivery verification system
R. Heaton (Canada), M. Farrokhkish, G. Wilson, B. Norrlinger, D.A. Jaffray, M.K. Islam EP-1482

> Pre-Treatment QA of MLC plans on a CyberKnife M6 using a liquid ion chamber array.
L. Masi (Italy), R. Doro, O. Blanck, S. Calusi, I. Bonucci, S. Cipressi, V. Di Cataldo, L. Livi EP-1483

> Validation of ptw's diamond as alternative method for the IMRT-VMAT pretreatment verification
A. Niebla Piñero (Spain), B.C. Portas Ferradás, P. Rosa Menéndez, J.A. Merino Gestoso, M. Rodríguez Pazos, D. Pardo Calvo, B. Sobral Aspérez EP-1484

> Dosimetric characterisation of a high definition MLC for stereotactic radiotherapy treatments.
F. Rosica (Italy), F. Bartolucci, C. Fidanza, A. Savini, D. Ciuffetelli, A. Rastelli, G. Orlandi EP-1485

> Further developments of two complexity metrics to consider clinical aspects of VMAT treatment plans
I. Götstedt (Sweden), A. Bäck, A. Karlsson Hauer EP-1486

> Dosimetric aspects in the development of a crawl positioning device for prone breast radiotherapy
L. Paelinck (Belgium), B. Boute, L. Veldeman, C. De Wagter, B. Speleers, A. Van Greveling, G. Post, W. De Neve EP-1487

> Evaluation of the efficacy and accuracy of customized bolus by using a 3-dimensional printer
W.K. Choi (Republic of Korea), S.G. Ju, J.C. Chum, B.J. Min, S.Y. Park, H.R. Nam, D.H. Lim EP-1488

> Effect of the thermoplastic mask on patient skin dose in tomotherapy
V. Ravaglia (Italy), A. Giuliano EP-1489

> A 3-class density method to monitor doses to the parotid glands and spinal cord in oropharynx IMRT
N. Perichon (France), S. Couespel, C. Hervé, O. Henry, C. Lafond, J. Castelli, A. Largent, O. Acosta, E. Chajon, R. De Crevoisier EP-1490

> Verification of FFF VMAT plans with PDIP and GLAaS algorithms by using the new imager of TrueBeamSTx
T. Ercan (Turkey), A. Levent, T. Cagin, S.M. Igdem EP-1491

> Influence of induced accelerator' errors on dosimetric verification result and DVH of treatment plan
M. Kruszyna (Poland), K. Matuszewski EP-1492

> Machine record parameters or Epid based data for ART QA. A comparison of two scenarios.
P. Haering (Germany), C. Lang, M. Splinter EP-1493

> The MedAustron proton gantry: nozzle design recommendations based on Monte Carlo simulations
H. Fuchs (Austria), L. Grevillot, A. Elia, A. Carlino, J. Osorio, V. Letellier, R. Dreindl, M. Stock, S. Vatnitsky EP-1494

> Should we use correction factors for skin dose measurements with radiochromic films?
P. Carrasco de Fez (Spain), M.A. Duch, L. Muñoz, N. Jornet, M. Lizondo, C. Cases, A. Latorre-Musoll, T. Eudaldo, A. Ruiz, M. Ribas EP-1495

> A portal dosimetry dose prediction method based on CT images of Electronical Portal Imaging Device
J. Martinez Ortega (Spain), N. Gomez Gonzalez, P. Castro Tejero, M. Pinto Monedero, N. Tolani, L. Nuñez Martin, R. Sanchez Montero EP-1496

> Dosimetric effect of the Elekta Fraxion cranial immobilization system and dose calculation accuracy
C. Ferrer (Spain), C. Huertas, R. Plaza, A. Serrada EP-1497

> IMRT and VMAT commissioning for Versa HD linear accelerator using AAPM TG-119
S. Sharma (India), V. Subramani, P. Kumar, S. Bhaskar, S. Pathy, S. Thulkar, M. Sairem, A. Binjola, P. Agarwal, N. Dhayanethi, P. Kumar, S. Chander EP-1498

> Additional dose of image guided radiation therapy in pediatric patients
I. Topczewska-Bruns (Poland), T. Filipowski, D. Hempel, B. Pancewicz-Janczuk, R. Chrenowicz, D. Kazberuk, A. Szmigiel-Trzcinska, E. Rozkowska EP-1499

> Application of RayStretch in clinical cases: heterogeneity corrections in LDR prostate brachytherapy
I. Vijande (Spain), F. Ballester, J. Perez-calatayud, F. Hueso-González, F. Siebert EP-1500

> Field-by-field and composite plan pseudo-3D verification of IMRT techniques with radiochromic film
T. Hanušová (Czech Republic), I. Horáková, I. Koniarová EP-1501

> Dosimetric assessment of brass bolus using radiochromic film
P. Lonski (Australia), L. Walton, N. Anderson, J. Lydon, T. Kron, B. Chesson, R. Prabhakar EP-1502

> The effect of tandem-ovoid applicator on the dose distribution in GYN brachytherapy using Ir-192
M.H. Sadeghi, A. Mehdizadeh, M. Tafi, R. Faghihi, S. Sina, A.S. Meigooni, A. Shabestani Monfared (Islamic Republic of Iran) EP-1503

> Monte Carlo modeling of non-isocentric proton pencil beam scanning treatments
A. Elia (Austria), L. Grevillot, A. Carlino, T. Böhlen, H. Fuchs, M. Stock, D. Sarrut EP-1504

> Use of portal dosimetry to monitor treatment consistency throughout the course of treatment
S. Deshpande (India), A. Sutar, S. Naidu, M. Vikram, V. Anand, R. Bajpai, V. Kannan EP-1505

> Temperature dependent dose readout of Gafchromic EBT3 and EBT-XD film and clinical relevance in SRT
K. Buchauer (Switzerland), L. Plasswilm, J. Schiefer EP-1506

> Comparison of pencil beam convolution and analytical anisotropic algorithms for lung cancer
P. Gkogkou (UK), D. Wills, A. Martin, J. Phillips, N. Solomou, A. Alexandrou, C. Eveleigh, Z. Tassigianopoulos, K. Geropantas, T. Ajithkummar EP-1507

> Quantification of skin dose and photon beam attenuation for the iBEAM couch and Compact accelerator
M.A. Mosleh-Shirazi (Islamic Republic of Iran), F. Arianfard, S. Karbasi, S. Mousavi EP-1508

> Small fields defined by jaw or MLC: evaluation of MU estimation by AAA and Acuros algorithms
F. Lobefalo, A. Fogliata, G. Reggiori (Italy), A. Stravato, S. Tomatis, M. Scorsetti, L. Cozzi EP-1509

> Dosimetric characterisation of stereotactic cones by means of MC simulations
A. Nevelsky (Israel), E. Borzov, S. Daniel, R. Bar-Deroma EP-1510

> Radiation dose from megavoltage cone beam computed tomography for IGRT
E. Kara (Turkey), B. Dirican, A. Yazici, A. HICSONMEZ EP-1511

> Comparison between dose transmission detector and 3d dosimetry for lung SBRT treatments.
F.R. Giglioli (Italy), E. Gallio, C. Fiandra, O. Hammad, R. Ragona EP-1512

> CyberKnife robotic radiotherapy delivery quality assurance using CrystalBall 3D Dosimetry System
M.A. Al Kafi, A. Al Moussa, M.J. Maryanski, B. Moftah (Saudi Arabia) EP-1513

ELECTRONIC POSTER

Physics track: Radiation protection, secondary tumour induction and low dose (incl. imaging)

> Planar kV imaging dose reduction study for Varian iX and TrueBeam linacs
E. Gershkevitsh (Estonia), D. Zolotuhhin EP-1514

> A novel attachment system for cutouts in kilovoltage x-ray beam therapy
M. Baumgartl (Switzerland), G. Kohler EP-1515

> Prediction of secondary cancer risk from lateral electrons transport from pediatric radiotherapy
A. Chaikh (France), J. Balosso EP-1516

> Analysis of radiotherapy risk profile applied to the patient positioning
G. Menegussi (Brazil), M.M. Vasques, G.R.D. Santos, L. Furnari, L.N. Rodrigues EP-1517

> Various activation foils for photo neutron measurements in medical linac
A.H. Kummali (India), S. Cyriac, S. Deepa, A. BAKSHI EP-1518

ELECTRONIC POSTER

Physics track: Treatment plan optimatisation: algorithms

> Implementation of a hybrid superfast Monte Carlo-Pencil beam dose optimizer for proton therapy
A.M. Barragán Montero (Belgium), K. Souris, D. Sánchez-Parcerisa, A. Carabe-Fernández, J.A. Lee, E. Sterpin EP-1519

> Stereotactic body radiation therapy treatment planning using target volume partitioning
J. Robar (Canada) EP-1520

> Non-coplanar beam orientation and fluence map optimisation based on group sparsity
K. Sheng (USA) EP-1521

> Quantifying the operator variability reduction driven by knowledge-based planning in VMAT treatments
A. Scaggion (Italy), M. Fusella, S. Bacco, N. Pivato, A. Roggio, M. Rossato, R. Zandonà, M. Paiusco EP-1522

> Proton radiography to calibrate relative proton stopping power from X-ray CT in proton radiotherapy
A.K. Biegun (The Netherlands), K. Ortega Marín, S. Brandenburg EP-1523

> Automated treatment planning for breast and locoregional lymph nodes using Hybrid RapidArc
M.J. Van Duren - Koopman (The Netherlands), J.P. Tol, M. Dahele, P. Meijnen, R. Florijn, B.J. Slotman, W.F.A.R. Verbakel EP-1524

> Automatic treatment plan generation for prostate cancer
S. Agergaard (Denmark), C.R. Hansen, L. Dysager, A. Bertelsen, H.R. Jensen, S. Hansen, C. Brink EP-1525

> Analysis of dose deposition in lung lesions: a modified PTV for a more robust optimization
A.F. Monti (Italy), D.A. Brito, M.G. Brambilla, C. Carbonini, M.B. Ferrari, A. Torresin, D. Zanni EP-1526

> Pelvic intensity-modulated radiotherapy in prone and supine position in gynaecological cancer
E. Perrucci (Italy), G. Montesi, M. Marcantonini, C. Mariucci, M. Mendichi, S. Saccia, A. Cavalli, A.M. Didona, V. Lancellotta, V. Bini, C. Aristei EP-1527

> RapidPlan head and neck model: the objectives and possible clinical benefits
L. Cozzi (Italy), G. Reggiori, C. Franzese, F. Lobefalo, M. Scorsetti, A. Fogliata EP-1528

> Reducing total monitor units in RapidArc™ plans for prostate cancer
K. Armoogum (UK), M. Hadjicosti EP-1529

> Validation of RayStation fallback planning dose-mimicking algorithm
L. Bartolucci (France), M. Robilliard, S. Caneva- Losa, A. Mazal EP-1530

> Collimator angle influence on dose coverage for VMAT SRS treatment of four brain metastases
C. Ferrer (Spain), C. Huertas, A. Castaño, A. Colmenar, R. Plaza, R. Morera, A. Serrada EP-1531

> ITV optimization for SBRT lung treatment planning accounting for respiratory dose blurring
C. Cases (Spain), A. Latorre-Musoll, P. Carrasco, N. Jornet, T. Eudaldo, A. Ruiz-Martínez, M. Lizondo, P. Delgado-Tapia, M. Ribas EP-1532

> Modulation complexity assessment in VMAT plans from different treatment planning systems.
P. Winkler (Austria), A. Trausnitz, J. Schroettner, A. Apfolter, K. Kapp EP-1533

> Automate the Complex Stuff: Pathways, Pitfalls and Results of Planning Automation in Raystation
B. Archibald-Heeren (Australia), M. Byrne, Y. Wang, Y. Hu EP-1534

> Knowledge based planning for lung cancer patients with stereotactic ablative radiotherapy
S. Smith (UK), P. Houston, G. Currie EP-1535

> The advantages of Collimator Optimization for Intensity Modulated Radiation Therapy
S. Pella (USA), B. Brian Doozan EP-1536

> Iterative dataset optimization in automated planning: implementation for breast radiotherapy
J. Fan (China), J. Wang, Z. Zhang, W. Hu EP-1537

> VMAT craniospinal radiotherapy, planning strategy and results in twenty pediatric and adult patients
F. Lliso (Spain), V. Carmona, J. Gimeno, B. Ibañez, J. Bautista, J. Bonaque, R. Chicas, J. Burgos, J. Perez-Calatayud EP-1538

> Parameters for estimating and controlling small gaps in VMAT treatments
I. Saez Beltran (Spain), V. Hernandez Masgrau EP-1539

ELECTRONIC POSTER

Physics track: Treatment planning: applications

> Optimal fractionation schemes for radiosurgery of large brain metastases
J. Unkelbach (Switzerland), H.A. Shih EP-1540

> 4D dose reconstruction using a standard TPS in combination with a respiratory motion model
M. Ziegler (Germany), J. Woelfelschneider, H. Prasetio, C. Bert EP-1541

> Can proton therapy for head and neck cancer reduce side effects while maintaining target robustness?
D. Scandurra (The Netherlands), R.G.J. Kierkels, M. Gelderman, H.M. Credoe, H.P. Bijl, R.J.H.M. Steenbakkers, J.G.M. Vemer - van de Hoek, J.A. Langendijk EP-1542

> Dominant intraprostatic lesions boosting: comparison of tomotherapy, VMAT and IMPT
P. Andrzejewski (Austria), A. Jodda, P. Kuess, D. Georg, J. Malicki, T. Piotrowski EP-1543

> Treatment selection by comparison of patient specific NTCP predictions
I.P. Tol (The Netherlands), A.R. Delaney, M. Dahele, I.T. Kuijper,

B.J. Slotman, W.F.A.R. Verbakel EP-1544

> On mixed-modality radiation therapy optimization using the column generation approach
M.A. Renaud (Canada), M. Serban, C. Lambert, J. Seuntjens EP-1545

> MR-Linac based single fraction ablative radiotherapy for early-stage breast cancer: a planning study
T. Van 't Westeinde (The Netherlands), K.R. Charaghvandi, J.K. Horton, S. Yoo, V. Scholten, B. Van Asselen, H.J.G.D. Van den Bongard EP-1546

> Optimal treatment planning for head and neck: evaluation of a predict parotid glands sparing tool
N. Delaby (France), S. Martin, O. Henry, E. Chajon, C. Lafond EP-1547

> Dose to risk organs in deep inspiration breath hold non-coplanar VMAT for lung cancer radiotherapy
M. Josipovic (Denmark), G. Persson, J. Bangsgaard, L. Specht, M. Aznar EP-1548

> Cyberknife Iris based versus InCise based plans for 20 cases of prostate oligonodal metastases
C.L. Chaw (UK), N.J. VanAs, V.S. Khoo EP-1549

> Investigating the advantages of CyberKnife M6 MLC over Iris collimator for Liver SBRT plans
R. Doro (Italy), L. Masi, V. Di Cataldo, S. Cipressi, I. Bonucci, M. Loi, L. Livi EP-1550

> Radiobiological optimisation and plan evaluation in IMRT planning of prostate cancer
S. Cora (Italy), H. Khouli, M. Bignotto, G. Bolzicco, A. Casetta, C. Baiocchi, P. Francescon EP-1551

> Robust optimization for IMPT of pencil-beam scanning proton therapy for prostate cancer
C.L. Brouwer (The Netherlands), W.P. Matysiak, P. Klinker, M. Spijkerman-Bergsma, C. Hammer, A.C.M. Van den Bergh, J.A. Langendijk, D. Scandurra, E.W. Korevaar EP-1552

> Dose reduction of femoral heads using volumetric-modulated Dynamic WaveArc for prostate cancer
K. Nakamura (Japan), T. Mizowaki, M. Uto, N. Mukumoto, Y. Miyabe, T. Ono, H. Hirashima, K. Yokota, H. Hiraoka EP-1553

> Partially ablative VMAT for large tumors using simultaneous integrated boost: a proof of concept
S. Cilla (Italy), F. Deodato, A. Ianiro, G. Macchia, V. Picardi, M. Ferro, M. Boccardi, M. Ferro, S. Cammelli, A. Arcelli, E. Farina, L. Giaccherini, G.P. Frezza, V. Valentini, A.G. Morganti EP-1554

> Improving inter-planner variability in head and neck (H&N) VMAT
H. James (UK), C. Scrase, K. Yip EP-1555

> Dosimetric commissioning of a TPS for a synchrotron-based proton PBS delivery system
G. Kragl (Austria), T. Böhlen, A. Carlino, L. Grevillot, H. Palmans, A. Elia, B. Knäusl, J. Osorio, R. Dreindl, J. Hopfgartner, S. Vatnitsky, M. Stock EP-1556

> Minimum prescription concept for dose painting increases robustness towards geometrical uncertainty
S. Korreman (Denmark) EP-1557

> Dosimetric evaluation of incidental radiation of internal mammary chain in breast cancer with 3D RT
A.C. Ciafre (Spain), J. Castilla, C. Domingo, E. Jorda, D. Dualde, E. Ferrer EP-1558

> Optimising the risks for deterministic effects and secondary malignancies in bladder and rectum
G. Komisopoulos (Greece), C. Buckey, S. Stathakis, M. Mavroeidi, G.P. Swanson, D. Baltas, N. Papanikolaou, P. Mavroidis EP-1559

> Left breast cancer planning with VMAT technique: the dosimetric trade-offs
A. Fogliata (Italy), J. Seppala, G. Reggiori, F. Lobefalo, V. Palumbo, F. De Rose, D. Franceschini, M. Scorsetti, L. Cozzi EP-1560

> Comparison of heart, lung doses, and skin toxicity from different breast cancer RT techniques.
M. Lizondo (Spain), N. Jornet, M.J. Fuentes-Raspall, P. Carrasco, A. Latorre-Musoll, A. Ruiz-Martinez, T. Eudaldo, P. Delgado-Tapia, C. Cases, M. Ribas EP-1561

> A dose painting study based on CT Intratumoural Heterogeneity vs. FDG PET Uptake in NSCLC
S. Alobaidli (UK), C. South, S. McQuaid, J. Scuffham, I. Phillips, V. Prakash, V. Ezhil, A. Nisbet, P. Evans EP-1562

> Treatment planning for synchrotron microbeam radiotherapy
L. Day (Australia), L.M. Smyth, M. Holm, P.A.W. Rogers, P.E. Engström, C. Ceberg, C.M. Poole, J.C. Crosbie, S. Senthi, K. Woodford **EP-1563**

> Dosimetric assessment of pseudo-CT based proton planning
G. Pileggi (Italy), C. Speier, G. Sharp, C. Catana, D. Izquierdo-Garcia, J. Pursley, J. Seco, M.F. Spadea **EP-1564**

> Best of both worlds: 3D-CRT-based VMAT for locoregional irradiation in breast cancer
P.G.M. Van Kollenburg (The Netherlands), H.J.M. Meijer, M.C. Kunze-Busch, P. Poortmans **EP-1565**

> Biologically optimised IMRT plans for prostate cancer using population-based tumour biology
E.J. Her (Australia), M.A. Ebert, H.M. Reynolds, A. Kennedy, A. Haworth **EP-1566**

> Inverse planning versus forward planning for orbital lymphoma
E.M. Ambroa Rey (Spain), A. Ramirez Muñoz, D. Navarro Jiménez, R. Gómez Pardos, M. Colomer Truyols **EP-1567**

> Benefit of a breath hold radiotherapy technique for breast and internal mammary nodes irradiation
F. Jouyaux (France), A.L. Blin, I. Lecouillard, M. Benchalal, C. Lafond **EP-1568**

> A comparison of SRS plan quality when using VMAT vs non-coplanar static conformal fields.
R. Brass (UK), L. Howard, M. Gilmore **EP-1569**

> The dynamic jaw mode of tomotherapy: Better neural structure protection for advanced NPC patients?
P.T. Fang (Taiwan), T.Y. Lu, M.N. Wu, M.Y. Huang, C.J. Huang **EP-1570**

> Radiotherapy treatments using a prototype MLC design
P. Nitsch (USA), Y. Li, T. Netherton, P. Balter, S. Gao, M. Muruganandham, S. Shaitelman, S. Frank, S. Hahn, A. Klopp, L. Court **EP-1571**

> Feasibility study of prone position in radiotherapy of breast with regional lymph nodes
E. Pawlowska (Poland), A. Prawdzik, M. Narkowicz, M. Damięcka, R. Zaucha **EP-1572**

> TBI and TMI treatment comparison using bilateral and anteroposterior delivery techniques
E. Sandrini (Brazil), C.M. Da Silva EP-1573

> Helical Tomotherapy for Bilateral Breast Cancer Patients: 3-Years Single Centre Experience
F. Ertan (Turkey), M. Altundag, H. Abanuz, S. Duzgun EP-1574

> Automated VMAT planning for whole brain irradiation with hippocampus sparing
I. Krayenbuehl (Switzerland), M. Di Martino, M. Guckenberger, N. Andratschke EP-1575

> Tomotherapy WBRT with SIB planning for patients with brain metastases
D. Synchuk (Ukraine), S. Odarchenko, N. Seryogina, O. Zinvaliuk, M. Gumeniuk, K. Gumeniuk EP-1576

> Hippocampus-sparing whole-brain IMRT and simultaneous integrated boost to multiple brain metastases
S. Cilla (Italy), F. Deodato, M. Ferro, G. Macchia, A. Ianiro, V. Picardi, M. Boccardi, M. Ferro, S. Cammelli, A. Arcelli, E. Farina, L. Giaccherini, G.P. Frezza, V. Valentini, A.G. Morganti EP-1577

> Frameless intracranial radiosurgery with Helical Tomotherapy: preliminary results.
M. Iacco (Italy), C. Zucchetti, M. Lupattelli, C. Aristei, C. Fulcheri, R. Tarducci EP-1578

> Practical dosimetrical issues in Intraoperative electron radiation therapy
S. Wadi-Ramahi (Saudi Arabia), F. Alzorkany, B. Moftah, A. Alsuhaibani EP-1579

> Dosimetric comparison between 3D-conformal radiation therapy and VMAT in Total Lymphoid Irradiation
C. Ferrer (Spain), C. Huertas, A. Escribano, R. Plaza, R. Morera, A. Serrada EP-1580

> Dosimetric comparison of treatment plans for pancreatic cancer: 3DCRT, IMRT and VMAT
P. Trecca (Italy), M. Fiore, B. Floreno, R. D'Angelillo, L. Trodella, A. Mameli, E. Infusino, C. Greco, L. Trodella, S. Ramella EP-1581

> Analysis of risk of a second cancer from scattered radiation in Acoustic Neuroma Treatment
Y. Oh (Republic of Korea), D.O. Shin, D.H. Shin, W.K. Chung, M. Chung, D.W. Kim **EP-1582**

> Quantifying Plan Quality Metrics using Conventional and Stereotactic dosimetric indices in Lung SBRT
R. Yaparpalvi (USA), M. Garg, W. Bodner, J. Shen, D. Mynampati, H. Kuo, N. Ohri, J. Fox, A. Basavatia, S. Kalnicki, W. Tome **EP-1583**

> Deformable image registration and dose accumulation for arc-Total Body Irradiation
G. Guidi (Italy), N. Maffei, P. Ceroni, G.M. Mistretta, F. Lohr, T. Costi **EP-1584**

> A practical method to reduce monitor units in prostate cancer RapidArc plans
D. Sánchez-Artuñedo (Spain), S. Jiménez-Puertas, M. Sancho-Navarro, M. Hermida-López **EP-1585**

> ART and VMAT–the benefits in bone marrow sparing for patients with bladder cancer
M. Poncyljusz, D. Blatkiewicz, J. Chorazy, B. Czyzew, P.F. Kukolowicz (Poland), M. Piziorska **EP-1586**

> Feasibility investigation of prone position robotic radiosurgery treatment for dorsal metastasis
E. Kucukmorkoc (Turkey), N. Kucuk, M. Doyuran, H. Acar, D. Canoglu, R. Rashad, H.B. Caglar **EP-1587**

> Dosimetric feasibility of an "off-breast isocenter" technique for whole-breast cancer radiotherapy
J. Casals Farran (Spain), J.F. Calvo-Ortega, S. Moragues, M. Pozo-Massó **EP-1588**

> A novel integrated biological optimization strategy for cervical carcinoma
C. Tao (China), Z. Feng, J. Zhu, J. Lu, Y. Yin **EP-1589**

> Can bolus range shifting improve plan quality in the IMPT of head and neck cancer?
S. Michiels (Belgium), A. Barragán, K. Souris, K. Poels, W. Crijns, J. Lee, E. Sterpin, S. Nuyts, K. Haustermans, T. Depuydt **EP-1590**

> Evaluation of noninvasive eye fixation system on Cyberknife radiotherapy of orbital's tumors
A. Skrobala (Poland), M. Adamczyk, P. Janiga, A. Jodda, J. Litoborska, E. Czajka, J. Dura, P. Milecki EP-1591

> Higher biological dose to heart and lung in IMPT of medulloblastoma patients due to increased LET
E. Rørvik (Norway), L.F. Fjæra, C.H. Stokkevåg, S. Thörnqvist, K.S. Ytre-Hauge EP-1592

ELECTRONIC POSTER
Physics track: (Radio)biological modelling

> Accuracy of TCP model for nasopharyngeal cancer after more than five years average follow-up
M. Avanzo (Italy), J. Stancanello, G. Franchin, S. Barbiero, R. Jena, G. Sartor, E. Capra EP-1593

> Development of multivariable models for acute toxicities in nasopharyngeal cancer radiotherapy
A. Cavallo (Italy), T. Rancati, A. Cicchetti, N.A. Iacovelli, F. Palorini, C. Fallai, E. Orlandi, E. Pignoli EP-1594

> NTCP models for early toxicities in patients with prostate or brain tumours receiving proton therapy
A. Dutz (Germany), L. Agolli, E.G.C. Troost, M. Krause, M. Baumann, A. Lühr, S. Löck EP-1595

> Developing and validating a survival prediction model for NSCLC patients using distributed learning
A. Jochems (The Netherlands), T. Deist, I. El-Naqa, M. Kessler, C. Mayo, J. Reeves, S. Jolly, M. Matuszak, R. Ten Haken, J. Van Soes, C. Oberije, C. Faivre-Finn, G. Price, P. Lambin, A. Dekker EP-1596

> Focal dose escalation in prostate cancer with PSMA-PET/CT and MRI: planning study based on histology
C. Zamboglou (Germany), I. Sachpazidis, K. Koubar, V. Drendel, M. Werner, H.C. Rischke, M. Langer, F. Schiller, T. Krauss, R. Wiehle, P .T. Meyer, A.L. Grosu, D. Baltas EP-1597

> Modelisation of radiation response at various fractionation from histopathological prostate tumors

V. Aubert (France), O. Acosta, N. Rioux-Leclercq, R. Mathieu, F. Commandeur, R. De Crevoisier EP-1598

> Mathematical modeling of the synergistic combination of cancer immunotherapy and radiotherapy
C. Ceberg (Sweden), J. Ahlstedt, H. Redebrant Nittby EP-1599

> Delta radiomics of NSCLC using weekly cone-beam CT imaging: a feasibility study
J. Van Timmeren (The Netherlands), R. Leijenaar, W. Van Elmpt, S. Walsh, A. Jochems, P. Lambin EP-1600

> Do higher CT pixel values outside the GTV predict for poorer lung cancer survival?
M. Van Herk (UK), J. Kennedy, E. Vasquez Osorio, C. Faivre-Finn, A. McWilliam EP-1601

> Treatment planning individualisation based on 18F-HX4 PET hypoxic subvolumes in NSCLC patients
E. Lindblom (Sweden), A. Dasu, J. Uhrdin, A. Even, W. Van Elmpt, P. Lambin, I. Toma-Dasu EP-1602

> Atlas of complication incidence to explore dosimetric contributions to osteoradionecrosis
L. Humbert-Vidan (UK), S. Gulliford, V. Patel, C. Thomas, T. Guerrero-Urbano EP-1603

> Ion induced complex DNA damage: In silico modelling of damage and repair using Geant4-DNA.
J.W. Warmenhoven (UK), N.T. Henthorn, M. Sotiropoulos, R.I. Mackay, K.J. Kirkby, M.J. Merchant EP-1604

> Deep learning of radiomics features for survival prediction in NSCLC and Head and Neck carcinoma
A. Jochems (The Netherlands), F. Hoebers, D. De Ruysscher, R. Leijenaar, S. Walsh, B. O'Sullivan, J. Bussink, R. Monshouwer, R. Leemans, P. Lambin EP-1605

> Calculating ion-induced cell death and chromosome damage by the BIANCA biophysical model
M.P. Carante (Italy), F. Ballarini EP-1606

> Secondary cancer risk after particle therapy for organs distal or lateral to the target volume
L. Toussaint (Denmark), L. Muren, G. Engeseth, C. Stokkevåg **EP-1607**

> Deriving HPV status from standard CT imaging: a radiomic approach with independent validation
R. Leijenaar (The Netherlands), M. Nesteruk, G. Feliciani, F. Hoebers, J. Van Timmeren, W. Van Elmpt, S. Walsh, A. Jochems, S. Huang, B. Chan, J. Waldron, B. O'Sullivan, D. Rietveld, C. Leemans, O. Riesterer, K. Ikenberg, P. Lambin **EP-1608**

> Tolerance doses for detailed late effects after prostate cancer radiotherapy – a post-QUANTEC review
C. Olsson (Sweden), M. Thor, J.O. Deasy **EP-1609**

> Predictors for morbidity from planned vs. delivered rectal dose maps in RT of prostate cancer
J. Trane, O. Casares Magaz (Denmark), L. Bentzen, K. Busch, M. Thor, L.P. Muren **EP-1610**

> Dose-response relationships for radiation-induced urgency syndrome after gynecological radiotherapy
E. Alevronta (Sweden), V. Skokic, U. Wilderäng, G. Dunberger, F. Sjöberg, C. Bull, K. Bergmark, G. Steineck **EP-1611**

> Estimates of the α/β ratio for prostate using data from recent hypofractionated RT trials.
S. Gulliford (UK), C. Griffin, A. Tree, J. Murray, U. Oelfke, I. Syndikus, E. Hall, D. Dearnaley **EP-1612**

> Modelling DNA damage on gold nanoparticle enhanced proton therapy
M. Sotiropoulos (UK), N.T. Henthorn, J.W. Warmenhoven, R.I. Mackay, K.J. Kirkby, M.J. Merchant **EP-1613**

> Uncertainty of dose-volume constraints obtained from radiation pneumonitis dose-response analysis
C.M. Lutz (Denmark), D.S. Møller, L. Hoffmann, A.A. Khalil, M.M. Knap, M. Alber **EP-1614**

> Second cancer risk after radiation of localized prostate cancer with and without flattening filter
M. Treutwein (Germany), M. Hipp, R. Loeschel, O. Koelbl, B. Dobler **EP-1615**

ELECTRONIC POSTER

Physics track: Intra-fraction motion management

> Phase II trial of a novel device for DIBH in left-sided breast cancer: preliminary results
I. Romera-Martínez (Spain), A. Onsès Segarra, C. Muñoz-Montplet, D. Jurado-Bruggeman, J. Marruecos Querol, S. Agramunt-Chaler, J. Vayreda Ribera **EP-1616**

> Reproducibility and stability of vmDIBHs during breast cancer treatment measured using a 3D camera
M. Kusters (The Netherlands), F. Dankers, R. Monshouwer **EP-1617**

> Can diaphragm motion function as a surrogate for motion of esophageal tumors during treatment?
S.E. Heethuis (The Netherlands), L. Goense, A.S. Borggreve, P.S.N. Van Rossum, R. Van Hillegersberg, J.P. Ruurda, S. Mook, G.J. Meijer, J.J.W. Lagendijk, A.L.H.M.W. Van Lier **EP-1618**

> Determination of lung tumour motion from PET Raw Data used for acccelerometer based motion prediction
G. Hürtgen (Germany), S. Von Werder, V. Berneking, K. Gester, O. Winz, P. Hallen, F. Büther, C. Schubert, N. Escobar-Corral, J. Hatakeyama Zeidler, H. Arenbeck, C. Disselhorst-Klug, A. Stahl, M.J. Eble **EP-1619**

> The immobilizing effect of the vacuum cushion in spinal SBRT and the impact of pain
A.S. Gerlich (The Netherlands), J.M. Van der Velden, G. Fanetti, A. Zoetelief, W.S.C. Eppinga, E. Seravalli **EP-1620**

> Intrafraction errors in cranial radiotherapy with standard VMAT mask: implications for SRS/SRT.
F. Azoury (Lebanon), D. Nasr, C. El Khoury, N. Khater, J. Barouky, R. Sayah, N. Farah, S. Achkar, E. Nasr **EP-1621**

> Intra-fractional isocenter position analysis and dose evaluation of DIBH using surface guided RT
L. Berg (Sweden), M. Kügele, A. Edvardsson, S. Alkner, C. Andersson-Ljus, S. Ceberg **EP-1622**

> SeedTracker: enabling real time position monitoring with a conventional linacs for prostate SBRT

A. Sankar (Australia), L. Holloway, D. Truant, A. Xing, L. Karen, A. Walis, M. Grand, M. Sidhom — EP-1623

> Respiratory gating of an Elekta linac using a Microsoft Kinect v2 system
D. Edmunds (UK), K. Tang, R. Symonds-Tayler, E. Donovan — EP-1624

> Comprehensive prospective evaluation tool for treatments of thoracic tumours with scanned protons
C. Ribeiro (The Netherlands), A. Meijers, G. Janssens, J. Widder, J. Langendijk, E. Korevaar, A. Knopf — EP-1625

> Predicting motion of normal tissue using incomplete real-time data during lung radiotherapy.
L.S.H. Bendall (UK), M. Partridge, M.A. Hawkins, J. Fenwick — EP-1626

> Anatomical advantages of deep inspiration breath hold for breast radiotherapy: a geometric analysis
L. Conroy (Canada), E. Watt, S. Quirk, J.L. Conway, I.A. Olivotto, T. Phan, W.L. Smith — EP-1627

> Analysis of prostate SBRT treatments using 3D transperineal ultrasound image guidance methods
M. Szegedi (USA), C. Boehm, B. Ager, V. Sarkar, P. Rassiah-Szegedi, H. Zhao, L. Huang, J. Huang, A. Paxton, F. Su, J. Tward, B. Salter — EP-1628

> Lung tumour tracking using CBCT-based respiratory motion models driven by external surrogates
A. Fassi (Italy), A. Bombardieri, G.B. Ivaldi, M. Liotta, P. Tabarelli de Fatis, I. Meaglia, P. Porcu, M. Riboldi, G. Baroni — EP-1629

> The impact of DIBH on dose to the junction in loco-regionally treated left-sided breast patients
M. Van Hinsberg (The Netherlands), I. De Bree, E. Osté, D. De Ronde — EP-1630

> Reproducibility of DIBH tecnique guided by an optical system: the florence usl experience
S. Russo (Italy), F. Rossi, G. Stoppa, L. Paoletti, S. Fondelli, R. Barca, P. Alpi, B. Grilli Leonulli, S. Pini, M. Esposito, A. Ghirelli, L. Cunti, L. Isgrò, M. Verdiani, P. Bastiani — EP-1631

> A motion monitoring and processing system based on computer vision: prototype and proof of principle
N. Leduc (France), V. Atallah, A. Petit, S. Belhomme, V. Vinh-Hung, P. Sargos — EP-1632

> Respiratory motion analysis using a surface guided radiation therapy system for lung SBRT patients
M. Jermoumi (USA), D. Cao, V. Mehta, D. Shepard EP-1633

> Combined 4D and 3D cone beam CT protocol for lung SBRT for reliable and fast position verification
W. Woliner-van der Weg (The Netherlands), N. Gelens, V.H.J. Leijser-Kersten, P.M. Braam, J. Bussink, M. Wendling EP-1634

> Framework for the evaluation of interplay effects between respiratory motion and dose application
A. Von Münchow (Germany), K. Straub, J. Hofmaier, P. Freisleder, M. Reiner, C. Thieke, M. Söhn, M. Alber, R. Floca, C. Belka, K. Parodi, F. Kamp EP-1635

> Evaluation of the accuracy in frame-less image-guided radiotherapy and radiosurgery.
M. Iacco (Italy), C. Zucchetti, M. Lupattelli, A. Dipilato, C. Aristei, R. Tarducci EP-1636

> Critical appraisal of deep inspiration breath hold CBCT for left breast using VMAT
P. Mancosu (Italy), G. Nicollini, F. De Rose, F. Lobefalo, D. Franceschini, M. Scorsetti, S. Tomatis EP-1637

> Comparison dual image registrations for SBRT treatment in central and peripheral tumour lung cancer
D. Esteban (Spain), M. Rincón, J. Luna, A. Sánchez-Ballesteros, A. Ilundain, L. Guzmán, D. Gonsálves, W. Vásquez, J. Olivera, I. Prieto, J. Vara EP-1638

> Does intrafraction motion between vmDIBHs during breast cancer treatment impact on delivered dose?
M. Kusters (The Netherlands), F. Dankers, R. Monshouwer EP-1639

ELECTRONIC POSTER

Physics track: Inter-fraction motion management (excl. adaptive radiotherapy)

> Dosimetric consequences of PTV margin reduction in cervix cancer radiotherapy with VMAT and IGRT
T. Berger (Denmark), M.S. Assenholt, N. Jensen, L. Fokdal, J. Lindegaard, K. Tanderup EP-1640

> Intra-fractional CBCT validation of a 6D couch to facilitate precision RT of head and neck cancer
A. Bertelsen (Denmark), C.R. Hansen, M. Nielsen, J. Eriksen, N. Gyldenkerne, J. Johansen, S.L. Krogh, J. Westberg, C. Brink **EP-1641**

> Patient-specific transperineal ultrasound probe setups for image guided radiotherapy
S. Camps (The Netherlands), F. Verhaegen, P. De With, D. Fontanarosa **EP-1642**

> Simulate baseline shift uncertainties to improve robustness of proton therapy treatments
K. Souris (Belgium), A. Barragan, D. Di Perri, X. Geets, E. Sterpin, J.A. Lee **EP-1643**

> Deep inspiration breath hold respiratory gated 3DRT for left breast cancer:Our clinical experience.
M. Pinto Monedero (Spain), M. Castanedo Álvarez, J. Martínez Ortega, N. Gómez González **EP-1644**

> Optimization of on-line setup verification and adaptive radiotherapy for breast cancer patients
M. Essers (The Netherlands), S. Hol, I. Maurits, Y. Nijs, T. Donkers, L. Pontzen, S. Toemen, L. Mesch, K. De Winter **EP-1645**

> Impact of interobserver variability and setup uncertainty on dose in organs-at-risk
V. Prokic (Germany), F. Röhner **EP-1646**

> Validation of a set up procedure for IMRT/VMAT breast treatment using *in vivo* dosimetry with EPID
S. Kang, J. Li, P. Wang (China), X. Liao, M. Xiao, B. Tang, X. Xin, L.C. Orlandini **EP-1647**

> Thermoplastic mask dependency with interfractional uncertainties for head and neck VMAT treatments
E.M. Ambroa Rey (Spain), R. Gómez Pardos, D. Navarro Giménez, A. Ramirez Muñoz, M. Colomer Truyols **EP-1648**

> Comparison of two thermoplastic immobilization shells for frameless stereotactic radiotherapy
I. Gagne (Canada), S. Zavgorodni, A. Alexander, I. Vallieres **EP-1649**

> Setup uncertainty in head and neck assessed by a 1.5T MR-sim with thermoplastic mask immobilization
Y.H. Zhou (Hong Kong SAR China), W.W.K. Fung, J. Yuan, O.L. Wong, G. Chiu, K.F. Cheng, K.Y. Cheung, S.K. Yu **EP-1650**

> Dosimetric impact of rotations correction in Stereotactic RT. How much a 6DoF couch is useful?
S. Chiesa (Italy), S. Menna, A.R. Alitto, L. Azario, G.C. Mattiucci, M. Ferro, M. Massaccesi, A. Re, A. Piermattei, V. Valentini, M. Balducci **EP-1651**

> A new position verification protocol for breast cancer with integrated boost
K.L. Gottlieb (Denmark), E.L. Lorenzen, J.D. Jensen, M.H. Nielsen, M. Ewertz **EP-1652**

> PolymarkTM fiducial markers migration in Prostate Image Guided Radiation Therapy using CBCT images
C. Camacho (Spain), I. Valduvieco, J. Sáez, A. Herreros, J. García-Miguel, E. Agustí, C. Castro **EP-1653**

> Clinical set up and first results of EPID *in vivo* dosimetry in an overload Chinese Radiotherapy
J. Li, A. Piermattei, P. Wang (China), S. Kang, M. Xiao, B. Tang, X. Liao, X. Xin, L.C. Orlandini **EP-1654**

> Improved patient setup for breast cancer patients using the predicted (absolute) couch position.
M. Essers (The Netherlands), S. Hol, I. Maurits, W. Kruijf **EP-1655**

> The inter-fraction variation of the supraclavicular- and the axilla-area in breast cancer patients
S. Gerrets (The Netherlands), L. Kroon- van der, M. Buijs, P. Remeijer **EP-1656**

> Clinical use of transit dosimetry to analyze inter-fraction motion errors
F. Ebrahimi Tazehmahalleh (Germany), C. Moustakis, U. Haverkamp, H.T. Eich **EP-1657**

ELECTRONIC POSTER

Physics track: Adaptive radiotherapy for inter-fraction motion management

> The effect of weight loss in head and neck patients in the presence of a magnetic field
R. Chuter (UK), P. Whitehurst, M. Van Herk, A. McWilliam **EP-1658**

> Quantitative triggering of plan adaptation: monitoring plan quality by recalculation on CBCT scans
R. Canters (The Netherlands), M. Wendling, M. Kusters, R. Monshouwer **EP-1659**

> Improvement in tumour control probability by adapting dose to daily OAR DVCs
D. Foley (Ireland), B. McClean, P. McBride **EP-1660**

> Adaptive strategy to accommodate anatomical changes during RT in oesophageal cancer patients
T. Nyeng (Denmark), M. Nordsmark, L. Hoffmann **EP-1661**

> Interfractional trend analysis of sinograms: a decision-making for adaptive radiotherapy
S. Bresciani (Italy), A. Garello, A. Miranti, A. Maggio, A. Di Dia, P. Gabriele, M. Stasi **EP-1662**

> Automated full-online replanning of SBRT lymph node oligometastases for the MR-linac
D. Winkel (The Netherlands), P. Kroon, J. Hes, G. Bol, B. Raaymakers, I. Jürgenliemk-Schulz **EP-1663**

> Two-step verification of dose deformation in presence of large inter-fraction changes during LACC RT
A. Gulyban (Belgium), M. Baiwir, S. Nicolas, M. Enescu, V.P. Nguyen, M. Gooding, T. Kadir, J. Hermesse, V. Baart, P.A. Coucke, F. Lakosi **EP-1664**

> Library of plans approach for bladder cancer radiotherapy including a simultaneous integrated boost
S. Nakhaee (The Netherlands), L. Hartgring, M. Van der Burgt, F. Pos, P. Remeijer **EP-1665**

> Adaptive radiotherapy in prostate cancer: when and why?
R. Muelas (Spain), R. García, L. Vidueira, J. Bonaque, A. Conde, C. Ferrer **EP-1666**

> MR-Guided Radiotherapy of head and neck cancers: adaptive Planning Strategies
N. Dogan (USA), K. Padgett, M. Duffy, M. Samuels EP-1667

> Dose calculation accuracy using CBCT images for head and neck VMAT
M.A. Carrasco Herrera (Spain), B. Quintana, J.M. Nieto, F.J. Luis Simon, C. Santa Marta Pastrana EP-1668

> Assessment of the clinical value of off-line adaptive strategies for tomotherapy treatments
D. Dumont (Belgium), X. Geets, M. Coevoet, E. Sterpin EP-1669

> Couch shifts in NAL protocols: which is the optimal threshold?
A. Camarasa (Spain), V. Hernández EP-1670

> Calculation of the skin dose-of- the-day during tomotherapy for head and neck cancer patients
M. Branchini, C. Fiorino, M. Mori (Italy), I. Dell'Oca, M.G. Cattaneo, L. Perna, N.G. Di Muzio, R. Calandrino, S. Broggi EP-1671

ELECTRONIC POSTER

Physics track: CT Imaging for treatment preparation

> Dual energy CT for improved proton stopping power estimation in head and neck cancer patients
V. Taasti (Denmark), L. Muren, K. Jensen, J. Petersen, J. Thygesen, A. Tietze, C. Grau, D. Hansen EP-1672

> Electron-density assessment using dual-energy CT: accuracy and robustness
C. Möhler (Germany), P. Wohlfahrt, C. Richter, S. Greilich EP-1673

> Experimental investigation of CT imaging approaches to deal with metal artefacts in proton therapy
S. Belloni, M. Peroni (Switzerland), S. Safai, G. Fattori, R. Perrin, M. Walser, T. Niemann, R.A. Kubik-Huch, A.J. Lomax, D.C. Weber, A. Bolsi EP-1674

> Influence of CT contrast agent on head and neck VMAT dose distributions
L. Obeid (France), J. Prunaretty, N. Ailleres, L. Bedos, A. Morel, S. Simeon, P. Fenoglietto EP-1675

> Comparison of accuracy of Hounsfield units obtained from pseudo-CT and true CT images
N. Reynaert (France), P.F. Cleri, J. Laffarguette, B. Demol, C. Boydev, F. Crop EP-1676

ELECTRONIC POSTER

Physics track: (Quantitative) functional and biological imaging

> Multicentre initiative for standardisation of image biomarkers
A. Zwanenburg (Germany), Image Biomarker Standardisation Initiative IBSI EP-1677

> Are PET radiomic features robust enough with respect to tumour delineation uncertainties?
M.L. Belli (Italy), S. Broggi, C. Fiorino, V. Bettinardi, F. Fallanca, E.G. Vanoli, I. Dell'Oca, P. Passoni, N. Di Muzio, R. Calandrino, M. Picchio, G.M. Cattaneo EP-1678

> Preliminary functional imaging study on an integrated 1.5T MR-Linac machine
M. Kadbi (USA), Y. Ding, J. Wang, C.D. Fuller EP-1679

> Assessing tumour necrosis in lung cancer with dual energy CT quantitative imaging
V. González-Pérez (Spain), E. Arana, J. Cruz, M. Barrios, F. Blázquez, A. Bartrés, L. Oliver, V. Campo, C. Bosó, P. Sanamaría, V. Crispín EP-1680

> [C11]Choline PET/MRI for Prostate Cancer: Identify Imaging Characteristics Predicting Metastasis
J.R. Tseng (Taiwan), L.Y. Yang, H.Y. Chang, T.C. Yen EP-1681

> Comparison of SUV based on different ROIs and VOIs definitions: a multi-center 4D phantom study
M. Lambrecht (The Netherlands), K. Ortega Marin, M. La Fontaine, J.J. Sonke, R. Boellaard, M. Verheij, C.W. Hurkmans EP-1682

> Fractals in Radiomics: implementation of new features based on fractal analysis
D. Cusumano (Italy), N. Dinapoli, R. Gatta, C. Masciocchi, J. Lenkowicz, G. Chilorio, L. Azario, J. Van Soest, A. Dekker, P. Lambin, M. De Spirito, V. Valentini EP-1683

> Optimal window for assessing treatment responsiveness on repeated FDG-PET scans in NSCLC patients
M. Lazzeroni (Sweden), J. Uhrdin, S. Carvalho, W. Van Elmpt, P. Lambin, A. Dasu, I. Toma-Dasu **EP-1684**

> CT-Radiomics outperforms FMISO-PET/CT for the prediction of local control in head-and-neck cancer
J.A. Socarras Fernandez (Germany), D. Mönnich, F. Lippert, D. Welz, C. Pfannenberg, C. La Fougere, G. Reischl, D. Zips, D. Thorwarth **EP-1685**

> Diffusion weighted imaging for treatment response prediction in advanced rectal cancer
H.D. Nissen (Denmark) **EP-1686**

> Texture analysis of 18F-FDG PET/CT predicts local control of stage I NSCLC treated by SBRT
K. Takeda (Japan), K. Takanami, Y. Shirata, T. Yamamoto, N. Takahashi, K. Ito, K. Takase, K. Jingu **EP-1687**

> Voxelbased analysis of FMISO-PET and diffusion-weighted MRI of two different HNSCC models in mice
R. Winter (Germany), S. Boeke, M. Krueger, A. Menegakis, E. Sezgin, L. Wack, G. Reischl, B. Pichler, D. Zips, D. Thorwarth **EP-1688**

> Gleason driven dose painting based on ADC MR imaging
E. Grönlund (Sweden), S. Johansson, T. Nyholm, A. Ahnesjö **EP-1689**

> Validating the robustness of PET features in a phantom in a multicenter setting
T. Konert (The Netherlands), M. La Fontaine, S. Van Kranen, W. Vogel, J. Van de Kamer, J.J. Sonke **EP-1690**

> Multi-modal voxel-based correlation between DCE-CT/MRI and DWI in metastatic brain cancer
C. Coolens (Canada), W. Foltz, N. Sinno, C. Wang, B. Driscoll, C. Chung **EP-1691**

> Multi-device textural analysis on 18F-FDG PET images for predicting cervical cancer recurrence
S. Reuzé (France), F. Orlhac, C. Chargari, C. Nioche, F. Riet, A. Escande, C. Haie-Meder, L. Dercle, I. Buvat, E. Deutsch, C. Robert **EP-1692**

> Functional MRI to individualize PTV margins to seminal vesicles with suspected cancer involvement

S. Damkjaer (Denmark), J. Thomsen, S. Petersen, J. Bangsgaard, M. Aznar, I. Vogelius, P. Petersen — EP-1693

> DW-MRI as a predictor of tumour response to hypofractionated stereotactic boost for prostate cancer
D. Pasquier (France), A. Hadj Henni, E. Tresch, N. Reynaert, E. Lartigau, O. Colot, N. Betrouni — EP-1694

> Intra-treatment diffusion MRI for predicting radiotherapy response in head and neck cancer patients
E. Samsøe (Denmark), F. Mahmood, H.H. Johannesen, C. Maare, R.H. Hansen — EP-1695

> Dose-painting planning with uncertainties in dose-response parameters and in patient positioning
M. Balvert, S. Breedveld, J. Unkelbach, D. Den Hertog, S. Petit (The Netherlands) — EP-1696

> Does contrast agent influence the prognostic accuracy of CT radiomics based outcome modelling?
S. Tanadini-Lang (Switzerland), M. Nesteruk, G. Studer, M. Guckenberger, O. Riesterer — EP-1697

> Impact of motion and segmentation on PET texture features: evaluation with heterogeneous phantoms.
M. Carles (Germany), I. Torres-Espallardo, D. Baltas, U. Nestle, L. Martí-Bonmatí — EP-1698

> The simulation study of position and biology of target with PET in high energy X-Ray irradiation
Q. Zhang (China) — EP-1699

> Prognostic value of FCH PET/CT in response to radical radiotherapy for localized prostate cancer
M. Sepulcri (Italy), L. Evangelista, M. Fusella, S. Galuppo, L. Corti, G. Saladini, M. Paiusco — EP-1700

> FDG-PET background definition in rectal cancer patients using differential uptake volume histograms
J. Schneider (Canada), N. Tomic, T. Vuong, R. Lisbona, M. Hickeson, G. Chaussé, F. DeBlois, J. Seuntjens, S. Devic — EP-1701

> Evaluation of radiation induced MRI intensity change in vertebral bodies after proton beam scanning
L. Placidi (Switzerland), R. Poel, A.J. Lomax, D.C. Weber, M. Peroni — EP-1702

ELECTRONIC POSTER

Physics track: Images and analyses

> Rapid prototyping phantom using LEGO® for MRI distortion correction in MR guided radiation therapy
S. Neppl (Germany), M. Reiner, M. Peller, C. Belka, K. Parodi, F. Kamp **EP-1703**

> Breast tumour bed contouring: influence of surgical clips assessed on the same imaging.
D. Ciardo (Italy), M. Leonardi, A. Morra, G. Fanetti, D. Damaris, S. Dicuonzo, V. Dell'Acqua, R. Ricotti, F. Cattani, R. Cambria, G. Baroni, R. Orecchia, B. Jereczek-Fossa **EP-1704**

> MR imaging of internal mammary lymph nodes and organs at risk in supine breast radiotherapy
T. Van Heijst (The Netherlands), E.M. Aalbers, E. Alberts, H.J.G.D. Van den Bongard, J.J.W. Lagendijk, B. Van Asselen, M.E.P. Philippens **EP-1705**

> Validation of a novel hybrid deformable image registration algorithm for cervix cancer
M. Buschmann (Austria), H. Furtado, D. Georg, Y. Seppenwoolde **EP-1706**

> Dose of the day in head-neck cancer Tomotherapy: a DIR-based method's comprehensive validation
M. Branchini (Italy), C. Fiorino, L. Perna, G.M. Cattaneo, R. Calandrino, S. Broggi **EP-1707**

> Investigating the reproducibility of geometric distortion measurements for MR-only radiotherapy
I. Wyatt (UK), S. Hedley, E. Johnstone, R. Speight, C. Kelly, A. Henry, S. Short, L. Murray, D. Sebag-Montefiore, H. McCallum **EP-1708**

> Can atlas-based automatic segmentation contour head and neck OARs like a physician?
N. Maffei (Italy), G. Guidi, E. D'Angelo, B. Meduri, F. Lohr, T. Costi **EP-1709**

> Chemical stability of BioXmark® following normofractionated and single-fraction proton beam therapy
E. Troost (Germany), S. Menkel, W. Enghardt, J. Hytry, D. Kunath, S. Makocki, A. Hoffmann, R. Jølck **EP-1710**

> Effect of Noise Floor Suppression on Diffusion Kurtosis for prostate brachytherapy
Z.G. Portakal (Turkey), S. Shermer, E. Spezi, T. Perrett, J. Phillips **EP-1711**

> Quantification of radiotherapy-induced mediastinum changes using serial CT imaging
C. Veiga (UK), D. Landau, A. Devaraj, T. Doel, D. Hawkes, J.R. McClelland **EP-1712**

> Feasibility of low dose 4D CBCT in patients with lung cancer.
A. Bryce-Atkinson (UK), A. McWilliam, T. Marchant, C. Faivre-Finn, G. Whitfield, M. Van Herk **EP-1713**

> Automatic delineation of the gross-tumour volume in prostate cancer using shape models
K. Cheng, Y. Feng, D. Montgomery, D.B. McLaren, S. McLaughlin, W. Nailon (UK) **EP-1714**

> Differences in delineation uncertainty using MR images only vs CT-MR in recurrent gynaecological GTV
D. Bernstein (UK), A. Taylor, S. Nill, U. Oelfke **EP-1715**

> Semantic PACS deployment enables research in a radiation oncology research environment
M.S. Marshall (The Netherlands), H. Beemster, M. Buiter, T. Janssen **EP-1716**

> Image Quality Comparison Between Two Radiotherapy Simulators
N. Tomic (Canada), P. Papaconstadopoulos, J. Seuntjens, F. DeBlois, S. Devic **EP-1717**

> Application of motion compensation in 4D CT of oesophageal cancer.
A. Green (UK), L. Bhatt, R. Goldstraw, H. Sheikh, M. Van Herk, A. McWilliam **EP-1718**

> Diagnostic DSA's, a resource for radiotherapy treatment planning of AVM's
P. Davenport (Ireland), M. Javadpour **EP-1719**

> Framework for Statistical Cone-Beam CT Reconstruction with Prior Monte-Carlo Scatter Estimation
J. Mason (UK), M. Davies, W. Nailon **EP-1720**

> A new calibration method of an Elekta XVI (R.5.0.2) system able to achieve superior image quality.
D. Oborska-Kumaszynska (UK) **EP-1721**

> Inter-observer agreement of ACR MRI phantom Test on a 1.5T MR-simulator with Flexible Coil setting
I. Yuan, O.L. Wong (Hong Kong SAR China), S.K. Yu, K.Y. Cheung EP-1722

> Optimisation of an Elekta XVI (R.5.0.2) system for clinical protocols – image quality vs dose.
D. Oborska-Kumaszynska, D. Northover (UK) EP-1723

> Phantom image quality evaluation under 3 coil settings for abdominal MR-simulation at 1.5T
O.L. Wong (Hong Kong SAR China), J. Yuan, S. Yu, K. Cheung EP-1724

> Predicting radiation-induced pneumonitis in NSCLC: a radiobiological and texture analysis study
W. Nailon (UK), W. Lu, D. Montgomery, L. Carruthers, J. Murchiston, A.W. Yong, G. Ritchie, T. Evans, F. Little, S.C. Erridge, A. Price, D.B. McLaren, S. Campbell EP-1725

> Efficacy of vendor supplied distortion correction algorithms for a variety of MRI scanners
E.P. Pappas (Greece), I. Seimenis, D. Dellios, A. Moutsatsos, E. Georgiou, P. Karaiskos EP-1726

> MRI quality analysis between radiotherapy and diagnostic setup using a carbon fibre tabletop
S. Sabater (Spain), M. Pastor-Juan, R. Berenguer, E. Lozano-Setien, I. Andres, M. Tercero-Azorin, M. Sevillano, E. Jimenez-Jimenez, A. Rovirosa, M. Arenas EP-1727

> Inter-observer contouring similarity metrics, correlation with treatment outcome for prostate cancer
D. Roach, M. Jameson, J. Dowling, M. Ebert, P. Greer, S. Watt, L. Holloway (Australia) EP-1728

ELECTRONIC POSTER

Physics track: Implementation of new technology, techniques, clinical protocols or trials (including QA and audit)

> Air pockets in the urinary bladder during hyperthermia treatment reduce thermal dose

G. Schooneveldt (The Netherlands), H.P. Kok, E.D. Geijsen, A. Bakker, J.J.M.C.H. De la Rosette, M.C.C.M. Hulshof, T.M. De Reijke, J. Crezee EP-1729

> Opal - The Oncology Portal and Application
I. Kildea (Canada), L. Hendren, D. Hererra, A. Joseph, R. Maglieri, T. Hijal EP-1730

> What can reveal onsite end-to-end audit? The experience of national dosimetry audit group
I. Koniarova (Czech Republic), I. Horakova, V. Dufek EP-1731

> Treatment planning of dose escalation for anal cancer in the PLATO trial
N.L. Abbott (UK), D. Christophides, M. Robinson, J. Copeland, R. Adams, M. Harrison, M. Hawkins, R. Muirhead, D. Sebag-Montefiore EP-1732

> Proton grid therapy (PGT): a parameter study
T. Henry (Sweden), A. Valdman, A. Siegbahn EP-1733

> AAPM TG-119 benchmarking of a novel jawless dual level MLC collimation system
D. Mihailidis (USA), R. Schuermann, C. Kennedy, J. Metz EP-1734

> Total skin irradiation with helical Tomotherapy: planning and dosimetry feasibility aspects
A. Haraldsson (Sweden), P. Engström EP-1735

> Radiation and lasers isocenters coincidence with ArcCheck phantom
F. Tato de las Cuevas (Spain), J. Yuste Lopez EP-1736

> Efficient troubleshooting of accelerator faults using the TrueBeam Log Viewer software application
L.H. Praestegaard (Denmark) EP-1737

> Performance of a new EPID panel and opportunities for a fast MV-CBCT acquisition.
C. Kennedy (USA), C. Ling, R. Scheuermann, D. Mihailidis, J. Metz EP-1738

> The feasibility of atlas-based automatic segmentation of MRI for prostate radiotherapy planning
C. Morris, M.J. Gooding, A. Henry (UK), R. Speight EP-1739

> Nationwide audit of multileaf collimators performance
K. Chelminski (Poland), W. Bulski EP-1740

> Commissioning of a robotic patient positioning system equipped with an integrated tracking system
A. Ableitinger (Austria), A. Utz, A. Zechner, S. Vatnitsky, M. Stock **EP-1741**

> Optimisation and implementation of brain CBCT templates; an institutional pilot study.
S. Petkar (UK), N. Lalli, F. Solda', C. Gillies, S. Moinuddin, N. Fersht **EP-1742**

> Evaluation of proton grid therapy in challenging clinical cases
T. Henry (Sweden), A. Valdman, A. Siegbahn **EP-1743**

> Failure modes and effects analysis of Total Skin Electron Irradiation (TSEI) technique
B. Ibanez-Rosello (Spain), J.A. Bautista-Ballesteros, J. Bonaque, J. Perez-Calatayud, A. Gonzalez-Sanchis, J. Lopez-Torrecilla, L. Brualla-Gonzalez, M.T. Garcia-Hernandez, A. Vicedo-Gonzalez, D. Granero, A. Serrano, B. Borderia, J. Rosello **EP-1744**

> EPID and Gantry sag characterization in Elekta LINAC
F. Tato de las Cuevas (Spain), J. Yuste Lopez **EP-1745**

> A new method for exact co-calibration of the ExacTrac X-ray system and linac imaging isocenter
H.M.B. Sand (Denmark), K. Boye, T.O. Kristensen, D.T. Arp, A.R. Jakobsen, M.S. Nielsen, I. Jensen, J. Nielsen, H.J. Hansen, L.M. Olsen **EP-1746**

> From pre-treatment verification towards *in-vivo* dosimetry in TomoTherapy
T. Santos, T. Ventura, J. Mateus, M. Capela, M.D.C. Lopes (Portugal) **EP-1747**

> Mesorectal-only irradiation for early stage rectal cancer: target volumes and dose to organs at risk
A.L. Appelt (UK), M. Teo, D. Christophides, F.P. Peters, J. Lilley, K.L.G. Spindler, C.A.M. Marijnen, D. Sebag-Montefiore **EP-1748**

> The IROC QA Center's activities supporting the NCI's National Clinical Trial Network
D. Followill (USA), Y. Xiao, J. Michalski, M. Rosen, T. FitzGerald, M. Knopp **EP-1749**

> Enhanced radiotherapy by novel class of radiosensitizers based Bismuth and Gadolinium nanoparticles
S. Farahani (Islamic Republic of Iran), N. Riyahi alam, E. Gorji,

R. Rahnamafar, S. Fazli, H. Khosravi, M. Pakravan, V. Shahabian, S. Haghgoo EP-1750

> A comparison of tools for Delivery Quality Assurance in TomoTherapy
T. Santos, T. Ventura, J. Mateus, M. Capela, M.D.C. Lopes (Portugal) EP-1751

> A simple technique for an accurate shielding of the lungs during total body irradiation
H. Mekdash, B. Shahine, W. Jalbout, B. Youssef (Lebanon) EP-1752

> Determining the effect of using lead as electron cutout material compared to low melting point alloy
M. Wanklyn (UK), S. Rizkalla, T. Greener EP-1753

> Isocentric accuracy of Elekta VersaHD linear accelerators
E. Kouwenhoven (The Netherlands), J. Van Egmond, J. Van Wingerden, M. De Goede, M. Mast, J. Van Santvoort EP-1754

> Multi-modality end-to-end audit by the ACDS
I. Lye (Australia), F. Gibbons, M. Shaw, A. Alves, S. Keehan, I. Williams EP-1755

> Treatment planning and dosimetric validation of bone oligomet SABR treatments on TomoTherapy
C. Thomas (UK), T. Burrows, R. Lynn, N. Milesi, S. Petty, M. Stenson, K. Blythe, T. Greener EP-1756

> QA of MLC Elekta Agility for Static fields
F. Tato de las Cuevas (Spain) EP-1757

> Towards clinical implementation of an Online Beam Monitoring System
M. Islam (Canada), M. Farrokhkish, Y. Wang, B. Norrlinger, R. Heaton, D. Jaffray EP-1758

> MLC positioning study based on EPID images analysed with the Dosimetry Check software
C. Avigo (Italy), M. Mignogna, S. Linslata EP-1759

> A simple method for estimating the longitudinal isocentre shift due to gantry motion
R. Hudej, D. Brojan, S. Pulko, P. Peterlin (Slovenia) EP-1760

> Workflow development for the clinical implementation of an MR-guided linear accelerator
T. Stanescu (Canada), A. Berlin, L. Dawson, J. Abed, A. Simeonov, T. Craig, D. Letourneau, D. Jaffray EP-1761

> A comparative study of 4D and 3D CTSimulation in esophageal carcinoma
J. Li (China), G. Lai EP-1762

> Acute toxicity and *in-vivo* dosimetry of a two week hypofractionated schedule within the HYPORT study
A. Saha (India), G. Goswami, S. Mandal, A. Mahata, D. Midha, R. Ahmed, S. Agarwal, S. Ray, J. Das, S.S. Datta, S. Sinha, S. Chatterjee EP-1763

> Implementation of a patient specific QA *in-vivo* dosimetry protocol using the PerFRACTION 3D system
F. Vinagre (Portugal), P. Rachinhas, P. Simões, A. Cavaco, F. Balau, M. Borrego EP-1764

> Volume delineation based on 18FDG-PET and MRI in head and neck cancer treated with IG-VMAT
L. Méndez Blanco (Spain), C. Herrero, M. Fueyo, A. Martos, D. Abad, P. Santin, S. Palizas, D. Alonso, A. Rios, M. Vilches, R. Cabanillas EP-1765

ELECTRONIC POSTER
Brachytherapy: Breast

> First experiences using the new Papillon + TM Contact X-Ray brachytherapy 50KVp (CXB) unit
J.P. Gérard (France), C. Dejean, M.E. Chand, D. Lam Cham Kee, J. Doyen, K. Benezery, J.M. Hannoun-Levi EP-1766

> The dosimetric consequences throughout the treatment time In APBI with SAVI applicators.
S. Chandrasekara (USA), S. Pella, M. Hyyovain, P. Janeil EP-1767

ELECTRONIC POSTER
Brachytherapy: Prostate

> What is the proper dose in single fraction HDR brachytherapy as monotherapy for prostate cancer?

S. Ruiz Arrebola (Spain), A.M. Tornero-López, J.M. De la Vega, P.J. Prada, D. Guirado EP-1768

> Hypofractionated EBRT and single fraction HDR brachytherapy for patients with prostate cancer.
D.E. Kazberuk (Poland), T.M. Filipowski, A. Szmigiel-Trzcińska, M. Niksa, D. Hempel, J. Topczewska-Bruns, W. Nowik, B. Pancewicz-Janczuk EP-1769

> Unpredictable PSA failure in intermediate-risk prostate cancer after seed implant brachytherapy
K. Kikuchi (Japan), R. Nakamura, H. Kakuhara, S. Yamaguchi, H. Oikawa, W. Obara, H. Ariga EP-1770

> Low dose rate brachytherapy for prostate cancer: A Brazilian Institution experience.
E.T.T. Leite (Brazil), J.L.F.D. Silva, E. Capelletti, G.N. Marta EP-1771

> HDR Brachytherapy in the treatment of prostate cancer – the Vienna Experience
O. Komina (Austria), C. Seitz-Kästner, J. Hofbauer, M. Kuntner, J. Wimmer, T. Knocke-Abulesz, E. Nechvile EP-1772

> Clinical outcomes in localised prostate cancer treated with HDR Brachytherapy as single fraction
L. Larrea (Spain), E. López-Muñoz, P. Antonini, V. Gonázlez, M.C. Baños, J. Bea, M.A. García EP-1773

> Randomized phase II trial of IGRT with or without HDR boost in intermediate-risk prostate cancer
E. Vigneault (Canada), G. Morton, W. Perulekar, T. Niazi, G. Springer, M. Barkati, P. Chung, W. Koll, A. Kamran, M. Montreal, K. Ding, A. Loblaw EP-1774

> Acute toxicity in early cancer prostate patients: low dose rate vs high dose rate monotherapy
S. Rodríguez Villalba (Spain), A. Otal Palacín, J. Richart Sanchez, J. Pérez-Calatayud, M. Santos Ortega EP-1775

ELECTRONIC POSTER

Brachytherapy: Gynaecolgy

> Is a single CT plan for vaginal cylinder brachytherapy adequate?
M. Zahra (UK), M. Doak, W. Keough **EP-1776**

> Cervical cancer outcomes in the high-dose-rate brachytherapy era: A single institution experience
N. Alyamani (Canada), G. Bhattacharya, R. Samant, C. E, T. Le, K. Lupe **EP-1777**

> Combined intracavitary-interstitial IGABT of cervical cancer –First dosimetric experience in Hungary
G. Fröhlich (Hungary), J. Vízkeleti, N.N. Anhhong, N. Mészáros, T. Major, C. Polgár **EP-1778**

> High-dose rate brachytherapy for inoperable endometrial cancer: definitive results
L. Draghini (Italy), F. Trippa, M. Casale, P. Anselmo, F. Arcidiacono, S. Fabiani, M. Italiani, E. Maranzano **EP-1779**

> Postoperative endometrium: 68Gy EQD2(α/β=3) at 2cc of vagina is related to G2 late toxicity.
A. Rovirosa (Spain), M. Aguilera, C. Ascaso, A. Herreros, J. Sánchez, J. Garcia-Miguel, S. Sabater, G. Oses, P. Makiya, S. Cortes, J. Solà, E. Agusti, A. Huguet, A. Garrido, A. Lloret, C. Baltrons, M. Arenas **EP-1780**

> Statistical and dosimetric analysis of air gaps in vaginal cuff brachytherapy
S. Abdollahi (Islamic Republic of Iran), L. Rafat-Motavalli, H. Miri-Hakimabad, M. Mohammadi, E. Hoseinian-Azghadi, N. Mohammadi, N. Rafat-Motavalli, L. Sobhkhiz-Sabet **EP-1781**

> Effect of the amount of bladder filling on normal tissue doses in 3D-HDR vaginal vault brachytherapy
I. Er (Turkey), S. Kınay, R. Kandemir, F. Obuz, A.N. Demiral **EP-1782**

> Acute toxicity with Xoft Axxent Electronic Brachytherapy (XB) in endometrial or cervical cancer
A. Mendez Villamon, A. Miranda Burgos (Spain), M. Gascón Ferrer, M. Puertas Valiño, S. Lozares Cordero, A. Gandia Martinez, J. Font Gomez, M. Tejedor Gutierrez **EP-1783**

> Needle use in cervical cancer brachytherapy using the Utrecht applicator: a single center experience
M. Smolic (The Netherlands), C. Sombroek, M. Bloemers, B. Van Triest, M.E. Nowee, A. Mans EP-1784

> Use of rectal tube in vaginal cuff HDR- brachytherapy: an unexpected advantage
A. Cerrotta, C. Tenconi, B. Pappalardi (Italy), T. Giandini, S. Naimo, D. Mazzeo, E. Mazzarella, S. Grisotto, M. Borroni, C. Fallai, M. Carrara EP-1785

> Intraoperative Brachytherapy (HDR-IOBT) in advanced or recurrence gynecologic cancer..
E. Villafranca Iturre (Spain), J. Muruzabal, A. Sola, P. Navarrete, M. Barrado, S. Aguirre, S. La Peña, O. Tarrio, J. Jimenez, M. Ciga EP-1786

> Dosimetric Implications of the organs at risk in Vaginal Cuff Brachytherapy with ML Cylinder
N. Dumitru (USA), M. Shojaei, S. Pella, T. Leventouri, J. Pinder EP-1787

> HDR vs LDR Vaginal brachytherapy: a comparison in terms of outcomes and toxicity
R. Autorino (Italy), D. Smaniotto, M. Campitelli, L. Tagliaferri, A. Nardangeli, G. Mattiucci, A. Martino, N. Di Napoli, G. Ferrandina, M. Gambacorta, V. Valentini EP-1788

> Comparison between MRI based 3D IGABT planning versus standardised BT planning of cervical cancer
M. Hedetoft (Sweden) EP-1789

ELECTRONIC POSTER
Brachytherapy: Anorectal

> A balloon applicator with adjustable catheters for image-guided endoluminal rectal brachytherapy
M. Heilmann (Austria), D. Berger, R. Schmid, J. Bör, B. Wisgrill, R. Pötter, C. Kirisits, M.P. Schmid EP-1790

ELECTRONIC POSTER
Brachytherapy: Head and neck

> HDR Interstitial Brachytherapy for Head and Neck Malignancies and use of Iridium – 192 implants
V. Pareek (India), R. Bhalavat, M. Chandra **EP-1791**

> Nasal function after exclusive brachytherapy for primary SCCs of the nasal vestibulum
F. Bussu (Italy), L. Tagliaferri, G. Mattiucci, G. Di Cintio, N. Dinapoli, J. Galli, G. Almadori, E. De Corso, G. Passali, G. Paludetti, V. Valentini **EP-1792**

> High-dose-rate brachytherapy for lip and oral cavity tumors
C. De la Pinta (Spain), T. Muñoz, A. Montero, J. Dominguez **EP-1793**

ELECTRONIC POSTER
Brachytherapy: Physics

> Intra-op check of ONCURA Rapid Strand (Model 7000) seeds radioactivity in LDR prostate brachytherapy
V. Stserbakov (Estonia), K. Aru **EP-1794**

> A novel MRI markers system in applicator reconstruction for brachytherapy
A. Otal (Spain), J. Richart, C. Domingo, S. Rodriguez, P. Rodriguez-Meijide, I. Fotina, M. Santos, J. Perez-Calatayud **EP-1795**

> Dosimetric comparison between TG43/TG186 algorithms and manual/inverse optimization in brachytherapy
T. Brun (France), E. Torfeh **EP-1796**

> Dosimetric characterization of MOSFET detectors for Ir-192 and feasibility for *in vivo* dosimetry.
R. Fabregat Borrás (Spain), S. Ruiz-Arrebola, M. Fernández Montes, E. Rodríguez Serafín, J.T. Anchuelo Latorre, M.T. Pacheco Baldor, J.A. Vázquez Rodríguez, M.M. Fernández Macho, D. Guirado, P.J. Prada **EP-1797**

> Highly conformal external beam modalities vs. brachytherapy boost for rectal cancer patients
S. Devic (Canada), U. Mwidu, A. Alkafi, B. Moftah, S. Shakir, H. Hijazi, C. Yeung, T. Vuong **EP-1798**

> Feasibility study of *in vivo* dosimetry with optically stimulated dosimeters for 50kVp Papillon® beam
C. Dejean (France), A. Mana, M. Gauthier, J. Feuillade, C. Colnard, J. Gérard EP-1799

> Optical Fibre Luminescence Sensor for Real-time LDR Brachytherapy Dosimetry
P. Woulfe (Ireland), S. O'Keeffe, F.J. Sullivan EP-1800

ELECTRONIC POSTER
Brachytherapy: Miscellaneous

> HDR-plesiotherapy for the treatment of extramammary paget's disease. a case report
M.F. Ropero Carmona (Spain), J. Lupiani Castellanos, J. Quirós Rivero, A. Ruiz Herrero, M.A. Gonzalez Ruiz, J. Cabrera Rodriguez, Y. Ríos Kavadoy, J.L. Muñoz Garcia, P. Almendral Manzano EP-1801

> The role of the high dose rate brachytherapy in the conservative treatment of esophageal cancer.
A. Lozhkov (Russian Federation), A.V. Vazhenin, T.M. Sharabura EP-1802

> Moderate dose-escalation with perioperative HDR brachytherapy in soft tissue sarcomas
X. Chen (Spain), A. Montero, E. Sanchez, J. De las Heras, O. Hernando, M. Lopez, J. Garcia, J.M. Perez, R. Ciervide, J. Valero, M. Garcia-Aranda, R. Alonso, D. Zucca, M.A. De la Casa, B. Alvarez, J. Marti, L. Alonso, P. Fernandez-Leton, C. Rubio EP-1803

> Laparoscopic robot-assisted brachytherapy of muscle-invasive bladder cancer: clinical case report
F. Mascarenhas (Portugal), F. Marques, K. Maes, R. Formoso, T. Antunes, S. Germano, S. Faustino EP-1804

> Interstitial and superficial brachytherapy for skin cancer
S. Brovchuk (Ukraine), S. Romanenko, N. Ratushnia, O. Vaskevych EP-1805

> HDR brachytherapy for superficial non-melanoma skin cancers.
C. De la Pinta (Spain), T. Muñoz, J. Dominguez, A. Montero EP-1806

ELECTRONIC POSTER

Radiobiology track: Normal tissue biology of the heart

> Reducing Heart Toxicity In Medulloblastoma Using Proton Therapy
A. Madkhali (UK), M. Partridge **EP-1807**

ELECTRONIC POSTER

Radiobiology track: Normal tissue radiobiology (others)

> The response of human induced pluripotent stem cell- derived chondrocytes to ionizing radiation
E. Augustyniak (Poland), W.M. Suchorska **EP-1808**

> Effect of thalidomide on radiation-induced urinary bladder dysfunction
J. Kowaliuk (Austria), E. Bozsaky, S. Sarsarshahi, P. Kuess, W. Dörr **EP-1809**

ELECTRONIC POSTER

Radiobiology track: Radiobiology of cancer (others)

> Both location and complexity of DNA damage contribute to radiation induced senescence
J. Wang (China) **EP-1810**

ELECTRONIC POSTER

RTT track: Patient preparation, positioning and immobilisation

> Aligning the chest with a couch improved reproducibility in radiotherapy for head and neck cancers
K. Koiwai (Japan), A. Shinoda, T. Ozawa, H. Matsushita, A. Fukazawa, K. Sakai, M. Kadoya **EP-1811**

> A study on the patient positioning accuracy for stereotactic radiotherapy of brain lesions
O. Pashkovskaya (Russian Federation), E. Polovnikov **EP-1812**

> The investigation of the immobilization devices and localization methods for brain cancer in P-SRS.
R.D. Lin (Taiwan), J. Gao, P. Chen **EP-1813**

> Is AIO belly board device advantageous in all irradiated rectal cancer patients?
D. Hempel (Poland), J. Mandrosz, J. Topczewska-Bruns, D. Kazberuk, A. Szmigiel-Trzcińska, R. Maksim, M. Konopka-Filippow, T. Filipowski, M.Z. Wojtukiewicz, E. Sierko EP-1814

> Technical aspects and setup irradiation of rats using a clinical accelerator
V. Sacco (Italy), A. Viale, B. Noris Chiorda, C. Sini, G. Salvadori, C. Fiorino, N. Di Muzio, C. Cozzarini EP-1815

> Neck positioning reproducibility of different pillow types in head and neck cancer patients
W.H. Yu (Taiwan), C.Y. Lin, J.T.C. Chang EP-1816

> Breast set-up: Assessing two immobilization systems
V. Lancellotta, A.M. Tini (Italy), S. Saccia, S. Trinari, S. Dazzini, G. Verzini, N. Mearelli, V. Bini, A. Cavalli, E. Perrucci, C. Aristei EP-1817

ELECTRONIC POSTER

RTT track: Imaging acquisition and registration, OAR and target definition

> The rate of a doctor's progress in a learning curve in delineation of hippocampus
M. Konopka-Filippow (Poland), E. Sierko, D. Hempel, R. Maksim, T. Filipowski, E. Rożkowska, S. Jelski, B. Kasprowicz, E. Karbowska, N. Samołyk, M.Z. Wojtukiewicz EP-1818

> EORTC RTT Delineation Project: improving volume definition of OAR within the EORTC Lungtech trial
M. Van Os (The Netherlands), M. Rossi, C. Hurkmans EP-1819

ELECTRONIC POSTER

RTT track: Treatment planning and dose calculation / QC and QA

> RapidArc vs IMRT in adjuvant gastric cancer irradiation: any dosimetric advantage?
K. Mashhour (Egypt), W. Hashem, R. Fawzy, H. Abdelghany EP-1820

> Air gap between patient surface and immobilization devices: dosimetric impact on head and neck IMRT plans
S. Moragues-Femenia (Spain), M. Pozo-Massó, J.F. Calvo-Ortega, J. Casals-Farran **EP-1821**

> Monitoring of parotid gland changes in radiotherapy of NPC with parapharyngeal space involvement
W.C.V. Wu (China), Y. Zhang, C. Lin, J. Wu **EP-1822**

> DVH- and NTCP-based dosimetric comparison of different margins for VMAT-IMRT of esophageal cancer
S. Münch (Germany), M. Oechsner, S.E. Combs, D. Habermehl **EP-1823**

> Elective breast RT including level I and II lymph nodes: a planning study with the humeral head as PRV
J. Van der Leer (The Netherlands), K. Surmann, M. Van der Sangen, M. Van Lieshout, C.W. Hurkmans **EP-1824**

> Evaluation for the usability of the Varian Standard Couch modeling using Treatment Planning System
Y.M. Yang (Republic of Korea), Y.M. Song, J.M. Kim, J.M. Choi, B.K. Choi **EP-1825**

> Analysis of dose distribution with change of the air gap when proton therapy using line scanning
S. Seo (Republic of Korea) **EP-1826**

> Dosimetric comparison of 3D-CRT, IMRT and VMAT for bilateral breast irradiation
H.M. Hung (Hong Kong SAR China) **EP-1827**

> Mean Dose in healthy lung for chest tumors treated with Stereotactic Body Radiation Therapy (SBRT)
J.L. Monroy Anton (Spain), M. Asensio Martinez, C. Borreda Talon, J. Hernandis Barbera, M. Marco Collado **EP-1828**

> Dose delivery accuracy in total body irradiation delivered with Step and Shoot IMRT
T. Berlon (Denmark), L. Specht, P.M. Petersen, L.S. Fog **EP-1829**

> Simple method on bladder filling simulation to improve the soft-tissue evaluation on CBCT
K.L. Jakobsen (Denmark), K. Andersen, D. Elezaj, D. Sjöstrøm **EP-1830**

> Entropic Boltzmann closure for MRI-guided radiotherapy
I. Page (France), J.L. Feugeas, G. Birindelli, J. Caron, B. Dubroca, T. Pichard, V. Tikhonchuk, P. Nicolaï **EP-1831**

> Selecting head and neck cancer patients for proton therapy: the influence of dosimetric thresholds
I.T. Kuijper (The Netherlands), M. Dahele, A. Delaney, B. Slotman, W. Verbakel **EP-1832**

> Bowel doses in cervical cancer patients treated with a full bladder during radiotherapy.
A. Schouboe (Denmark), E. Kjaersgaard, N. Jensen, L. Fokdal, L. Nyvang, M. Assenholt, J. Lindegaard, K. Tanderup, A. Vestergaard **EP-1833**

> Dose to internal mammary nodes compared to dose to heart and lung for breast cancer patients
M. Berg (Denmark), M. Christensen, M. Andersen, N. Kiilerich **EP-1834**

> Independent verification of treatment planning system calculations
E. Dąbrowska (Poland), B. Brzozowska, A. Walewska, P. Kukolowicz, A. Zawadzka **EP-1835**

> Study of changes in bowel gas in pelvic radiotherapy
A. Horne (UK), M. Zahra, W. Keough **EP-1836**

ELECTRONIC POSTER

RTT track: Image guided radiotherapy and verification protocols

> Dosimetric effect by rotational error in VMAT on brain tumour patients
H. Park (Republic of Korea) **EP-1837**

> First IGRT results for SBRT bone and lymph node oligometastases within the pelvic region.
L. Wiersema (The Netherlands), G. Borst, S. Nakhaee, H. Peulen, T. Wiersma, M. Kwint, A. Smit, M. Romp, P. Remeijer, A. Van Mourik **EP-1838**

> Towards planning organ at risk volumes for rectum and bladder using cone beam CT in prostate cancer.
R. Seuntjens, T. Convents, G. De Kerf, A. Sprangers, K. Van Belle, D. Verellen, P. Dirix (Belgium) **EP-1839**

> Verification of accurate movement of 6DoF Couch using Yonsei QA Set.
D. Jung (Republic of Korea), H. Park, J. Yoon, S. Lee, J. Kim, J. Cho EP-1840

> CASPIR Trial: Interim analysis of prostatic calculi as an alternative to fiducial markers for IGRT
A.G.M. O'Neill (UK), R. King, S. Jain, A.R. Hounsell, J.M. O'Sullivan EP-1841

> Comparison between infrared marker and surface imaging for DIBH of left-sided breast treatments
A. Tini (Switzerland), I. Pytko, A. Moreira, J. Sharpe, C. Winter, M. Guckenberger, C. Linsenmeier EP-1842

> An audit evaluating the frequency of patient re-preparation after CBCT analysis in prostate IMRT
K. Crowther (UK) EP-1843

ELECTRONIC POSTER

RTT track: Motion management and adaptive strategies

> Clinical introduction of simple adaptive radiotherapy for transitional cell bladder carcinoma
N.J.W. Willems (The Netherlands), P.S. Kroon, J.C.J. De Boer, G.J. Meijer, J.R.N. Van der Voort van Zyp, J.L. Noteboom EP-1844

> The impact of intra-fractional bladder filling on adaptive bladder radiotherapy
A. Krishnan (UK), Y. Tsang, A. Stewart-Lord EP-1845

> Verification of latency in respiratory gating with proton beam therapy
I. Maeshima (Japan) EP-1846

> Inter-fraction motion of the uterine cervix during EBRT measured using CBCT and polymer markers
F. Nijeboer, A. Snyers, L. Verhoef, T. Branje, R. Van Leeuwen (The Netherlands) EP-1847

> Dosimetric evaluation of CBCT data in adaptive PoD for cervix cancer
K. Bath (UK), D. Vignarajah, M. Marban, T. Hague, A. Baker, Y. Tsang, P. Hoskin EP-1848

> Implementation and verification of DIBH technique for treatment of left-sided breast cancer patients

D. Dupla (Poland), K. Konat, M. Janiszewska, A. Maciejczyk, R. Matkowski EP-1849

ELECTRONIC POSTER

RTT track: Patient care, side effects and communication

> Effect on smoking behavior, emotional distress and quality of life in male H/N cancer survivors
H.Y. Kuan (Taiwan), H.X. Zhao, C.Y. Huang, J.T.C. Chang EP-1850

> Why is planned palliative radiotherapy often cancelled? A retrospective exploratory study
H. Hansen (Denmark), M. Skovhus Thomsen EP-1851

> A research interventional clinic within the NHS to enable participation in prostate clinical trials
K. Crowther (UK), A. O'Neill, S. Murray, J. Cousins, O. Stewart, G. Totten, S. Hynds, K. Parsons, P. Shiels, C. Logan, D. Mitchell, C. Lyons, S. Jain EP-1852

> The role of radiotherapist in prospective evaluation of quality of life of head-neck cancer patients
D. Debojoyti (India) EP-1853

> Information seeking patterns of patients/carers and satisfaction with web-based resources
A. Craig, D. Dunne (Ireland), C. Gillham EP-1854

> Dedicated patient information cancer websites: a usability comparison
S. Wall (Ireland), A. Craig EP-1855

> The impact of waiting time on survival of Lung Stereotactic Ablative Body Radiotherapy patients
Y. Tsang (UK), P. Nariyangadu, N. Shah, P. Ostler, P. Hoskin EP-1856

> Radiotherapy impairs on the bonding system in primary teeth
A. Queiroz (Brazil), T. Mellara, P. Nelson-Filho, J. Arid, J. Romano, H. Oliveira, R. Palma-Dibb EP-1857

ELECTRONIC POSTER

RTT track: Education and training/role development

> Implementation of nursing consultations following adjuvant radiotherapy for breast cancer
S. Petri (Denmark), A.B. Krog, L. Prenter EP-1858

> RTTs challenge's in re-plan decision
D. Radola (Poland) EP-1859

ELECTRONIC POSTER

RTT track: Risk management/quality management

> A process and human factors engineering paradigm for radiation oncology
K.C. Chan (Hong Kong SAR China), W.Y. Lee EP-1860

> Patient Satisfaction with Radiotherapy Services at Institute of Oncology in Ljubljana (Slovenia)
V. Zager Marciuš (Slovenia), M. Križan, A. Oklješa Lukič, I. Oblak EP-1861

> Alert issues in the radiotherapy
D. Eyssen (The Netherlands) EP-1862

> Risk analysis for image guided lung SBRT
A. Perez-Rozos (Spain), I. Jerez-Sainz, A. Roman, A. Otero, M. Lobato, Y. Lupiañez, J. Medina EP-1863

> Control of patients with pacemaker/implantable cardioverter defibrillator undergo radiotherapy.
M. Puertas Valiño (Spain), A. Mendez Villamon, M. Gascon Ferrer, C. Vazquez Sanchez, P. Sanagustin Pedrafita, J. Castillo Lueña, M. Tejedor Gutierrez EP-1864

> The utilization of retrospective registry for patient information of access to care
M. Siekkinen (Finland), M. Stepanov, A. Hammais, P. Rautava EP-1865

COMMUNITIES PAVILION

Communities Pavilion

The other place for networking…

All delegates will be invited to the Communities Pavilion located in the exhibition area at ESTRO 36. Designed to foster exchanges about science, projects, collaborations, and why not, job opportunities, the Communities Pavilion provides a networking forum for the wide range of stakeholders in radiation oncology.

Based on the success of the Cancer Centres Pavilion introduced at ESTRO 35 in Turin, the concept of this activity has been extended under the new name of Communities Pavilion to include this year, in addition to institutes, national societies, international radiation oncology societies, patients associations and other oncology associations, each represented within one booth.

The ESTRO Communities Pavilion is open to all ESTRO 36 participants. Entrance is free and pre-registration is not necessary.

OPENING HOURS:

- Friday 5 May from around 19:30 - 20:30 (at the networking evening)
- Saturday 6 May to Monday 8 May from 9:30- 17:00 (exhibition opening hours).

Communities Pavilion floorplan

Exhibition floorplan

ACADEMIC MEDICAL CENTER AMSTERDAM	C13
ASCO – AMERICAN SOCIETY OF CLINICAL ONCOLOGY	C15
BIR - THE BRITISH INSTITUTE OF RADIOLOGY	C3
ECPC - EUROPEAN CANCER PATIENT COALITION	C8
EFOMP - EUROPEAN FEDERATION OF ORGANISATIONS FOR MEDICAL PHYSICS	C9
EFRS - EUROPEAN FEDERATION OF RADIOGRAPHER SOCIETIES	C12
EIBIR - EUROPEAN INSTITUTE FOR BIOMEDICAL IMAGING RESEARCH	C11
EUROPA UOMO	C1
GEMELLI ART - POLICLINICO UNIVERSITARIO "AGOSTINO GEMELLI"	C6
GREATER POLAND CANCER CENTRE	C5
IRISH INSTITUTE OF RADIOGRAPHY AND RADIATION THERAPY	C4
ISTITUTO DEL RADIO - UNIVERSITY OF BRESCIA	C7
RSRMO - ROMANIAN SOCIETY OF RADIOTHERAPY AND MEDICAL ONCOLOGY	C2
UNIVERSITY MEDICAL CENTER UTRECHT	C16
UNIVERSITY OF FLORENCE – CAREGGI HOSPITAL	C10

Communities Pavilion's details

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UNIVERSITY OF FLORENCE – CAREGGI HOSPITAL C10

Department of Radiation Therapy
Largo Brambilla, 3
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Lorenzo Livi
segr-radiotp@dfc.unifi.it
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COMPANY AWARDS

Company awards overview

GEC-ESTRO best junior presentation

Sponsored by Elekta Brachytherapy

Improved class solutions for prostate brachytherapy planning via evolutionary machine learning

Stefanus Maree (NL)

Saturday 6 May from 16:30

ESTRO-Elekta Brachytherapy Award

Testing an MR-compatible afterloader for MR-based source tracking in MRI guided HDR brachytherapy

Ellis Beld (NL)

Sunday 7 from from 10:30-10:40

ESTRO-Varian Award

Trajectory Optimization in Radiotherapy Using Sectioning (TORUS)

Christopher Locke (USA)

Sunday 7 May from 17:50-18:10

ESTRO-Accuray Award

Limited interfractional variability of respiration-induced tumor motion in esophageal cancer RT

Peng Jin (NL)

Sunday 7 May from 18:00-18:10

Awardees' biographies

GEC-ESTRO BEST JUNIOR PRESENTATION

Sponsored by ELEKTA Brachytherapy

Stefanus Maree

Academic Medical Center
Amsterdam, The Netherlands

Stefanus Maree

Stef Maree is a PhD student at the Academic Medical Center (AMC) in Amsterdam, The Netherlands. He started in February 2016, after obtaining his masters in applied mathematics from the Technology University of Delft, The Netherlands. His PhD position is within the project titled 'ICT-based Innovations in the battle against cancer – next-generation patient-tailored brachytherapy cancer treatment planning' that is funded by the Netherlands Organisation for Scientific Research and Elekta. The project is a collaboration between the AMC, the National Research Institute for Mathematics and Computer Science in The Netherlands (Centrum Wiskunde & Informatica (CWI)), and Elekta Brachytherapy.

In this project, state-of-the art optimisation methods, to be specific, evolutionary algorithms that are developed at CWI, will be advanced and exploited to improve the decision-making process in brachytherapy treatment planning. Stef's focus within the project is both on the development of novel algorithms as well as the application of these algorithms in machine learning to perform direct expert knowledge elicitation, to determine the best way of formulating the optimisation problem to be solved that results in a treatment plan that requires no or very little additional fine-tuning.

ESTRO-ELEKTA BRACHYTHERAPY AWARD

Ellis Beld

Department of Radiotherapy, UMC Utrecht
Utrecht, The Netherlands

Ellis Beld

Ellis Beld graduated in Biomedical Physics, a master track of Biomedical Engineering, at the University of Twente, The Netherlands, in 2014. She performed her master thesis research at the Department of Radiotherapy of the University Medical Center Utrecht. Her thesis work was focused on background field correction for phase-based MRI. In June 2014, she started working as a PhD candidate at the Department of Radiotherapy at University Medical Center Utrecht. The main focus of her research is on the development of techniques/methods for real-time MRI guidance of high dose rate (HDR) brachytherapy. Her current research topic is real-time MR-guided HDR brachytherapy source tracking to develop a method for real-time verification of the treatment.

ESTRO-VARIAN AWARD

Christopher Locke

Stanford University School of Medicine
Stanford, California, USA

Christopher Locke

Christopher Locke was born and raised in Canada, and did his undergraduate studies at the University of Victoria, in Mathematics and Physics. He moved to Japan after completing his BSc, where he received his PhD from the Tokyo Institute of Technology, in theoretical physics with his thesis titled 'ODE/IM correspondence and affine Toda field equations'. He started work as a postdoctoral scholar shortly after at the Stanford University School of Medicine Department of Radiation Oncology. His research now focuses on the development of novel trajectory optimisation techniques for radiotherapy treatment plans.

ESTRO-ACCURAY AWARD

Peng Jin

Academic Medical Center, University of Amsterdam
Amsterdam, The Netherlands

Peng Jin

Peng Jin obtained his MSc in Electrical Engineering in 2013 at the University of Twente, The Netherlands. In his final project, he designed and manufactured a deformable and MRI-compatible prostate phantom. In addition, he developed a real-time automatic approach based on the active appearance model to segment the prostate during the MRI-guided prostate biopsy procedure, in collaboration with the Radboud University Medical Center, The Netherlands.

Since the autumn of 2013, Peng Jin started working as a PhD student at the Department of Radiation Oncology of the Academic Medical Center, The Netherlands. His research focuses on the geometrical uncertainties in the image-guided esophageal cancer radiotherapy and aims to improve the accuracy of radiotherapy for esophageal cancer. This project is sponsored by Elekta.

Peng Jin's project started with the feasible implantation of fiducial markers around the esophageal tumour to mark the borders of the primary tumour in the craniocaudal direction. With the clear identification of the fiducial markers in the CT and cone-beam CT, interfractional position variation and respiration-induced tumour motion were quantified to help with creating a direction- and region-specific margin recipe. He has successfully published the majority of his work in *Radiotherapy and Oncology* and presented his work at ESTRO and SPIE Medical Imaging conferences.

Peng Jin expects to finish his PhD project at the end of 2017. After obtaining his PhD, he hopes to continue working in the research field of image-guided radiotherapy.

2017 ONLINE CONTOURING WORKSHOPS

FALCON

Online delineation workshops are ESTRO's newest educational product. During these workshops radiotherapy professionals can now experience the ESTRO expertise from the comfort of their own homes.

Workshops consist of three live online sessions where experts share their knowledge on the specific tumour sites. Participants learn tips and tricks for improved contouring, and are involved in stimulating discussions during the live sessions which result in increased understanding of the tumour site at hand.

WORKSHOP TOPIC	DATES		
Lymphoma	15 May	22 May	29 May
Head and Neck Cancer	30 May	6 June	13 June
Rectal Cancer	6 September	13 September	20 September
Breast Cancer	4 October	11 October	18 October
Oesophageal Cancer	17 October	24 October	30 October
Prostate Cancer	7 November	14 November	21 November
Paediatric Oncology	5 December	12 December	19 December

Book now for the 2 upcoming online workshops

LYMPHOMA
15, 22 and 29 May 2017

The workshop will focus on lymphoma modern radiation treatments such as Involved Site RadioTherapy (ISRT), involved node radiotherapy (INRT) and the preferable radiotherapy techniques in different situations including the appropriate pre-chemo imaging.

The contouring exercise consists of delineating the initially involved lymphoma volume in the neck and mediastinum, and the post-chemotherapy CTV, following International Lymphoma Radiation Oncology Group (ILROG) guidelines.

HEAD AND NECK CANCER
30 May, 6 June and 13 June 2017

How can we properly solve the enigma of which volumes to encompass in our CTV? How many CTVs according to location and extension of the disease should we create? Which organs at risk do we have to contour and how? The aim of this workshop is to give you the appropriate skills to be able to justify the volumes to include and how they should be distributed within the different CTVs to be treated. It will also include the delineation of organs at risk.

All the details on the workshops can be found on www.estro.org

ESTRO
European Society for RADIOTHERAPY & ONCOLOGY

SATELLITE SYMPOSIA

Friday 5 May 2017 (17:15-18:15)

Saturday 6 May 2017 (13:15-14:15)

Sunday 7 May 2017 (13:15-14:15)

Monday 8 May 2017 (13:15-14:15)

Bayer

Pre-meeting satellite symposium

Friday 5 May 2017
17:15-18:15
Room: Strauss 1

Clinical masterclass in prostate cancer: the pivotal role of the radiation oncologist

Chair: J. O'Sullivan

17:15 > Welcome and introduction
J. O'Sullivan

17:25 > The radiobiology of ionising radiation therapy in prostate cancer: state of the art
K. Prise

17:40 > Enhancing the role of radiation therapies in mCRPC
N. van As

17:55 > Partnership and participation in the MDT: interactive case studies
V. Khoo

18:10 > Q&A
J. O'Sullivan

Accuray

Saturday 6 May 2017
13:15-14:15
Room: Stolz 1-2

Advanced | Personalized | Integrated

Moderator: Birgit Fleurent, VP Marketing, Patient Access and Customer Loyalty, Accuray

13:15 - 13:20 > Welcome and latest news
Robert Hill
Senior Vice President R&D and Chief Product Officer, Accuray

13:20 – 13:35 > Radiotherapy - A central role in driving treatment for all
Dr Cary Adams
CEO, Union for International Cancer Control (UICC) and Chair, NCD Alliance, Geneva, Switzerland

13:35 – 13:55 > Prostate hypofractionation: how high and fast can we go?
Prof Vincent Khoo
The Royal Marsden NHS Foundation Trust, London, UK

13:55 – 14:15 > TomoTherapy® treats all breasts
Prof Roberto Orecchia
Chair of Radiation Therapy, University of Milan and Scientific Director at the European Institute of Oncology (IEO), Milan, Italy

Visit Accuray at booth 1400 for more information

Carl Zeiss Meditec AG

Saturday 6 May 2017
13:15-14:15
Room: Lehar 5
Lunch boxes provided

INTRABEAM as radiation treatment platform: research status of IORT in neurooncologic tumors

Chairs: ***Prof Pedro C. Lara Jimenez - Hospital Universitario de Gran Canaria Doctor Negrín, Las Palmas de Gran Canaria, Spain***
Prof Barbara Jereczek-Fossa - IEO Istituto Europeo di Oncologia Milano, Italy

13:15 > Introduction
Chairs

13:15 – 13:30 > Localized treatment of spine metastasis: process and planning of V-IORT
Prof Barbara Jereczek-Fossa
MD - IEO Istituto Europeo di Oncologia Milano, Italy

13:30 – 13:45 > How to set up IORT treatment in brain tumors: Experience at the university of Las Palmas
Prof Pedro C. Lara Jimenez
Hospital Universitario de Gran Canaria Doctor Negrín, Las Palmas de Gran Canaria, Spain

13:45 – 14:00 > Brain metastasis working schemes of IORT and brachytherapy in brain radiation therapy, the Augsburg hospital experience
Dr med. Henning Kahl, MD
Augsburg Hospital, Augsburg, Germany

14:00 – 14:15 > Overview of IORT in neurosurgical tumors: status, research, future perspectives and first results of the INTRAGO phase I/II trial
Dr med. Frank A. Giordano, MD
University Medical Center Mannheim | University Heidelberg, Mannheim, Germany

Visit Carl Zeiss Meditec AG at booth 1750 for more information

Elekta

Saturday 6 May 2017
13:15-14:15
Room: Strauss 1
Lunch boxes provided

Image guided treatments - Focus where it matters

Chairs: ***Joel Goldwein Sr. - Vice President Medical Affairs Elekta***
Ben Pais - Vice President Medical Affairs, Elekta

13:15 > Welcome
Elekta

13:20 > High definition dynamic radiosurgery
Bora Tas, PhD, Chief Medical Physicist
Dept. of Radiation Oncology, Yeni Yuzyil University Medicine Faculty, Gaziosmanpasa Hospital, Istanbul, Turkey

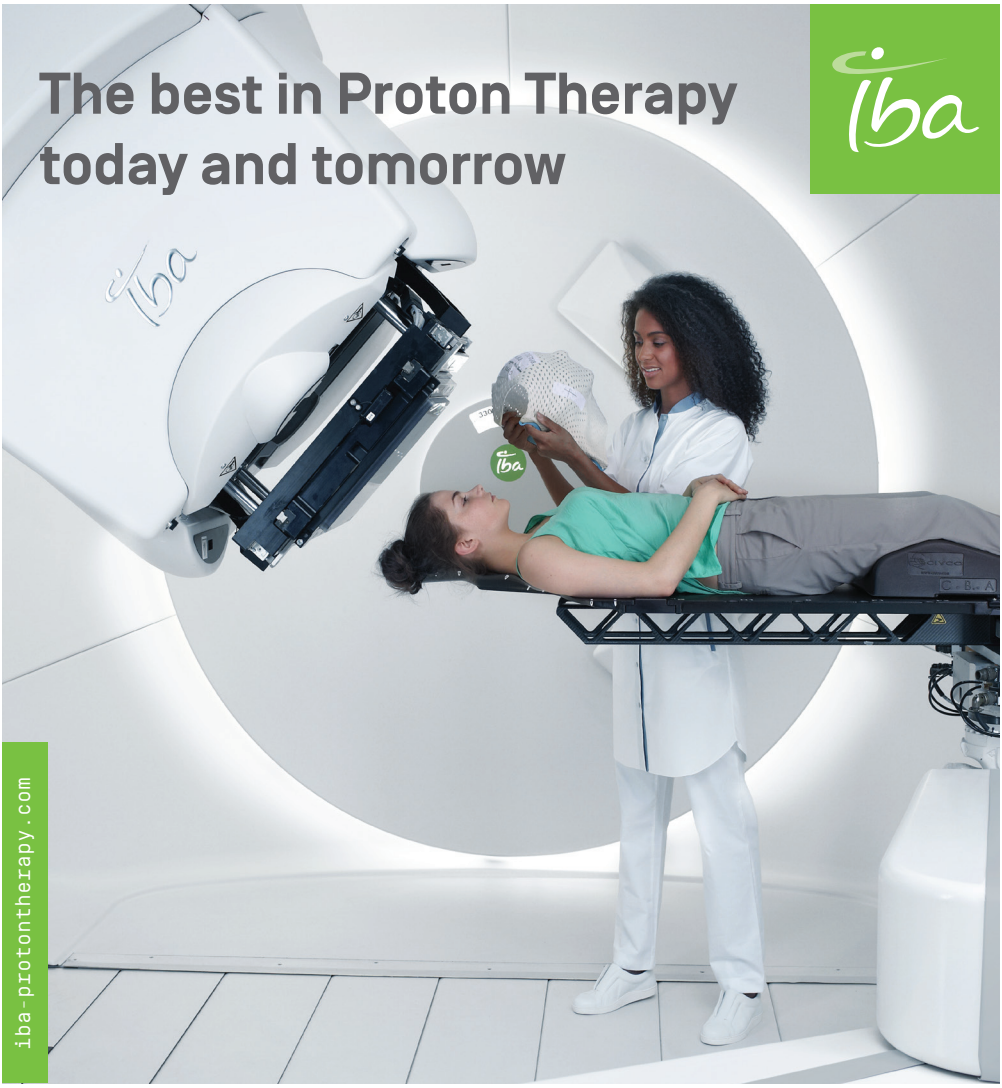
13:35 > Evolution of intracranial radiosurgery
Priv. Doz. Dr Sabine K. Mai
Klinik für Strahlentherapie und Radioonkologie, Universitätsklinikum Mannheim, Germany

13:50 > MRI guided radiotherapy for cervix cancer: a continuing story
Dr Ina Jurgenliemk-Schulz, MD, PhD, Radiation Oncologist
Department of Radiation Oncology , University Medical Center Utrecht , The Netherlands

14:05 > Concluding remarks and Q&A
Elekta

Visit Elekta at booth 3000 for more information

The best in Proton Therapy today and tomorrow



iba-protontherapy.com

Let's meet to talk about Proton Therapy at the IBA booth #5800

12
months of installation before the first patient

30
years of experience and innovation

47
partners perfecting cancer care together

1000
patients treated every day on IBA solutions

IBA SA (Ion Beam Applications SA)

Saturday 6 May 2017
13:15-14:15
Room: Schubert
Lunch boxes provided

Is there anything that can stop proton therapy from being a future standard of care?

***Chair:** Prof Michael Baumann, MD Chairman and scientific director, German Cancer Research Center (DKFZ), Heidelberg, Germany*

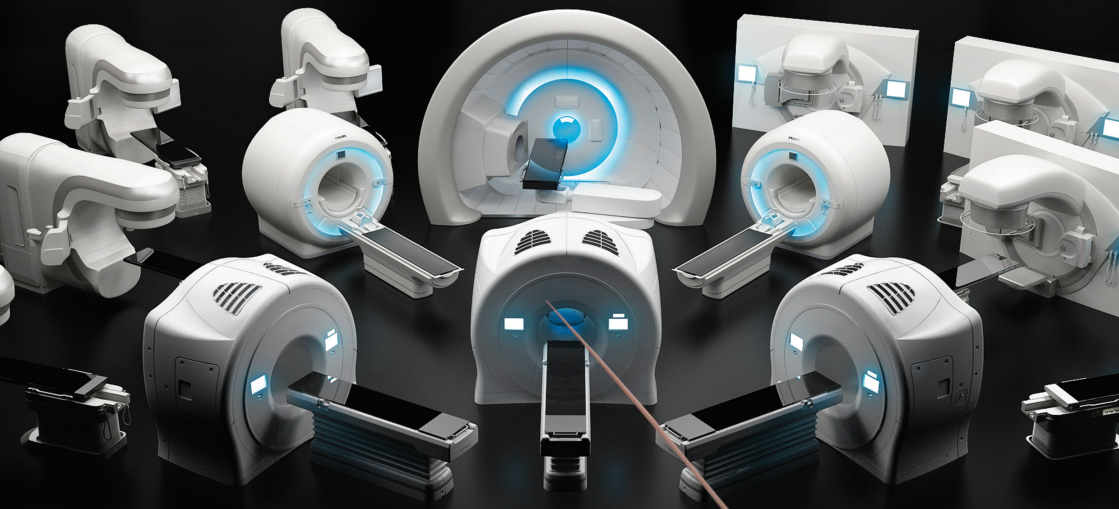
13:15 – 13:35 > Proton therapy: new treatment modality in our armamentarium
Prof Dr James M. Metz, MD
Chair of Radiation Oncology, University of Pennsylvania Perelman Center for Advanced Medicine, PA, USA

13:35 – 13:55 > Should more patients be treated with proton therapy?
Prof Dr Mechthild Krause, MD Director
Oncoray - Institute of Radiation Oncology, Helmholtz-Zentrum Dresden-Rossendorf, Germany

13:55 – 14:15 > Panel discussion: is there anything that can stop proton therapy from being a future standard of care?
Prof Dr Michael Baumann, MD
Chairman and scientific director, German Cancer Research Center (DKFZ), Heidelberg, Germany

Visit IBA at booth 5800 for more information

RayStation



HARMONIZE YOUR TREATMENT PLANNING

Multiple modalities. Diverse treatment machines. Numerous software systems. There's a lot to orchestrate if you want to reach the highs in treatment quality and efficiency. If that sounds like a familiar tune, take a look at RayStation 6*. Now you have one control center for all your treatment planning needs – any equipment composition, any scale. RayStation has always led the way when it comes to technology integration, and now we're proud to announce support for TomoTherapy systems. If that's music to your ears, visit **raysearchlabs.com/raystation6**

* Subject to regulatory clearance in some markets.

ADVANCING CANCER TREATMENT

Visit us at booth #1600 and get a demo

RaySearch Laboratories

RaySearch Laboratories

Saturday 6 May 2017
13:15-14:15
Room: Lehar 1-3
Lunch boxes provided

Advancing cancer treatment through software innovation

Chair: ***Simeon Nill - Head of Translational Radiotherapy Physics, Joint Department of Physics at The Institute of Cancer Research and the Royal Marsden NHS Foundation Trust, London, UK***

13:15 - 13:40 > Advancing cancer treatment through software innovation
Johan Löf
Founder & CEO, RaySearch Laboratories AB, Stockholm, Sweden

13:40- 13:55 > How to contribute to evidence-based radiotherapy in routine daily practice. From dream to reality.
Johannes A. Langendijk
Professor and chair of the department of Radiation Oncology, University Medical Centre Groningen, Groningen, The Netherlands

13:55 - 14:10 > Using RayStation as a unified treatment planning system to free up physicians' time
Xavier Mirabel
Professor and chair of the department of radiation therapy, Centre Oscar Lambret, Lille, France

Q&A (5 min)

Visit RaySearch Laboratories at booth 1600 for more information.

Brainlab

Sunday 7 May 2017
13:15-14:15
Room: Stolz 1-2
Lunch boxes provided

Stereotactic radiosurgery for brain tumors

Chair: Roberto Spiegelmann, MD. Sheba Medical Center, Israel

13:15 – 13:30 > Clinical evaluation of Elements Multiple Brain Mets SRS
Roberto Spiegelmann, MD
Sheba Medical Center, Israel

13:30 – 13:45 > Dosimetric evaluation of Elements Multiple Brain Mets SRS
Manuel Todorovic, PhD
Universitätsklinikum Hamburg-Eppendorf, Germany

13:45 – 14:00 > Clinical evaluation of Elements Cranial SRS
Reinhard Wurm, MD
Klinikum Frankfurt (Oder), Germany

14:00 – 14:15 > Dosimetric evaluation of Elements Cranial SRS
James Robar, PhD
Queen Elizabeth II Health Science Centre, Canada

Visit Brainlab at booth 2800 for more information

Siemens Healthcare GmbH

Sunday 7 May 2017
13:15-14:15
Room: Strauss 1
Lunch boxes provided

New trends in imaging for radiation therapy

Chair: Elena Nioutsikou, Siemens Healthcare GmbH, Germany

13:15-13:40 > Direct Density from CT imaging: a paradigm shift in RT?
Wouter van Elmpt, PhD
MAASTRO, The Netherlands

13:40-14:05 > Respiratory motion management strategies in imaging for lung cancer radiotherapy
Mirjana Josipovic, PhD
Rigshospitalet, Denmark

14:05-14:15 > How can imaging empower radiation therapy?
Elena Nioutsikou
Siemens Healthcare GmbH, Germany

Visit Siemens Healhineers at booth 3200 for more information

Sun Nuclear Corporation

Sunday 7 May 2017
13:15-14:15
Room: Lehar 5
Lunch boxes provided

New platform and solutions for QA and dosimetry in RT

Chair: Roberto Casado, Sun Nuclear Corporation, Melbourne, FL, USA

13:15 > Welcome address
Roberto Casado
Sun Nuclear Corporation, Melbourne, FL

13:20 > Clinical implementation of DVH based IMRT / VMAT QA
Sara Bresciani / Michele Stasi
Institute for Cancer Research and Treatment, Candiolo, Italy

13:35 > An Integrated QA platform applied throughout the treatment course
Andrew Reilly / Aisling Haughey
North West Cancer Center, Londonderry, Northern Ireland, UK

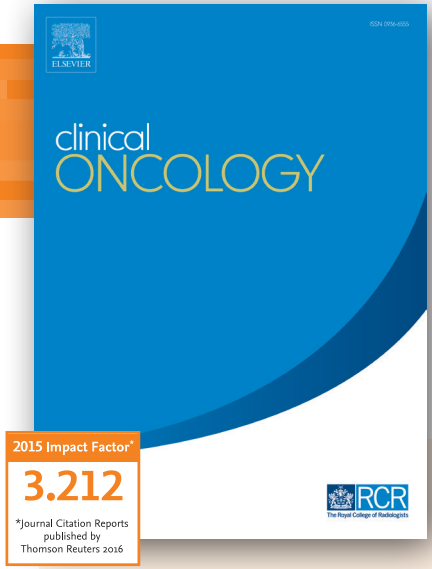
14:00 > TPS commissioning using a cylindrical water tank equipped with unique SRS/ SBRT tools
Andrea Girardi
UZ Brussel, Brussels, Belgium

Visit Sun Nuclear Corporation at booth 5600 for more information

ELSEVIER

The Royal College of Radiologists

clinical ONCOLOGY



2015 Impact Factor*

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*Journal Citation Reports published by Thomson Reuters 2016

EDITOR: Dr. Charlotte Coles, *Addenbrookes Hospital, Cambridge, UK*

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VARIAN medical systems

Varian Medical Systems

Sunday 7 May 2017
13:15-14:15
Room: Schubert
Lunch boxes provided

Radiotherapy Delivery Innovations – Meeting the challenges of today and the future

Chair: Patrick Kupelian, MD, Varian Medical Systems, Palo Alto, USA

13:15 – 13:20 > Introduction
Kolleen Kennedy
Varian Medical Systems, Palo Alto, USA

13:20 – 13:35 > Introducing a new paradigm in high quality integrated radiotherapy
Mu Young Lee
Varian Medical Systems, Palo Alto, USA

13:35 – 13:55 > Operational aspects of technology in the era of value based therapy
Laurence Court, PhD
University of Texas, Anderson Cancer Center, Houston, USA

13:55 – 14:15 > Treatment planning aspects of technology in the new paradigm
Chris Kennedy, PhD
University of Pennsylvania, Abramson Cancer Center, Philadelphia, USA

Visit Varian Medical Systems at booth 4000 for more information

ViewRay, Inc.

Sunday 7 May 2017
13:15-14:15
Room: Lehar 1-3
Lunch boxes provided

MRI-Guided RT with MRIdian®: perspectives from installation to clinical use

Join ViewRay for this lunchtime symposium and hear first-hand clinical experience with MRIdian®, the world's only MRI-guided radiation therapy system. Presenters from institutions treating with MRIdian® will discuss everything from implementation to on-table adaptive therapy using real-time MRI-guidance.

Visit ViewRay, Inc. at booth 400 for more information

Augmenix

Monday 8 May 2017
13:15-14:15
Room: Stolz 1-2
Lunch boxes provided

Peg hydrogel spacing for prostate radiotherapy – now with positive 3-year toxicity and QOL data

13:15-13:40 > Minimizing rectal dosimetry with hydrogel spacer: three year clinical trial results and other clinical experience
Brian Davis, MD, PhD
Professor of Radiation Oncology, Rochester, Minnesota, USA

13:40-14:05 > SpaceOAR Hydrogel – a game changer in high precision prostate radiotherapy using interstitial adaptive brachytherapy and VMAT
Razvan Galalae, MD, PhD
Associate Professor - Christian-Albrechts-University of Kiel and Head of the Department of Radiotherapy - Evangelical Clinics Gelsenkirchen - Germany

14:05-14:15 > Q & A

Visit Augmenix at booth 2250 for more information

Philips

Monday 8 May 2017
13:15-14:15
Room: Strauss 1
Lunch boxes provided

Innovations in therapy guidance, from image to plan

13.15-13.25 > Connecting the dots from imaging to treatment planning
Ardie Ermers
General Manager Radiation Oncology, Royal Philips, USA

13.25-13.45 > Dynamic planning and deformable image registration in Pinnacle^3 16: first impressions
Martin Ott, MS
Head of Medical Physics, Radiotherapy Neumarkt, Germany

13.45-14.15 > Automation from simulation to treatment plan – FAST and first impressions of RTdrive
Eugène Damen, PhD
Head of Medical Physics, The Netherlands Cancer Institute, The Netherlands

Visit Philips at booth 900 for more information

Scandidos AB

Monday 8 May 2017
13:15-14:15
Room: Lehar 4
Lunch boxes provided

Save time and increase safety with the latest innovations in QA

Chair: Anders Adolfson, VP Marketing, ScandiDos Sweden

13.15 – 13.25 > Evaluation of treatment delivery using the Delta^4 Discover transmission detector in various treatment applications.
Caterina Oliviero, PhD
Medical Physicist, University of Naples "Federico II", Italy

13.25 – 13.45 > Clinical evaluation of real-time, patient-centric QA using the Delta^4 Discover
Karl Rasmussen PhD
DABR, Assistant Professor, University of Texas Health Science Center at San Antonio, USA

13.45 – 14.00 > Plan verification for robotic stereotactic radiotherapy with the Delta^4 Phantom+
Dr Baus
Head of Medical Physics, University Hospital of Cologne, Germany

14.00 – 14.15 > Comparing dose measurement in the diagonal and the coronal/sagittal planes with the ScandiDos Delta^4 Phantom+
Primož Peterlin, PhD
Medical Physicist, Institute of Oncology Ljubljana, Slovenia

Visit ScandiDos at booth 2000 for more information

EXHIBITION

Do not miss the IBA lunch symposium on Saturday 6th of May, Room Schubert, 13:15-14:15

Chairman

Prof. Dr. Michael Baumann, MD
Chairman and scientific director, German Cancer Research Center (DKFZ), Heidelberg, Germany.

Proton Therapy: New treatment modality in our armamentarium

Prof. Dr. James M. Metz, MD
Chair of Radiation Oncology, University of Pennsylvania, Perelman Center for Advanced Medicine, PA, USA.

Should more patients be treated with Proton Therapy?

Prof. Dr. Mechthild Krause, MD
Director, Oncoray - Institute of Radiation Oncology, Helmholtz-Zentrum Dresden-Rossendorf, Germany.

Acknowledgements

ESTRO wishes to thank for their support to this congress:

- **Accuray**, sponsor of the ESTRO – Accuray award
- **Elekta**, sponsor of the ESTRO – Elekta Brachytherapy award, Junior Brachytherapy travel grants and GEC – ESTRO best junior presentation
- **IBA SA (Ion Beam Applications SA)**, sponsor of the congress lanyards and the ESTRO Super Run
- **Varian Medical Systems International AG**, sponsor of the ESTRO – Varian award and the ESTRO Super Run

and all companies having supported the participation of delegates in the congress and/or participating to the technical exhibition.

Floorplan


ENTRANCE
ENTRANCE
10 20 30 40 50 60 70 80 90 100
120 130 150
COFFEE CORNER
250 300 270 350
400
500
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700
COFFEE CORNER
850
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1200 1300
1400
POSTER AREA
1500 1550
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2000 2020
2050 2070
2100 2150 2200 2250
UPPER RESTAURANT
2300 2400 2600 2500
2720 2760 2700
3000
2900 2950 3100
2800
COMMUNITIES PAVILION
4310 4330
4350 4360 4370 4380 4400
COFFEE CORNER
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4600
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3500 3550 3625 3600
3650 3700
5200 5250 5300
5400
4900 4950
5050 5100
PATIENTS DAY / LOUNGE
4980 4990 5000
5480
5500
5600
4000
S1 S2 S4 START-UP CORNER S5 S6 S7 S8 S9
3720 3740
5800
CATERING
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3D BOLUS INC.	2720
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BEEKLEY MEDICAL	10
BIONIX RADIATION THERAPY	3720
BRAINLAB	2800
CABLON MEDICAL B.V.	2100
CARL ZEISS MEDITEC AG	1750
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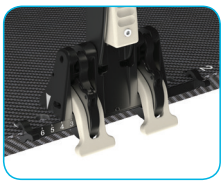

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