



ESMPE European School for Medical Physics Experts Adaptive Radiotherapy: Pros and Cons of in-room and out-of-room Imaging

August 17, 2022

Dublin, Ireland

The school will explore the advantages and limitations of different approaches to adaptive radiotherapy using imaging modalities available today, as well as a look to the future of adaptive radiotherapy. This one-day event will be accredited by EBAMP (European Board of Accreditation for Medical Physics) as CPD event for Medical Physicists at EQF Level 8 and is intended for practicing clinical Medical Physicists who are involved in Radiotherapy.

Faculty

Ben Heijmen Erasmus University Hospital, Rotterdam, Netherlands

Brendan McClean Saint Lukes Radiation Oncology Network, Dublin, Ireland

Christoph Bert Friedrich-Alexander-University of Erlangen-Nürnberg Erlangen, Germany

Efi Koutsouveli Hygeia Hospital, Athens, Greece

Jamie McClelland University College London, UK

Niklas Wahr DKFZ, Heidelberg, Germany

Time-table

17th August Wednesday	Title	Description	Lecturer
8:00-9:00	Registration		
Morning chairs: Efi Koutsouveli (GR), Brendan McClean (IE)			
MRI for Adaptive RT			
9:00-9:45	Introduction to School	What is Adaptive Radiotherapy and why is it important? Overview of different approaches	Brendan McClean (IE) / Efi Koutsouveli (GR)
09:45-10:30	MRI Linac: pros and cons	Scientific and clinical advantages of online adaptive RT using MRI linacs. Limitations and ongoing challenges.	To be announced
10:30-11:15	Out-of-room and offline MRI approaches	Combination of standard MRI and linacs to provide adaptive RT	Christoph Bert

11:15-12:00	Dose calculation in adaptive RT	Absorbed dose calculation challenges using synthetic CT from MRI and in-room cone-beam CT	Niklas Wahr
12:00-13:00	Lunch break		
Afternoon chairs: Efi Koutsouveli (GR), Brendan McClean (IR)			
CT for Adaptive RT			
13:00-13:45	In-room Cone beam CT	Use of linac based cone beam CT to allow real time adaptive solutions. Pros and cons	Ben Heijmen
13:45-14:30	Off-line CT	Conventional CT use at an appropriate frequency to enable adaptive responses.	Ben Heijmen
14:30-15:15	Registration of MR and CT	Challenges in combining MRI and CT images. Influence of motion	Jamie McClelland
15:15-16:00	Debate: The future of adaptive RT lies with MRI or with CT	Overcoming the challenges and looking to the future	All faculty

Further information

Course language	English
Level	MPE – Level 8
Maximum number of participants	80
Duration	17th August 2022
Study load	6 hours of lectures and demonstrations