

## ESMPE European School for Medical Physics Experts

### Stereotactic Body Radiotherapy

**13<sup>th</sup>-15<sup>th</sup> July 2023, Prague, Czech Republic**

EFOMP, in collaboration with the Czech Association of Medical Physicists (CAMP) and the Department of Dosimetry and Application of Ionizing Radiation of the Faculty of Nuclear Sciences and Physical Engineering, Czech Technical University in Prague invite you to the next ESMPE on **13<sup>th</sup>-15<sup>th</sup> July 2023**.

The school will be aimed at different aspects of Stereotactic Body Radiotherapy (SBRT), from basics to treatment imaging and planning to motion management, quality assurance and image guidance. Moreover, it will cover current hot topics, such as Cardiac SBRT (radioablation) and FLASH. And finally, attendees should get to know what the role of medical physicists in clinical SBRT trials is.

This two-and-a-half day event is intended for practicing clinical Medical Physicists who are involved in SBRT and is accredited by EBAMP (European Board of Accreditation for Medical Physics) as a CPD event for Medical Physicists at EQF Level 8. The event has been judged to have 15 hours of educational experience, which, according to the EBAMP protocol is equivalent to 23 CPD points. As in past school editions, there will be an optional examination at the end for those seeking a higher level of certification beyond attendance. Attendees who also successfully pass the exam obtain an extra 8 CPD points for a total of 31 CPD points.

ESMPE have decided this event will be in a hybrid format. All lecturers will give their talks on-site in Prague but participants can choose if they want to attend the school on-site (limited number of participants) or online, it will be live-streamed.

**Please note: All times shown are in CET**

#### Content

- Introduction to and Requirements for SBRT
- Clinical Trial Involvement and Audits
- Patient Preparation and Imaging
- Treatment Planning
- Quality Assurance
- Treatment Delivery
- Special Machines and Techniques

#### Final exam

The final exam is voluntary. Participants can gain additional credits when successfully pass the test.

#### Organisers

Brendan McClean (Chair of the School), Efi Koutsouveli (EFOMP Vice President)  
Oliver Blanck, Serenella Russo (Scientific Chairs)  
Jaroslav Ptáček, Tereza Hanušová (CAMP)



**ESMPE**



## Faculty

On Site Faculty		
Oliver	Blanck	Kiel, Germany
Serenella	Russo	Florence, Italy
Pietro	Mancosu	Milan, Italy
Daniela	Schmitt	Göttingen, Germany
Josep	Puxeu Vaqué	Reus (Tarragona), Spain
Daniel	Schmidhalter	Bern, Switzerland
Yvette	Seppenwoolde	Rotterdam, The Netherlands
Patricia	Diez	Northwood, United Kingdom
Joao	Seco	Heidelberg, Germany
Virtual Faculty		
Colin	Sims	Accuray, USA
Dominic	Gelinas	Varian, USA
Roberto	Pelligrini	Elekta, Sweden
Rebecca	Stumpf	IBA, Germany
Joanne	Tang	Modus, Canada
Adam	Nash	ViewRay, USA
Daniela	Poppinga	PTW, Germany
Evaggelos	Pantelis	Athens, Greece
Fredrik	Löfman	RaySearch, Sweden
Greg	Robinson	Mirion, USA
Vlad	Galyautdinaov	Mirion, USA
Philipp	Freislederer	BrainLab, Germany





**ESMPE**



**Thursday 13<sup>th</sup> July 2023**

	<b>Session</b>	<b>Title</b>	<b>Description</b>	<b>Lecturer</b>
08:00-09:00	Registration			
09:00-09:15	Welcome	Presentation of the ESMPE and introduction to the course		B. Mc Clean/E. Koutsouveli
09:15-09:35	Introduction	History, Terminology and Technology	Introduction to Stereotactic Body Radiotherapy (SBRT)	P. Mancosu
09:35-09:55		Indications and Radiobiology Rationale	Biological equivalent dose aspects for different SBRT indications	O. Blanck
09:55-10:15		Medical Physics Involvement in Clinical Trials for SBRT	Lead, design and quality assurance of clinical trials	P. Diez
10:15-10:30		Discussion		Faculty
10:30-11:00	Coffee break			
11:00-11:20	Requirements for SBRT	Procedural and Quality Requirements for Stereotactic Radiotherapy	Need to know how to start an SBRT program	D. Schmitt
11:20-11:40		Commissioning Requirements: Formalism and Reference Protocols	Small Field Methodology for SBRT	S. Russo
11:40-12:00		Credentialing and Education for SBRT: A National Perspective from the UK	Ongoing national guidance, credentialing and education for SBRT	P. Diez
12:00-12:15		Discussion		Faculty
12:15-13:45	Lunch break			
13:45-14:05	Patient Preparation, Imaging and Motion Management	Patient Immobilization and Motion Management	Overview over the different strategies and techniques	Y. Seppenwoolde
14:05-14:25		Multi-Imaging and Artificial Intelligence	Requirements for multi-imaging, registration and organs at risk segmentation	P. Mancosu
14:25-14:45		Uncertainty Margins for Non-moving and Moving Targets	Error assessment and compensation (ITV, PTV)	Y. Seppenwoolde
14:45-15:00		Discussion		Faculty
15:00-15:30	Coffee break			
15:30-15:45	Treatment Planning	Critical Structure Limits, Dose Prescription and Reporting	The table on the wall and ICRU report 91	O. Blanck
15:45-16:30		Approaches for SBRT Planning: A Practical Guideline	Tips and tricks for SBRT planning based on clinical cases	D. Schmidhalter
16:30-17:42		Practical Treatment Planning for various Systems and Techniques	Focus on automatization	See virtual agenda
17:42-18:00		Discussion		Faculty
19:30-22:30	Social Dinner - Participants + Lecturers			



**ESMPE**



**Friday 14<sup>th</sup> July 2023**

	<b>Session</b>	<b>Title</b>	<b>Description</b>	<b>Lecturer</b>
09:00-09:15	Treatment Planning	Summary of the Last Day		Chair
09:15-09:35		Modeling and Measurements for Small Fields	Overview of the formalism and recommended detectors	J. Puxeu
09:35-09:55		Dose Calculation, Robust Planning and Uncertainties	Class solutions, modulation indices and uncertainties for dose calculations	J. Puxeu
09:55-10:15		Lessons learned from large Multiplatform Benchmarks	Platform and user independent harmonization	D. Schmitt
10:15-10:30		Discussion		Faculty
10:30-11:00	Coffee break			
11:00-11:20	Quality Assurance	Machine Specific Quality Assurance: From Daily Checks to End-2-End Tests	QA requirements and options on SBRT treatment systems	D. Schmidhalter
11:20-11:40		Patient Specific Quality Assurance: From 2nd Dose Calculation to Log Files	QA requirements and options on SBRT treatment plans (I)	S. Russo
11:40-12:00		Patient Specific Quality Assurance: From Phantoms to Realtime Dosimetry	QA requirements and options on SBRT treatment plans (II)	P. Mancosu
12:00-12:15		Discussion		Faculty
12:15-13:45	Lunch break			
13:45-14:05	Quality Assurance	Quality Assurance for Motion Compensation	QA Requirements and possible equipment	D. Schmitt
14:05-14:25		System and Quality Assurance Audits: A European Consortium Approach	QA audit within the H2020 STOPSTORM Project	O. Blanck
14:25-14:45		Risk Analysis for SBRT	Proactive and Reactive approaches for risk management in SBRT	S. Russo
14:45-15:00		Discussion		Faculty
15:00-15:30	Coffee break			
15:30-17:30	Quality Assurance	Practical Quality Assurance for various Systems and Techniques	Focus on automatization	See virtual agenda
17:30-17.45		Discussion		Faculty
Visit Prague - Social Gathering				



**ESMPE**



**Virtual Session on Thursday 13<sup>th</sup> July 2023**

	<b>Session</b>	<b>Title</b>	<b>Description</b>	<b>Lecturer</b>
16:30-16:42	Practical Treatment Planning for various Systems and Techniques	Automated treatment planning with deep learning	Treatment planning with RaySearch	F. Löfman
16:42-16:54		Automation and standardization in SBRT treatment planning	Treatment planning with BrainLab	P. Freislederer
16:54-17:06		Automated contouring and planning for SBRT patients	Treatment planning with Elekta Monaco	R. Pellegrini
17:06-17:18		Intelligent automated treatment planning	Treatment planning for Varian Ethos	D. Gelinas
17:18-17:30		Automation and optimization efficiency	Treatment planning for Accuray CyberKnife and Radixact	C. Sims
17:30-17:42		Automated adaptive on-table treatment replanning workflow	Adaptive treatment replanning with ViewRay MRIdian	A. Nash

**Virtual Session on Friday 14<sup>th</sup> July 2023**

	<b>Session</b>	<b>Title</b>	<b>Description</b>	<b>Lecturer</b>
15:30-15:45	Practical Quality Assurance for various Systems and Techniques	High resolution CMOS detector array for stereotactic radiotherapy PSQA	Quality Assurance with IBA Detector Arrays	R. Stumpf
15:45-16:00		Novel QA Solutions for Stereotactic Delivery	Quality Assurance Innovation of Sun Nuclear	G. Robinson
16:00-16:15		End2End QA of Adaptive Radiotherapy	Quality Assurance with PTW Phantoms	D. Poppinga
16:15-16:30		Optimal Motion QA for MR-guided SBRT	Quality Assurance Solutions from CIRS	V. Galyautdinaov
16:30-16:45		End-to-end motion QA for MR-guided SBRT	Quality Assurance with the Modus Motion Phantom	J. Tang
16:45-17:00		Practical QA for Robotic-guided SBRT	Quality Assurance for the CyberKnife	E. Pantelis





# ESMPE



## Saturday 15<sup>th</sup> July 2023

	Session	Title	Description	Lecturer
09:00-09:15	Image Guidance and Treatment Delivery	Summary of the Last Day		Chair
09:15-09:35		Interfraction Image Guidance and Adaptation	Practical aspects and pitfalls of in-room and out-of-room motion monitoring and position/plan adaptation	Y. Seppenwoolde
09:35-09:55		Intrafraction Motion Monitoring and Compensation		J. Seco
09:55-10:15		Online Plan-Adaptation		D. Schmidhalter
10:15-10:30		Discussion		
10:30-11:00	Coffee break			
11:00-11:30	Special Topics	Potential of Proton Radiotherapy and FLASH for SBRT	Overview of proton FLASH: Basic and preclinical studies and clinical implementation	J. Seco
11:30-12:00		Stereotatic Arrhythmia Radiomodulation (STAR)	Overview of STAR: Rational, techniques and clinical effects and results	O. Blanck
12:00-13:00	Final examination			





# ESMPE



Course language	English
Level	MPE
Registration fee* (2 main meals, 5 coffee breaks, 1 social dinner)	300 € 350 € (from 20th June 2023 )
Reduced registration fee* · subsidized by EFOMP · first-come, first-served policy	150 € - for the first 15 attendees (max. 2 from one country) coming from the following European countries: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Estonia, Greece, Hungary, Latvia, Lithuania, Moldova, North Macedonia, Poland, Portugal, Romania, Serbia, Slovak Republic, Slovenia, Ukraine.
Number of onsite participants Number of online participants	50 100
Duration	13 <sup>th</sup> -15 <sup>th</sup> July 2023
Study load	15 hours of lectures and demonstrations
Venue	Department of Dosimetry and Application of Ionizing Radiation, Faculty of Nuclear Sciences and Physical Engineering, Czech Technical University in Prague, Břehová 7, 115 19 Prague 1, CZECH REPUBLIC
GPS coordinates	50°5'27.737"N, 14°24'58.713"E
Accommodation	Individual
Information, programme at:	<a href="http://www.efomp.org">www.efomp.org</a>
Registration	Electronic registration via <a href="http://www.efomp.org">EFOMP website</a>
Registration period	10th January 2023 – 10th July 2023 (online only)

- payment must be done in 14 days following the pre-registration, otherwise pre-registration will be cancelled.
- payment must be done via EFOMP online payment system using a credit card; no bank transfers are accepted.

#### Follow ESMPE editions on

EFOMP [website](http://www.efomp.org)  
EFOMP [Twitter](#)  
EFOMP [LinkedIn](#)  
EFOMP [Facebook](#)  
EFOMP [Instagram](#)

