ESMPE
European School for
Medical Physics Experts

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ESMPE European School for Medical Physics Experts
Particle Therapy:
State of the art and future developments

10th-11th December 2020

EFOMP would like to invite you to the next ESMPE in **Particle Therapy: State of the art and future developments.** The school will be organized as a 2-day virtual meeting, which will be held on 10th-11th December 2020.

The school will be focused on the Medical Physics aspects of Particle Therapy and will be aimed at presenting the state-of-the-art and future developments in Particle Therapy.

This two-day event will be accredited by EBAMP (European Board of Accreditation for Medical Physics) as a CPD event for Medical Physicists at EQF Level 8 and is intended for Medical Physicists Experts who wish to expand their knowledge in Particle Therapy. Certificates of attendance will be given to those who attend the whole course.

Content

Technical aspects
Dosimetry and quality assurance
Treatment planning
Positioning, moving organs.
Radiobiology
Innovation (including Flash therapy, proton arc therapy, spatial fractionation, sources)

Organizers

Alberto Torresin (Chair of the School),

Yolanda Prezado (Scientific Chair), **Juan Diego Azcona Armendariz (**Co-Chair**)**

Efi Koutsouveli, Christos Alexakos (ESMPE online platform)

DETECTOR
DEVICES AND TECHNOLOGIES TORINO

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Faculty

Ugo Amaldi	Milan University, Italy
Juan Diego Azcona	Clinica Universitaria de Navarra, Spain
Xuafeng Ding	Beaumont, USA
Marco Durante	GSI Helmholtz Centre for Heavy Ion Research, Germany
Faustino Gomez	Universidad de Santiago de Compostela, Spain
Oliver Jackel	German Cancer Research Center – DKFZ, Germany
Tony Lomax	Paul Scherrer Institute – PSI, Switzerland
Kenneth Long	Imperial College London, UK
Ludovic de Marzi	Institut Curie, France
Alejandro Mazal	Quiron Proton therapy Centre, Spain
Radhe Mohan	MD Anderson, USA
Harald Paganetti	Massachusetts General Hospital, USA
Yolanda Prezado	Institut Curie, France
Joao Seco	German Cancer Research Center – DKFZ, Germany
Marco Shippers	Paul Scherrer Institute – PSI, Switzerland

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Thursday 10th December 2020				
	Session	**Title**	**Description**	**Lecturer**
8:45-9:00 CET			Introduction to the Course	
9:00-09:30	Setting the scene	Particle Therapy: present and future	Pros and Cons of Particle Therapy General overview, state of the art, future perspectives	M. Durante
9:30-10.00	Technical aspects	Technical aspects of Particle therapy	Accelerators Beam delivery Beam parameters	M. Schippers
10:15-10:45	VISIONRT Early experiences of SGRT in a newly installed Proton machine			S. Petillion (University Hospital Leuven)
10:45-11:15	Dosimetry and QA	(Micro) dosimetry in particle therapy	Relevant dosimetric aspects in PT (including detectors) Microdosimetry	F. Gomez
11:15-11:45		Quality assurance in Particle therapy	Machine and patient specific QA	O. Jackel
12:00-12:30	IBA Dosimetry Latest evolution and best-practice in Proton Therapy Patient Quality Assurance			M. Blakey (Provision Cares Proton Therapy Centers, US)
12.30-13.00	Treatment planning	Treatment planning in particle therapy I	Dose calculation algorithms in proton beam therapy	T. Lomax
13.00-13.30		Treatment planning in particle therapy II	Uncertainties/Introduction to robust planning	A. Mazal
13.30-14.00	Positioning/Image guidance	Alignment/ Imaging/Moving organs	Alignment/ Imaging/Moving organs	J. Seco
14:00-14:30	Discussion			

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Friday 11th December 2020				
	Session	**Title**	**Description**	**Lecturer**
8:45-9:00 CET			Introduction to the Course	
9:00-09:30	Radiobiology	Radiation biology in Particle Therapy	Basics of Radiation biology in PT RBE/LET	H. Paganetti
9:30-10.00	Innovation in PT	Flash therapy	Overview of Proton Flash therapy Main aspects and risks in proton Flash therapy Treatment planning in Flash therapy	L. de Marzi
10:15-10:45	DETECTOR Solutions for PT experimental room and future Flash Therapy developments			M. Rovituso (Holland PTC)
10:45-11:05	Innovation in PT	PT and immunotherapy	Immunogenic modulation of charged particles irradiations. Future perspectives	R. Mohan
11:05-11:25		Proton arc therapy	Introduction to Proton Arc Therapy Dosimetry	X. Ding
11:25-11:45		Spatial fractionation and PT	Overview Dosimetry and Medical Physics aspects	Y. Prezado
12:00-12:30	Break			
12.30-12.35	Innovation in PT	New accelerators	Overview of new (compact) accelerator concepts Perspectives	U. Amaldi
12.35-12.55		Laser driven-sources	Status of laser-driven sources for Particle therapy Perspectives	K. Long
12.55-13.15		Concluding Remarks		J. Diego Azcona

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Further Information

Course language	English
Level	Medical Physics Expert (MPE)
Registration fee*	Open to Individual Associate Members of EFOMP
Maximum number of participants	200
Duration	10th December 2020 – 11th December 2020
Time zone	Central European Time
Study load	8h
Venue	Online
Website:	EFOMP school
Information, programme at:	www.efomp.org
Registration	Electronic registration via EFOMP website
Registration period	18th September 2020 – 1th December 2020

*Free admission is reserved to Individual Associate members of EFOMP on a first come first served basis.

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