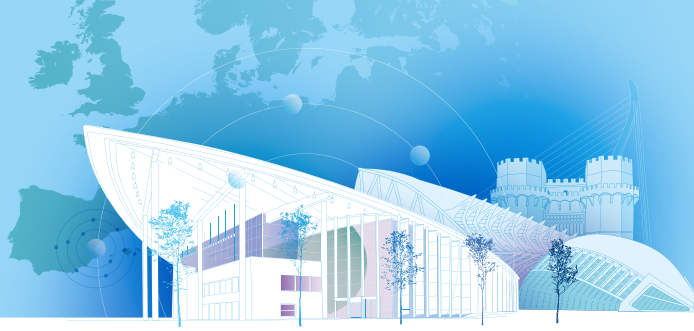
6th ECMP 2026

European Congress of Medical Physics

23-26 September 2026 | Valencia | **Spain**



ESMPE

EUROPEAN SCHOOL FOR MEDICAL PHYSICS EXPERTS

Physics, Technology and Biology in Clinical Proton and Ion Beam Therapy

September 23, **2026** | Valencia, Spain

Course Description

Proton and ion beam therapy are advanced modalities of radiation oncology with rapidly expanding clinical adoption. This one-day course will provide a comprehensive overview of the current state-of-the-art in proton and ion beam therapy, presenting key aspects for system commissioning and starting clinical operations, the technological evolution for efficient delivery, and current challenges in radiation biology and technology.

Learning Objectives

- Identify the key aspects in the commissioning and start of clinical operations in proton and ion beam therapy
- Understand the limitations of the current radiobiological models and their impact in patient treatments
- Know the latest technological developments for an efficient beam delivery

Faculty

» **Juan Diego Azcona** | Clínica Universidad de Navarra, Madrid, Spain
» **Kilian-Simon Baumann** | University of Applied Sciences Giessen, Germany
» **Armin Lühr** | Technical University Dortmund (TU Dortmund), Germany
» **Francesco Fracchiolla** | Protontherapy Department, ASL Trento, Italy

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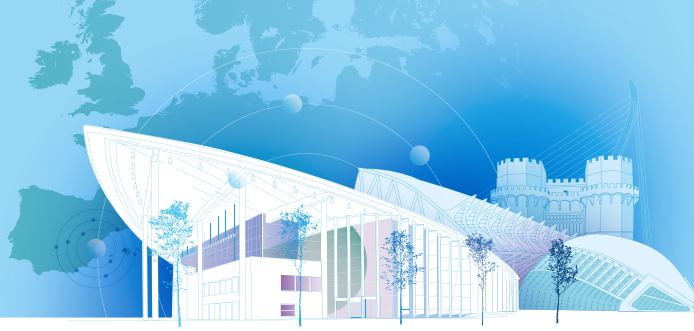

Timetable

	TITLE	DESCRIPTION	LECTURE
9:00	**COURSE PRESENTATION**		**R. Amos**
9:15	**COMMISSIONING OF A PROTON BEAM THERAPY FACILITY**	Measurements needed to characterize a proton beam. Commissioning of the detectors employed.	**J. D. Azcona**
11:00	**COMMISSIONING AND CLINICAL OPERATIONS OF AN ION BEAM THERAPY FACILITY**	Measurement and Monte Carlo simulations of base data. Quality assurance.	**K.-S. Baumann**
	LUNCH BREAK – AVAILABLE AT PARTICIPANTS EXPENSE IN THE CONGRESS VENUE		
13:00	**RADIATION BIOLOGY OF PROTON AND ION THERAPY BEAMS**	Introduction to the different biological impact of proton and ion therapy beams and its clinical effects and evidence.	**A. Lühr**
	COFFEE BREAK – AVAILABLE AT PARTICIPANTS EXPENSE IN THE CONGRESS VENUE		
15:00	**PROTON ARC IN CLINICAL PRACTICE**	Rationale, commissioning and description of clinical cases tackled with this technique and its advantages.	**F. Fracchiolla**

Further information

Course language	English
Level	MPE - Level 8
Maximum no. of participants	150
Duration	23rd September 2026
Study load	6 hours of lectures and discussions
CPD Points	Points to be confirmed (EBAMP Accrediation and Spanish certification (EVES))

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