



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

September 23, 2026 | Valencia, Spain

EBAMP APP00382 14 points

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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6th ECMP 2026

European Congress of Medical Physics

23-26 September 2026 | Valencia | Spain



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	23 rd September 2026
	Study load	6 hours of lectures and discussions
	CPD Points	EBAMP APP00382 14 points Spanish certification (EVES) - To be confirmed

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