Università degli Studi Magna Graecia di Catanzaro

DOTTORATO DI RICERCA IN

INTELLIGENZA ARTIFICIALE, INGEGNERIA BIOMEDICA E INFORMATICA

RE-SHAPING THE BEAM

Innovations in Proton Therapy



Prof. Stefan Both
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The Netherlands

April 16th, 2026
3:00 PM

Room T (Block H)
Biosciences Building
University Magna Graecia of Catanzaro

Radiotherapy is a central pillar of precision oncology, continually evolving to improve tumor control while minimizing toxicity.

This seminar explores how advanced engineering and artificial intelligence are transforming radiation oncology, from treatment planning to dose delivery.

It examines how machine learning enhances radiotherapy in general and proton therapy in particular through automated synthetic imaging generation, optimized dose planning, improved patient positioning, and value based real-time adaptive radiotherapy that adjusts to anatomical changes.

These developments point toward a future of radiotherapy that is increasingly precise, personalized, and efficient.

Short bio:

Professor Stefan Both is a Medical Physicist, a leading expert in the field of radiation oncology physics and a Fellow of the American Association of Physicists in Medicine.

He currently serves as the Head of Medical Physics at the University Medical Center Groningen (UMCG) in the Netherlands, one of Europe's premier proton therapy centers. Heis also the Scientific Director of the Particle Therapy Research Center (PARTREC) at UMCG, University of Groningen.

His work is primarily focused on the advancement of high-precision radiotherapy, with a particular emphasis on proton therapy and its clinical integration.

Throughout his career, he has bridged the gap between complex physics and clinical application, ensuring that technological advancements translate directly into improved patient outcomes.

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