



PHYSIKALISCHES KOLLOQUIUM

Referentin: **Prof. Dr. Katia Parodi**
Faculty of Physics
Ludwig-Maximilians-Universität München



Thema: **Ion beam therapy: state-of-the-art and physics research opportunities**

Zeit und Ort: Dienstag, 8.1.2019, 16:40 Uhr
Rechnagel-Bau, Hörsaal REC/C213, Haeckelstr. 3

Leiter: Prof. Dr. Arno Straessner

Kurzfassung: Owing to the favorable physical and biological properties of swift ions in matter, their application to radiation therapy for highly selective cancer treatment is rapidly spreading worldwide. To date about 70 ion therapy facilities are treating deep-seated tumours clinically, predominantly with proton beams, and about the same amount is under construction or planning. In Germany, 3 proton therapy facilities and 2 combined proton and carbon ion beam therapy centers are operational. Considerable developments have been achieved in accelerator technology, beam delivery and medical physics to enhance conformation of the radiation dose to complex shaped tumour volumes, with excellent sparing of surrounding normal tissue and critical organs. Nevertheless, full clinical exploitation of the ion beam advantages is still challenged especially by uncertainties in the knowledge of the actual dose delivery during the fractionated course of treatment, thus calling for multidisciplinary research. This talk will review the state-of-the-art in ion beam therapy, giving particular emphasis to ongoing physics-based research activities, spanning from computational modeling to detector developments and imaging methods for beam characterization and in-vivo visualization in the daily patient anatomy.

Biographie: Katia Parodi received her Ph.D. in Physics from the University of Dresden, Germany, in 2004. She then worked as postdoctoral fellow at Massachusetts General Hospital and Harvard Medical School in Boston, USA. In 2006 she returned to Germany as tenured scientist and group leader at the Heidelberg Ion Therapy Center, obtaining in 2009 her Habilitation from the Heidelberg University. Since 2012 she is full professor and Chair of Medical Physics at the Physics Faculty of the Ludwig-Maximilians-Universität München (LMU) in Munich, where she initiated a dedicated curriculum for Medical Physics within the Physics Master of Science study.

The colloquium will be followed by a Get-Together with Katia Parodi in room B202 (about 6 p.m.). Female students and staff are invited to talk to the speaker in person and discuss female perspectives on challenges in studies and professional life over drinks and snacks.

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