

GSI – SONDERSEMINAR

Im Theorieseminarraum, SB3 Raum 3.170a

Darmstadt, Planckstraße 1

Montag, den 12. September 2016 14:00 Uhr

Prof. David Grosshans/Prof. Radhe Mohan

MD Anderson Cancer Center, Houston/Texas

„ From protons to heavier ions at MD Anderson – Aiming to catch up from behind“

In the United States particle therapy is dominated by proton therapy. While proton therapy has been used for decades, clinical results based on substantial studies are only now emerging. Such results have not so far clearly demonstrated superior outcomes in comparison to photon therapy. This may be in part due to the still maturing state of the art and in part due to the use of static RBE values. Biologically optimized charged particle treatments could expand the therapeutic index of radiation therapy by selectively placing areas of the beam with high biological effectiveness so as to enhance tumor cell kill and simultaneously spare normal tissues from harm. To this end, we at MD Anderson Cancer Center, have developed high-throughput approaches to map the biologic effects of proton beams using both clonogenic survival as well as novel normal tissue assays. Such techniques have also been adapted for use with heavy ion beams at HIT. The resulting data are helping improve our understanding of RBE as a function of physical parameters.

At the same time, following the lead of Japan, Germany, Italy, Austria and China, we are considering expanding our radiotherapy research and clinical program to include heavier ions, e.g., helium and carbon. Such considerations are in an early stage and the establishment of a heavy ion center may be many years away. In the meantime, we plan to conduct research in collaboration with our partners in Germany, Austria and elsewhere to further improve our understanding of biological, immunological and physical properties of heavier ions. We believe that such research will help minimize the lead time to the generation of high level clinical evidence. We will briefly describe the type of research we are proposing and show some preliminary examples. We will also discuss our efforts to identify optimum heavy ion therapy technology. One of our goals is get feedback from the audience regarding our ideas.

Einladender: Dr. Michael Scholz

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