



EINLADUNG

zum

VERA - SEMINAR

von

Lembit Sihver

Radiation Physics Group

Atominstitut der Technischen Universität Wien

Planned Non-Clinical Research at MedAustron

First a short overview of Sihver's background and research in space dosimetry will be presented. The availability of proton beams up to 800 MeV and carbon ion beams to 400 MeV per nucleon allows a variety of topics, both related to proton and ion therapy, as well as to fundamental physics, to be addressed at MedAustron. The knowledge of nucleus-nucleus cross sections plays an important role both in physics, as a fundamental quantity describing nuclear reactions and the production of nuclear fragments during the interaction process, and for proton and ion beam therapy planning for proper dose delivery to the tumor regions. Systematic measurements of these cross sections for all relevant energies and projectile-target combinations achievable at MedAustron are therefore planned. Measurements of dose and LET distributions from both, primary and secondary particles including neutrons inside human phantoms, will also be performed. Complex DNA damage is considered a precursor of genomic instability and carcinogenesis. Since plasmid DNA is a simple and reliable endpoint/biomarker to measure radiation biological damage without repair and late cellular effects, clustered DNA damages after exposure to high LET radiation will be studied in detail. The physical properties of ion beams allow a precise dose deposition to the tumor. However, the sharp dose profile makes range verification desirable. Range verification of the beam particles in the human tissue with positron emission tomography will therefore be studied.

Donnerstag, 02. Juni 2016, 16:30 Uhr

**1090 Wien, Währinger Str. 17, "Kavalierstrakt",
1. Stock, Victor-Franz-Hess-Hörsaal**