

Aushang

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Einladung zum Seminar über „Nukleare Energieerzeugung“

Zeit: Montag, 12. Mai 2025, 11:00 Uhr

Ort: Karlsruher Institut für Technologie, Hermann-von-Helmholtz-Platz 1
76344 Eggenstein-Leopoldshafen, INR, Bau 521, Raum 302

Referent: Herr Professor Dr. Holger Podlech, Goethe Universität Frankfurt

Titel: High Power Hadron Linacs - Technology, Challenges and Design Issues

Abstract:

High-current accelerator-based neutron sources (HiCANS) rely on proton or deuteron beams with up to tens of milliamp current and energies of up to several tens of MeV. This kind of non-fission and non-spallation neutron sources are being developed offering the path to neutron fluxes comparable to fission reactors for irradiation and material testing purposes as requested by fusion materials.

The high beam current and the high duty factor lead to considerable challenges in terms of accelerator technology. An important issue is the thermal load of the cavities due to the RF losses in case of room temperature Linacs which requires well designed cooled systems. The other main issue is the beam dynamics which defines the lattice of the accelerator. Beam losses have to be minimized to avoid excessive activation of components.

The talk presents basics components and principles of high power hadron Linacs including scaling laws with respect to duty factor, gradient, thermal load and Linac length.

In addition, the latest state-of-the-art technology will also be presented on the basis of current projects (MYRRHA, FRANZ, HBS).

Hinweis: Alle auswärtigen Besucher des Seminars werden gebeten, ihren gültigen Personalausweis oder Reisepass mitzubringen