



EINLADUNG
zum
VERA - SEMINAR
von

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Production of Pure Radioactive Ion Beams for Nuclear Research

Experiments with beams of short-lived radioactive nuclei will advance our understanding of the structure of nuclei far from stability and the key reactions in stellar processes which power the universe. At the former Holifield Radioactive Ion Beam Facility (HRIBF), radioactive ion beams (RIBs) were produced using the Isotope Separator On-Line (ISOL) technique. The ISOL method can produce high-intensity RIBs with very good phase-space properties. However, the purity of the RIBs is often limited. In many cases, the isotopes of interest are produced at much lower yields than many neighboring isobars and the resolution of the mass separators are insufficient to deliver the desired isotopes with sufficient intensity and low isobaric contamination. To address this problem, various beam purification techniques were used or investigated at HRIBF to improve the elemental selectivity of the ion sources or to add an isobar suppression step in the ISOL process, including molecular side-band, selective adsorption, resonant laser ionization, ion beam cooling, and selective photodetachment; each has its unique advantages and applications.

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1. Stock, Victor-Franz-Hess-Hörsaal**