NUSTAR Seminar

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Wednesday, July 03, 2019 at 15:15 p.m.

Seminar Room Theory SB3.3.170a

GSI, Planckstraße 1, 64291 Darmstadt

“High-Resolution Mass Measurements at the FRS Ion Catcher and Recent Developments”

At the FRS Ion Catcher precision experiments are performed with the combination of a cryogenic stopping cell (CSC) and a multiple-reflection time-of-flight mass spectrometer (MR-TOF-MS). The masses of more than 40 short-lived ground and isomeric states were determined, among them the masses 9 nuclides directly for the first time. Nuclides with half-lives down to 17.9 ms and with cross sections down to 20 nbarn were measured. Mass measurements of neutron-deficient nuclides in the vicinity of 100Sn were performed, including 101In in ground and isomeric states. A novel technique to measure half-lives and branching ratios was developed and applied to the second excited state of 119Sb.

Recently, the RFQ beamline connecting the CSC with the MR-TOF-MS was upgraded with an RFQ switchyard, a laser ablation ion source for calibration of MR-TOF-MS, and a dedicated RFQ mass filter. In the CSC a 252Cf fission source was installed. Furthermore, development of the cryogenic stopping cell for the Super-FRS is underway.

Coordinators: Timo Dickel
Secretary: Luise Dörsching-Steitz
https://indico.gsi.de/event/9053/