



NUSTAR Seminar

Kathrin Wimmer

GSI Helmholtzzentrum für Schwerionenforschung, Darmstadt

Wednesday, Oktober 19 2022 at 02:30 pm CEST
hybrid meeting / theory seminar room SB3 3.170a

Zoom Link

<https://gsi-fair.zoom.us/j/69282060219>

Meeting-ID: 692 8206 0219

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In-beam gamma-ray spectroscopy with swift radioactive beams

The coexistence of single-particle and collective degrees of freedom in atomic nuclei gives rise to various exotic phenomena. In nuclei with very asymmetric proton-to-neutron ratios, the strong nuclear interaction drives shell evolution which alters the orbital spacing, and in some cases even the ordering present in stable nuclei. Such changes in the structure can have profound consequences for structure and dynamics of nuclei as well as the synthesis of elements in the universe.

In-beam gamma-ray spectroscopy is an excellent tool to study the structure of the most exotic nuclei in the laboratory.

In this talk, I will present the HiCARI project "High-resolution Cluster Array at RIBF". This hybrid array of segmented germanium detectors was constructed from contributions from around the world. The physics program includes a wide range of topics in nuclear structure addressing collective and single-particle structure of nuclei very far from stability.

In order to further enhance the sensitivity of the experimental method the use of active targets allows to determine reaction point and velocity. Such a new approach is the ERC project LISA "Lifetime measurements with Solid Active targets". Here, I will explain the basic principles and show the capabilities for future physics experiments at FAIR.

Convener: T. Dickel

Secretary: R. Krause / D. Press

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