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Advances in nuclear structure with modern gamma spectrometers

Tuesday, 1 September 2015 11:30 (30 minutes)

This talk will present selected highlights from recent campaigns in European Laboratories with modern Ge arrays. Particular attention will be dedicated to results obtained with the Advanced GAMMA Tracking Array (AGATA), during the campaign at Legnaro National Laboratory of INFN (Italy) and GSI, employing different types of reactions, including fusion, inelastic scattering and multinucleon transfer with heavy ions. Results from cold neutron capture and neutron induced fission measurements performed at ILL (Grenoble) with the EXILL Ge array will be also discussed. It will be shown how advanced gamma-spectroscopy studies can contribute to a deeper understanding of the structure of the atomic nucleus in key region of the nuclear chart, around doubly magic nuclei or in exotic systems. A detailed analysis of important nuclear structure phenomena, such as pygmy resonances, coupling between single particles and phonon excitation and shape transitions will be discussed, together with the relevance of state of the art gamma spectroscopy for application in astrophysics and applied physics.

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