Frontiers in Gamma Ray Spectroscopy FIG18

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Probing the structure of isotopically identified fission fragments @ VAMOS

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Content :

The characteristic ⍰-decay of the excited states of the long chains of isotopes of fission fragments provides fingerprints of the evolution of the underlying nuclear configurations of individual and collective motion of the nucleons as a function neutron-proton asymmetry and angular momentum. The characterization of the ⍰-decay of the excited states of these nuclei, especially those far from stability received a boost due to increased selectivity and sensitivity, primarily arising from the isotopic identification of the fission fragments produced in fusion-fission and transfer-induced fission, at energies around the Coulomb barrier @GANIL using a large acceptance spectrometer coupled with a large gamma–ray detector array.

The talk will give an overview of the study of the evolution of nuclear structure in isotopic chains of various M,Z identified fission fragments at energies around the Coulomb barrier using the VAMOS spectrometer and EXOGAM γ-array at GANIL. Further improvements in both selectivity and sensitivity, with a further upgraded VAMOS++ spectrometer and its combination with the next generation AGATA array, for prompt and delayed γ-rays will also be presented.

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