

Frontiers in Gamma Ray Spectroscopy

FIG18



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Fission Fragment Spectroscopy: Challenges and opportunities

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Content :

Nuclear fission process offers an opportunity to study the interplay of the nuclear structure and dynamics in the fission process. In nuclear fission, a large number of neutron-rich nuclei are produced and the shape of the fissioning nucleus evolves in the multidimensional space of relative separation, neck opening, mass asymmetry and deformation of the fragments. In this talk the role of nuclear shell structure as well as importance of shape deformations in the fission fragment mass distribution will be discussed. Some recent investigations on the fission fragment mass measurement using thermal neutrons from reactors will be presented. The possible experiments that can be carried out of utilizing a new setup being developed at Dhruva reactor using clover germanium detectors and LaBr₃ will be discussed.

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