

Prediction of band head spin and identical bands in superdeformed nuclei

The Identical Bands (IB's) phenomenon is studied theoretically in normal deformed bands. Using the Variable Moment of Inertia (VMI) model, the band head spin for $[^{191}\text{Hg}(\text{SD2}), ^{193}\text{Hg}(\text{SD2})]$ bands are predicted as a first step and further identical bands in $A \sim 190$ superdeformed mass region are investigated. The gamma ray transition energies in the identical bands are found the difference of (1-3) keV only. The study indicates that each pair of conjugate nuclei have identical moment of inertia. The comparison between our theoretical results and available experimental data for the dynamical moment of inertia and spins are found in good agreement.

Summary

This work is based on the Superdeformed bands.

Primary author: Mrs JAIN, Poonam (Amity university)

Presenter: Mrs JAIN, Poonam (Amity university)

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