Frontiers in Gamma Ray Spectroscopy FIG18

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Description of superdeformed nuclei possessing same F0 symmetry in 72≤N≤86 region

Content :

A total of six pairs i.e. (130Ce and 134Nd, 131Ce and 133Pr, 144Gd and 148Gd, 194Hg and 198Po, 194Tl and 195Bi, 195Tl and 197Bi) of superdeformed rotational bands possessing same F0 symmetry has been investigated. The band head spin (I0) of the six pairs possessing same F0 symmetry are assigned by using the nuclear softness formula [1]. The root mean square deviation is calculated by computing the model parameters. The calculated and the observed transition energies of the six pairs possessing same F0 symmetry are in accordance with each other. The deviation of dynamic moment of inertia of the six pairs possessing same F0 symmetry versus the rotational frequency is also studied. The evidences for $\Delta I=2$ staggering for the six pairs possessing same F0 symmetry has also been investigated.

[1] R. K. Gupta, Phys. Lett. B 36 (1971) 173-178.

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