

Frontiers in Gamma Ray Spectroscopy

FIG18

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g-factors from generalized seniority scheme

Content :

Our recently proposed generalized seniority scheme has been widely successful in explaining the reduced transition probabilities of high spin isomers and other excited states in semi-magic nuclei [1-5]. In the present paper, we use this formalism to obtain the g-factors of semi-magic nuclei, particularly for Sn and Pb isotopes. We find that the magnetic moment and the g-factor values do show a particle number independent behavior for a multi-j, mixed configuration states where generalized seniority is applicable, as expected by us [4]. The calculated results explain the experimental trends quite well. As a result, we further confirm that g-factors of all the states arising from a given mixed configuration having identical nucleons must be equal to the g-factor of a single nucleon in the same mixed configuration. This opens up a way to make predictions more easily.

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