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Determination of unknown band-head spin of 192Hg superdeformed Band

Wednesday, 1 September 2021 18:00 (30 minutes)

We present an analysis of all the known superdeformed (SD) bands in 192Hg using the modified variable moment of inertia (VMI) model to obtain the values of unknown band-head spin (I0) along with the level spin. The band-head spin so estimated is not known experimentally in band-3. A total of 3 experimentally known SD bands of 192Hg have been analyzed. Quantitatively good results of the ɣ energies and the spins for Hg band are successfully obtained. We also examine the ratio of transition energies over spin Eɣ/2I (RTEOS) to confirm the correct spin of the band-head and level spins by theVMI equation. The calculated and observed transition energies agree quite well. Also, we find the staggering pattern in band-3 is properly reproduced. In the present paper, we have reported the band-head spin for the 192Hg (b3) superdeformed band. Out of the available 3 SD bands, the band-head spin is predicted for 1 SD band, where the band-head spin is not known experimentally. As an important outcome of our study, we propose the spin assignments and level energies of the 192Hg (b3). We resolve the tentative nature of the assignments and present a unique level scheme. These results may be useful for future experiments.

Is this abstract from experiment?

No

Name of experiment and experimental site

N/A

Is the speaker for that presentation defined?

Yes

Details

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Internet talk

Yes

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