SPIN SCISSORS MODE IN ACTINIDES

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The scissors mode is investigated in the actinide region, including even-even superheavy nuclei up to ^{256}No, within the Time Dependent Hartree-Fock-Bogoliubov (TDHFB) approach. The solution of TDHFB equations by the Wigner Function Moments (WFM) method predicts a splitting of the scissors mode into three intermingled branches due to spin degrees of freedom [1]. Both the calculated energy centroid and integrated $M1$ strength in ^{254}No are in good agreement with the results of recent measurements performed by the Oslo method [2]. The energy centroids and summed $B(M1)$ values for other transuranium nuclides are predicted.

The calculations are performed also for ^{232}Th and ^{236,238}U isotopes. The scissors resonance in many actinide region nuclei exhibits a prominent double-hump structure [3,4]. The WFM analysis allows to assume that the observed splitting of scissors resonance can occur due to the separation of conventional scissors and spin-scissors excitations.

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