

Exotic rotations, triaxiality and shape coexistence in $A = 130-140$ nuclei

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The evolution of collectivity over an extended sequence of nuclei from the $A=130-140$ mass region was the subject of a recent systematic study focused on the Ce and Nd nuclei. How the nuclear shape evolves at high spins and which is rotation axis in the case of triaxially deformed nuclei are questions which are still open. To experimentally afford such topics experiments with high efficiency arrays for γ -rays, possibly complemented with specific ancillary detectors have to be performed. The global features exhibited by the high-spin rotational bands and exotic rotational excitations like the chiral and wobbling modes in the $A=130$ mass region will be presented. The new type of collective motion called "transverse wobbling", recently discovered in ^{135}Pr , and its possible existence in other nuclei of the $A=130$ mass region will be discussed.