

Tilted Axis Cranking Model

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Since about a decade or so the importance of the tilted axis cranking(TAC) model for understanding of the evolution of nuclear structure with spin has been realised for many softly deformed as well as strongly deformed quadrupole shaped nuclei. Particularly after the discovery of the so called 't-band' with high- K band head quantum number, where the 'signature' is no longer a good quantum number the TAC Hartree-Bogoliubov approach became the appropriate many-body theory where the rotation axis is tilted with respect to the body-fixed principal axes. Even the backbending features observed in heavy mass rare-earth nuclei like ^{182}Os etc are explained in terms of crossing or interaction of the ground band with the t-band. Then experimental observations of magnetic rotational bands, chiral doublet bands, and bands associated with wobbling motion of the nuclear rotation axis all are now being explained in terms of the TAC model.

In this talk a brief review of the current status of the experimental as well as theoretical developments in this area will be presented.