

The influence of triaxial deformation and quasiparticle alignment on the structure of chiral partner bands

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Abstract

The spectrum and wave-functions of chiral partner band states are investigated within a semiclassical treatment of a particle-rotor Hamiltonian with rigid quasiparticle alignments [1]. The study focuses on the variation of spectral characteristics and associated dynamics inferred by considering different triaxial deformation of the core [2] or non-axial quasiparticle alignments with arbitrary tilting [3]. The analysis is performed for valence $h_{11/2}$ proton particle and $h_{11/2}$ neutron hole alignments. As a result, distinct dynamical characteristics are identified in specific angular momentum ranges, especially concerning the chiral vibration regime.

References

- [1] R. Budaca, *Phys. Rev. C* **98** (2018) 014303.
- [2] R. Budaca, *Phys. Lett. B* **797** (2019) 134853.
- [3] R. Budaca, *Phys. Lett. B* **817** (2021) 136308.