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An Updated View on Empirical Moments of Inertia of Axially Asymmetric Nuclei

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Collective shape degrees of freedom have been a major direction in the study of the nuclear finite many-body problem for over 50 years. There is widespread evidence for quadrupole deformations, primarily of large prolate spheroidal deformation with axially symmetric rotor degrees of freedom. This naturally leads to the question of whether axially asymmetric rotor degrees of freedom are exhibited by any nuclei, with the implication of triaxial shapes. An overview of ground-state empirical moments of inertia for the 1-, 2-, and 3-axes will be given, extracted from experimental $2_{g,\gamma}^+$ energies and electric quadrupole matrix elements determined from multi-step Coulomb excitation data. The results are extracted from the latest data and compared to expectations based on rigid and irrotational inertial flow; this is an update on the initial view provided in Ref. [PLB 767, 226 (2017)].

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