Probing time-odd and tensor terms of the Skyrme functional in rotating nuclei V. HELLEMANS, University of Notre Dame, P.-H. HEENEN, Universite Libre de Bruxelles, M. BENDER, Universite Bordeaux, CNRS/IN2P3 — The parametrisation of the two-body part of a Skyrme energy density functional (EDF) can be determined by considering that it is generated by a two-body Skyrme interaction. This relation between the parameters of the functional and an interaction has often been used in single-reference EDF approaches (traditionally called self-consistent mean-field approaches).In general, the parameters of the effective interactions or EDF are adjusted to reproduce the properties of nuclear matter and the bulk properties of doubly magic nuclei. In this case, one assumes time reversal invariance, hence the so-called "time-odd" terms in the EDF, which is bilinear in densities and currents that are either even or odd under a time reversal operation, do not contribute and only the "time-even" terms are constrained by physical observables. One therefore has to investigate the role and the effect of these "time-odd" terms. In the same way, the role of a zero-range tensor interaction to the description of odd and of rotating nuclei requires to be investigated. Results on the role of both the time-odd terms and the tensor terms in the Skyrme EDF in rotating nuclei will be discussed. Supported by the US DOE under grant DE-FG02-95ER-40934.

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