Nonadiabatic quasiparticle description of triaxially deformed proton emitters

P. Arumugam[1], E. Maglione[1,2] and L. S. Ferreira[1]
[1]Centro de Física das Interacções Fundamentais, and Departmento de Física, Instituto Superior Técnico, Avenida Rovisco Pais, P1049-001 Lisbon, Portugal
[2]Dipartimento di Fisica "G. Galilei", Via Marzolo 8, I-35131 Padova, Italy
and Istituto Nazionale di Fisica Nucleare, Padova, Italy

One of the most interesting questions in nuclear structure studies of deformed proton emitters, is the role played by triaxial deformation in the decay process. Exact calculations are performed for proton emission from triaxial nuclei by extending the nonadiabatic quasiparticle method 1) to include the triaxial degrees of freedom. We present for the first time a proper formalism for triaxial proton emitters 2), which includes the treatment of the pairing residual interaction and the coupling with the excited states of the daughter nucleus. The discussion of our model and results obtained for the nuclei ^{161}Re, ^{185}Bi and ^{141}Ho will be the subject of this talk.

[1] G. Fiorin, E. Maglione and L.S. Ferreira, Phys. Rev. **C67** (2003) 054302.
[2] P. Arumugam, E. Maglione and L. S. Ferreira, Phys. Rev. **C**submitted.