QRPA study of Giant Monopole Resonances

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ABSTRACT

The quasiparticle random phase approximation (QRPA) is successful approach to study giant monopole resonances in nuclei. At present, however, a single energy density functional (EDF) parametrization able to precisely reproduce the centroids all the different isotopic chains has not yet been found. In particular, the recent experimental findings at TAMU College Station and RCNP Osaka require a detailed microscopic study. In this work we resorted at using a fully self consistent Hartree-Fock-Bogoliubov (HFB) and QRPA code. We employ Skryme functionals in the ph channel (SLy4, SLy5, SkM*, SkP) while in the pairing channel we make use of density dependent contact interactions