# Impact of the Nuclear Shape on the Soft Monopole Resonance in the $Z = 58$ Nucleus within DD-ME2+QFAM

**M. El Adri**, **A. El Batoul**, **Y. El Bassem**, **M. Oulne**

High Energy Physics and Astrophysics Laboratory, Department of Physics, Faculty of Sciences Semlalia, Cadi Ayyad University, P.O.B. 2390, Marrakesh, Morocco

The shape evolutions of some even-even isotopes of the nucleus with $Z = 58$ protons is carried out within the density-dependent meson-exchange theory. For each shape isomeric state, we have investigated the isoscalar giant monopole resonances (ISGMR) using the quasiparticle finite amplitude method (QFAM). This method allows us to explore the behavior of these resonances in various nuclear deformation. Large quadrupole deformation parameter, both in oblate and prolate configuration, causes the shoulders of ISGMR to occur in the high-energy region rather than the low-energy region. The observed shoulders are identified as soft monopoles, consistent with their conventional interpretation.