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Microscopic description of octupole deformations and collective excitations in even - even Xe and Ba isotopes

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In this talk, some of the recent results of the microscopic description of octupole collective excitations in the nuclei near N=56 and N=88 are presented. By performing the axially symmetric self-consistent mean field (SCMF) calculations with the DD-PC1 energy density functional, octupole deformations of the ground state shapes of even-even Ba and Xe isotopes are analysed. The excitation energies and transition strengths are calculated by using the quadrupole-octupole collective Hamiltonian (QOCH) model. The calculated excitation energy spectrum is mostly in good agreement with experimental data. Octupole-deformed ground states are found in Ba and Xe isotopes with neutron numbers around N=56 and N=88.
Ref. K. Nomura, L. Lotina, T. Niksic, and D. Vretenar, Phys. Rev. C 103, 054301 (2021)

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