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Theoretical study of triaxial shapes of neutron-rich Mo and Ru nuclei CHUNLI ZHANG, Michigan State Univ, GOWHAR BHAT, University of Kashmir, WITOLD NAZAREWICZ, Michigan State Univ/NSCL, JAVID SHEIKH, University of Kashmir, YUE SHI, Michigan State Univ — Recently, transition quadrupole moments in rotational bands of even-mass neutron-rich isotopes of molybdenum and ruthenium nuclei have been measured. To understand experimental data on rotational bands in the neutron-rich Mo-Ru region, we carried out theoretical analysis of moments of inertia, shapes, and transition quadrupole moments of neutron-rich even-even nuclei around ^{110}Ru using self-consistent mean-field and shell model techniques. Our self-consistent DFT calculations predict triaxial ground-state deformations in ^{106,108}Mo and $^{108.110,112}$Ru and reproduce the observed low-frequency behavior of moments of inertia. As the rotational frequency increases, a negative-γ structure becomes energetically favored. The computed transition quadrupole moments vary with angular momentum, which reflects deformation changes with rotation; those variations are consistent with experiment. The TPSM calculations explain the observed band structures assuming stable triaxial shapes.

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