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Shape evolution, mixing and coexistence around $Z=30-48$ studied with beyond-mean-field methods

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Nuclei in the region of the nuclear chart between $Z = 28$ and 50 magic numbers show a collective behavior that can be attributed to the appearance of quadrupole shape mixing and/or coexistence. Advanced energy density functional (EDF) methods, including symmetry restorations and axial and triaxial shape mixing, are the perfect tools to study these phenomena from a microscopic point of view. In this contribution I will present recent systematic calculations performed with the Gogny EDF, comparing with the available experimental data and shell model calculations.

Furthermore, I will focus on specific examples of static and dynamic shape coexistence.

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