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

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.

- [1] L. M. Robledo, T. R. Rodríguez and R. R. Rodríguez-Guzmán, *J. Phys. G: Nucl. Part. Phys.* 46, 013001 (2019)
[2] P. Garrett et al., *Phys. Rev. Lett.* 123, 142502 (2019) [3] C. Lizarazo et al., *Phys. Rev. Lett.* 124, 222501 (2020)
[4] M. Rocchini et al., *Phys. Rev. C* 103, 014311 (2021) [5] T. R. Rodríguez, *Phys. Rev. C* 90, 034306 (2014)

Presenter: RODRÍGUEZ, Tomás R. (Universidad Complutense de Madrid)

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