

Nuclear shapes and density profiles of exotic nuclei (remote)

Thursday, 2 June 2022 10:15 (20 minutes)

Exotic nuclei exhibit various nuclear shapes depending on their shell structure. In this talk, I will present our recent systematic analyses of the nuclear shapes on neutron-rich nuclei using the density distributions of microscopic mean-field models. First, I will discuss how the density profile is changed by nuclear deformation [1] and show some examples of characteristic density profiles in the island of inversion near $N=40$ [2]. This property is well reflected in the density distributions near the nuclear surface. I will show that high-energy nucleus-nucleus collision can be a promising tool to investigate such density profiles.

References

- [1] W. Horiuchi and T. Inakura, Prog. Theor. Exp. Phys. 2021, 103D02 (2021).
- [2] W. Horiuchi, T. Inakura, and S. Michimasa, Phys. Rev. C 105, 014316 (2022).

Presenter: HORIUCHI, Wataru (Osaka Metropolitan University)

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