国立研究開発法人理化学研究所　仁科加速器科学研究センター
第309回 RIBF核物理セミナー
RIKEN Nishina Center for Accelerator Based Science
The 309th RIBF Nuclear Physics Seminar
Co-organized with Strangeness Nuclear Physics Laboratory

Isospin symmetry breaking in nuclear ground state

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It is known that the nuclear interaction has almost the isospin symmetry, while its breaking has been studied theoretically and experimentally, including at RIBF.
Since the Coulomb interaction mainly contributes to the isospin symmetry breaking of atomic nuclei, both the Coulomb interaction and the isospin symmetry breaking terms of the nuclear interaction should be considered simultaneously and precisely.
In this seminar, I will show our recent fundamental studies on these two contributions to ground-state properties of atomic nuclei, especially, the mass difference of mirror nuclei, the neutron-skin thickness, and the charge radius difference of mirror nuclei. Effects on estimating the density dependence of the symmetry energy (L) are also discussed.
At last, a new method to pin down theoretically the strength of the effective charge symmetry breaking term and an open problem raised from this method are also discussed.

References:
T. Naito, G. Colò, H. Liang, and X. Roca-Maza. Phys. Rev. C 104, 024316 (2021).
T. Naito, G. Colò, H. Liang, X. Roca-Maza, and H. Sagawa. Phys. Rev. C 105, L021304 (2022).
T. Naito, X. Roca-Maza, G. Colò, H. Liang, and H. Sagawa. arXiv:2202.05035 [nucl-th].

Jun 22nd (Wed), 2022　14：00 ～
via Zoom Meeting System

＊ The talk will be given in English language.

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