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Ab initio radii and density distributions for Sn and Xe isotopes

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Nuclei around the tin isotopic line have been a recent center of experimental interest, with a diversity of interesting phenomena from alpha decay to neutron skin as well as neutrinoless double beta decay candidates. In the meantime, the recent progress of nuclear ab initio methods based on chiral interactions now allows for meaningful predictions in such heavy systems. We will present here results on radii and density distributions for several tin and xenon isotopes [1], and compare them to experimental results including the elastic electron scattering at SCRIT in RIKEN [2] and discuss perspectives in terms of neutron skins and the determination of the nuclear matter symmetry energy [3]. This paves the way for ab initio studies of exotic density distributions at the forefront of the present ab initio mass domain, where experimental data is becoming available.

[1] P. Arthuis, C. Barbieri, M. Vorabbi, and P. Finelli, *Phys. Rev. Lett.* 125, 182501 (2020)

[2] K. Tsukada, A. Enokizono, T. Ohnishi, K. Adachi, T. Fujita, M. Hara, M. Hori, T. Hori, S. Ichikawa, K. Kurita, K. Matsuda, T. Suda, T. Tamae, M. Togasaki, M. Wakasugi, M. Watanabe, and K. Yamada, *Phys. Rev. Lett.* 118, 262501 (2017).

[3] T. Aumann, C. A. Bertulani, F. Schindler, and S. Typel, *Phys. Rev. Lett.* 119, 262501 (2017)

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