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Ab initio density distributions in the Sn sector

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Nuclear radii and densities are key quantities that naturally bridge nuclear structure and reactions and open a window towards a detailed understanding of the nuclear interaction within a given theoretical framework. Long restricted to light systems due to model-space convergence limitations as well as interactions deficiencies, recent progress on both accounts now allow for accurate ab initio description of those quantities up to and above the tin isotopic chain.

I will present ab initio radii and density distributions for Sn and Xe isotopes and show how they can be compared with past experimental results such as SCRIT in RIKEN, as well as inform current experimental endeavours, e.g. aimed at constraining the nuclear symmetry energy slope parameter at GSI/R3B. This paves the way for fruitful collaboration between experiment and theory in the context of upcoming programs at SPIRAL2 and beyond.

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