



Objectives

- Construct nuclear interactions that accurately describe atomic nuclei and nuclear matter

Impact

- Enable accurate computations of nuclear density distributions, polarizabilities, charge radii, and neutron skins
- Consistent description of nuclear matter and finite nuclei on a single footing
- Inclusion of Δ isobars (lowest-mass excitations of the nucleon) improves the saturation point of nuclear matter

Accomplishments

- Publication: W. G. Jiang et al., Phys. Rev. C 102, 054301 (2020)
- New potentials employed in several high-impact publications on nuclear charge radii

Charge radii (top) and ground-state energies (bottom) of calcium isotopes with A nucleons computed with new potentials Δ NNLO_{GO}.