

Exploring the sensitivity of nuclear charge radii to structural changes in the Ca region (remote)

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Laser spectroscopy experiments provide a precise measurement of the changes in the nuclear mean-square charge radii and the electromagnetic moments of isotopes. State-of-the-art techniques can routinely measure these properties of the ground state and long-lived isomers which are produced in minute samples at radioactive ion beam facilities. The region of the nuclear chart between the magic Ca ($Z=20$) and Ni ($Z=28$) isotopes is rich in nuclear structure changes and is perfectly placed to investigate the evolution of the nuclear shape and size in both neutron- and proton-rich isotopes, as well as the isospin symmetry in self-conjugate isotopes.

In this talk the nuclear charge radii in the Ca to Ni region will be presented, including the newly measured of $^{48-54}\text{Cr}$ isotopes from the IGISOL laboratory. Recent developments for the laser spectroscopy of proton-rich Co and Fe will also be discussed.

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Session Classification: Session 8: Nuclear charge radii, staggering and shell effects, neutron skin