Nuclear Structure Study of Mirror Nuclei

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The neutron skin of atomic nuclei impacts the structure of neutron- rich nuclei. We present predictions for neutron skins and proton radii for light to medium mass nuclei by employing Covariant Density Functional Theory (CDFT) based on density-dependent meson-exchange interaction. Using our microscopic predictions, we find a linear correlation between the neutron skin and the isospin asymmetry. The calculations are also extended to find a linear relationship between proton and neutron radii of mirror nuclei to quantify the effect of charge symmetry breaking. A correlation between the neutron skin of neutron-rich nuclei and difference between the proton radii of the corresponding mirror pair has also been observed.