

Mirror energy differences and neutron skin

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Isospin symmetry is one of the basic concepts in nuclear physics. One of its consequences is that the level scheme of mirror nuclei, i.e. nuclei with the same number of nucleons but interchanged number of protons and neutrons should be identical. The Coulomb excitation breaks this degeneracy to some extent. It is also known that at the strong interaction level, the symmetry is also broken and manifested in the difference in mass of protons and neutrons and in the nucleon-nucleon scattering phase shifts.

New developments in the study of the mirror energy differences in the sd shell suggest that these observables can give information on the nuclear skin as a function of excitation energy. The calculations are performed in the shell model framework using state-of-the-art charge-dependent nucleon-nucleon potentials.

In the presentation some new data together with the calculations will be shown and discussed.

Summary

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