

Universal aspects of weakly bound two-neutron halo nuclei

The universal properties of the two-neutron halo nuclei at the drip line will be reviewed. The focus will be on Borromean states with halo neutron orbits dominated by the s-wave, which is the case of Lithium-11, Beryllium-14 and Carbon-22. We will also discuss the non-Borromean state of Carbon-20. The halo states are described as a weakly bound three-body system, dominated by the so-called Thomas-Efimov effect. In this case the halo properties are found in a model independent way with only few physical parameters, like scattering lengths and two-neutron separation energy. The presentation will discuss sizes, momentum distributions of the above mentioned nuclei, the universal properties of continuum states at low energies and the comparison with existing experimental data.

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