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Two-neutrons halos and beyond

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Weakly bound halos formed in unstable exotic nuclei at the drip line is by now a well grounded description. In the case of a core plus two-neutrons, for example ${}^6\text{He}$, ${}^{11}\text{Li}$, ${}^{14}\text{Be}$, ${}^{19}\text{B}$, ${}^{22}\text{C}$, which due to the dilute halo allows its understanding in terms of universal properties, quite independent of the nuclear model and dominated by few physical scales, like the large scattering lengths/low-lying resonances and the two-neutron separation energy. The next challenge is neutron halos with more neutrons, which will be qualitatively illustrated by representative cases, like e.g. ${}^{28}\text{O}$, where again few physical scales should be dominant on the properties of nuclei like that.

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