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Exotic light nuclei from ab initio theory

Friday, 8 June 2018 09:00 (18 minutes)

One of the recently developed approaches capable of describing both bound and scattering states in light nuclei simultaneously is the No-Core Shell Model with Continuum (NCSMC). I will present recent NCSMC calculations of weakly bound states and resonances of exotic halo nuclei 6He and 11Be. I will also discuss the 11Be mirror 11N, an unbound 10C+p system, and highlight the role of chiral NN and 3N interactions in the description of the 10C(p,p) scattering measured recently at TRIUMF. Finally, I will discuss our new calculations of the structure of the unbound 9He nucleus as well as our ongoing calculations of the 11C(p,p) scattering and 11C(p,gamma)12N capture.

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