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Ab initio description of continuum effects in A=11 exotic systems with chiral NN+3N forces[1] ANGELO CALCI, PETR NAVRATIL, TRIUMF, ROBERT ROTH, TU Darmstadt, JEREMY DOHET-ERALY, TRIUMF, SOFIA QUAGLIONI, Lawrence Livermore National Laboratory, GUILLAUME HUPIN, Universitee Paris-Sud — Based on the fundamental symmetries of QCD, chiral effective field theory (EFT) provides two- (NN), three- (3N) and many-nucleon interactions in a consistent and systematically improvable scheme. The rapid developments to construct divers families of chiral NN+3N interactions and the conceptual and technical improvements of ab initio many-body approaches pose a great opportunity for nuclear physics. By studying particular interesting phenomena in nuclear structure and reaction observables one can discriminate between different forces and study the predictive power of chiral EFT. The accurate description of the ^{11}Be nucleus, in particular, the ground-state parity inversion and exceptionally strong E1 transition between its two bound states constitute an enormous challenge for the developments of nuclear forces and many-body approaches. We present a sensitivity analysis of structure and reaction observables to different NN+3N interactions in ^{11}Be and n+^{10}Be as well as the mirror p+^{10}C scattering using the ab initio NCSM with continuum (NCSMC).

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