

In-medium similarity renormalization group with resonance and continuum

Tuesday, 9 August 2022 14:40 (40 minutes)

We have developed an ab initio Gamow in-medium similarity renormalization group (IMSRG) method capable of describing resonance and non-resonance continuum properties of weakly-bound and unbound nuclear many-body systems. In this talk, I will discuss how to couple nuclear scattering states and decay channels into the in-medium similarity renormalization (IMSRG) framework by using the complex-energy Berggren basis. This basis treats bound, outgoing Gamow resonant and non-resonant continuum states on an equal footing. Finally, I will present some recent results for nuclei near or beyond dripline, such as limits of atomic nuclei, resonance and halo, calculated by this new ab initio approach with chiral two- and three-nucleon forces.

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