

Recent insights into baryon Interactions with Lattice QCD

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Lattice QCD has become a powerful nonperturbative tool for exploring the low-energy strong interaction directly from the QCD Lagrangian. It now provides quantitative insights into multi-nucleon interactions, nuclear binding, hypernuclear forces, and electroweak matrix elements relevant to neutrino scattering and double beta decay. Despite challenges such as signal-to-noise degradation and computational scaling, recent advances enable increasingly precise ab initio calculations of hadronic and nuclear observables.

In this talk, I will highlight key lattice QCD results on nuclear observables, focusing on baryon-baryon interactions from the NPLQCD collaboration and comparing them with other lattice efforts.

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