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Baryon phase shifts from improved operators

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Lattice QCD has reached a mature stage where precision calculations of single-particle observables may be made to complement experimental efforts as well as predict new quantities not accessible by experiment. However, studies of multi-particle systems, particularly those involving baryons, are just beginning to come of age. New computational methods, particularly the development of improved operators for multi-hadron systems, allow for the extraction of multiple finite volume energy levels with an exponential reduction in computation time. Complementary theoretical tools have been developed to translate these energies into scattering phase shifts, opening a potential path to calculating the properties of baryon resonances.