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One and two nucleon matrix elements from lattice QCD for precision tests of the SM in NP environments

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There are a number of high profile, high impact experiments planned to probe the limits of the Standard Model through precision measurements at low energies in nuclear physics environments. These experiments include searches for: direct dark matter detection through the elastic recoil of large nuclei; CP-violation manifested in permanent electric dipole moments in nucleons and nuclei; neutrinoless double beta-decay of large nuclei indicating lepton number violation. The interpretation of the experimental results will require input from theoretical nuclear physics quantitatively connected to the fundamental theory of strong interactions, QCD. I will describe how lattice QCD and effective field theory can be used to make this connection and conclude with a brief survey of recent results in this vein.

Summary

Primary author: WALKER-LOUD, Andre (LBNL)

Presenter: WALKER-LOUD, Andre (LBNL)

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