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Precision calculations of nucleon charges g_A, g_S and g_T

Wednesday, 25 June 2014 12:50 (20 minutes)

This talk will present an update on the calculation of iso-vector nucleon charges g_A, g_S and g_T by the PNDME collaboration. The calculations are being done using clover valence quarks on 2+1+1 flavor HISQ lattices generated by the MILC collaboration at multiple values of the lattice spacing, light quark masses and lattice volumes. To extrapolate in the lattice volume, lattice spacing and quark mass, we make simultaneous fits to the data in these three variables and discuss the associated systematic uncertainty in the three charges. Lastly, we will examine how well these estimates, combined with precision measurements of neutron decays, can bound novel scalar and tensor interactions at the TeV scale.

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