Abstract Submitted
for the DNP20 Meeting of
The American Physical Society

Magnetic and Axial Two-Nucleon Currents in a Combined Large-N_c and Pionless Effective Field Theory Expansion THOMAS RICHARDSON, MATTHIAS SCHINDLER, Univ of South Carolina — Combining the large-N_c expansion with the pionless effective field theory ($\text{EFT}_{\not\pi}$) expansion provides theoretical constraints on the low energy coefficients that accompany each operator in the effective theory. In $\text{EFT}_{\not\pi}$, magnetic and axial two-nucleon contact terms contribute to a variety of electroweak processes such as the deuteron magnetic moment, radiative neutron capture, and proton-proton fusion. The large-N_c expansion indicates that the isoscalar magnetic coupling is suppressed relative to the isovector coupling, which offers a partial explanation of the suppression found in data. We find a similar result for a general two-nucleon axial current that justifies the omission of one of the terms in processes such as neutrino-deuteron scattering.

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Date submitted: 17 Jun 2020 Electronic form version 1.4