

Abstract Submitted
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Large- N_c constraints on parity-violating low-energy constants in three-derivative pionless effective field theory¹ SON T. NGUYEN, ROX-ANNE SPRINGER, Duke University — A combination of pionless effective field theory and large- N_c expansion has demonstrated great potential for analyzing few-body hadronic parity violation (PV) at low energies. Here we focus on three-derivative nucleon-nucleon interactions that contribute to P - D transitions as well as corrections to S - P transitions. We show that the large- N_c expansion can systematically separate low-energy constants (LECs) into those that occur at leading order in N_c and those that occur at next-to-leading order in N_c . Relationships among the PV LECs emerge at leading order in N_c . Details of their subtraction-point dependent behaviors based on the current understanding of parity-conserving LECs are also presented. Finally, we discuss how our analysis may impact the prioritization of future PV experiments and lattice QCD calculations in this sector.

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