

Abstract Submitted
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Parity violation in two-nucleon systems from pionless effective field theory¹ SON NGUYEN, Duke University — At leading order, there are five independent nucleon-nucleon parity-violating (PV) interactions at low energies, corresponding to the five leading low energy constants (LECs) that mix S -wave and P -wave channels. These have been studied in the framework of pionless effective field theory (EFT). In this talk, we present our analysis of the higher-order contributions that occur at three derivatives. These correspond to P - D transitions as well as corrections to S - P transitions. We show that the renormalization group (RG) behavior of the PV LECs in pionless EFT is driven by the RG scaling of parity-conserving LECs. Under certain assumptions, this constrains the higher order LECs and may reduce the number of experiments needed to understand low energy PV.

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