

Abstract Submitted  
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**Parity- and Time-Reversal-Violation in Nuclear Systems and the Large- $N_C$  Expansion** JARED VANASSE, Stetson University — At low energies ( $E < m_\pi^2/M_N$ ) parity-violating and parity and time-reversal-violating nucleon-nucleon interactions are each characterized by five separate low energy constants. These low energy constants must be determined from experiment or very difficult lattice QCD calculations. Given the challenging nature of these experiments, any framework to discern the relative size of these low energy constants would be of great utility. Such a framework is provided by the large- $N_C$  expansion in QCD. I will discuss recent developments in the understanding of parity-violating nucleon-nucleon interactions both theoretically and experimentally, in light of the new large- $N_C$  analysis, as well as future prospects. In addition I will discuss what large- $N_C$  has to say about parity and time reversal violating nucleon-nucleon interactions.

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