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**Parity violation in few-nucleon systems within a chiral effective field theory framework** MICHELE VIVIANI, INFN-Pisa — We study the effect the nucleon-nucleon parity violation (PV) interaction, induced by the weak interaction between quarks, in few-nucleon systems. First, we discuss the derivation of the nucleon-nucleon PV interaction within a chiral effective field theory framework, in particular its extension to next-to-next-to-leading order (N2LO), recently reported in J. de Vries et al., Eur. Phys. J. A 50, 108 (2014). We report on an alternative derivation of this N2LO PV interaction using our technique based on the time-ordered perturbation theory, accounting also for cancellations between the contributions of irreducible diagrams and the contributions due to non-static corrections from energy denominators of reducible diagrams. Ultraviolet divergences associated with the loop corrections are isolated in dimensional regularization. A detailed analysis of the number of independent low-energy constants (LEC's) entering the potential is carried out. Then, we investigate PV effects induced by this updated potential on several few-nucleon observables, including the $\vec{p}$-$p$ longitudinal asymmetry, the neutron spin rotation in $\vec{n}$-$p$ and $\vec{n}$-$d$ scattering, and the longitudinal asymmetry in the $^3\mathrm{He}(\vec{n},p)^3\mathrm{H}$ charge-exchange reaction.

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