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Large-N_c constraints for Beyond the Standard Model few-nucleon currents in effective field theory

Low energy experiments that search for Beyond the Standard Model (BSM) physics often rely on nuclear targets.
Therefore, it is imperative that we obtain a clear theoretical picture of the nuclear physics involved.
Effective field theory (EFT) provides a model-independent framework to capture the nuclear physics in terms of few-nucleon currents.
However, every operator in an EFT is accompanied by an undetermined low energy coefficient that must be determined from data or a nonperturbative quantum chromodynamics (QCD) calculation such as a lattice calculation.
For many processes, these determinations are not yet possible; thus, other theoretical constraints are necessary in order to guide the interpretation of experimental bounds.
Here, we review recent constraints obtained from the large-N_c limit of QCD, where N_c is the number of colors, for BSM few-nucleon currents relevant for neutrinoless double beta decay and dark matter direct detection.

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