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Finite-cutoff renormalization of the chiral NN potential RUPRECHT MACHLEIDT, University of Idaho, EHAB MARJI, West Kentucky, CHRISTOPHER ZEOLI, University of Idaho — Naively, the "best" method of renormalization is the one where the momentum cutoff is taken to infinity while maintaining stable results. However, it has been shown for the chiral NN potential that this type of renormalization leads to a rather erratic scheme of power counting and does not allow for a systematic order-by-order improvement of the predictions. This should not come as a surprise, since the chiral effective field theory these potentials are based upon is designed for momenta below the chiral-symmetry breaking scale of about 1 GeV. Therefore, in the spirit of an investigation which Lepage conducted in 1997 for a toy model, we have examined the cutoff dependence of the predictions by the chiral NN potential at next-to-leading order (NLO) for phase shifts and NN observables using cutoffs below the hard scale with the goal to identify areas of cutoff independence ("plateaus"). The latest status of our results will be reported at the meeting.

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