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Chiral NN potentials and renormalization[1] RUPRECHT MACHLEIDT, University of Idaho, DAVID ENTEM, University of Salamanca — In recent years, quantitative nucleon-nucleon (NN) potentials based upon chiral perturbation theory (ChPT) have been developed. All these potentials apply what is known as "Weinberg power counting". However, this renormalization scheme has been the subject of varying forms of criticism for more than a decade. Systematic investigations of the issue conducted to date have been restricted to only the leading order (LO) of ChPT. Since quantitative chiral NN potentials are constructed at next-to-next-to-next-to-leading (N3LO), it is necessary to investigate the power counting issue beyond LO, and ultimately at N3LO. We have launched such a program and will report the current status of our findings.

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