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Renormalization in various schemes of nucleon-nucleon chiral EFT.

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Renormalizability of an effective field theory allows one
to perform a systematic expansion of the calculated observable
quantities in terms of some small parameter in accordance with
a certain power counting.
We consider chiral effective field theory in application to the
nucleon-nucleon interaction
at next-to-leading order in the chiral expansion.
The analysis of the renormalizability of this theory is complicated
by the nonperturbative nature of the leading order interaction.
The requirement of the renormalizability imposes nontrivial constraints
on a choice of such interaction.
Two different approaches are studied: the finite- and the infinite-cutoff schemes.
The consequences for the realistic nucleon-nucleon interaction are discussed.

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