

# Hyperon-nucleon interaction in chiral effective field theory

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Recently, a hyperon-nucleon (YN) interaction has been derived up to next-to-leading order in chiral effective field theory by the Jülich-Bonn-Munich group. At that order there are contributions from one- and two-pseudoscalar-meson exchange diagrams and from four-baryon contact terms without and with two derivatives. SU(3) flavor symmetry is imposed for constructing the YN interaction in order to reduce the number of free parameters. In the actual calculation the SU(3) symmetry is broken, however, by the mass differences between the Goldstone bosons (pion, eta, K-meson) and between the baryons. For these masses the known physical values are used.

An excellent description of available Lambda-N and Sigma-N scattering data has been achieved at next-to-leading order. Corresponding results will be reported. The in-medium properties of this YN interaction have been investigated. Specifically, binding energies of the Lambda and Sigma hyperons in nuclear matter have been calculated, based on conventional first-order Brueckner calculation, and will be presented and discussed.

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