

# HYPERON-NUCLEON SCATTERING IN A COVARIANT CHIRAL EFFECTIVE FIELD THEORY APPROACH

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Motivated by the successes of covariant baryon chiral perturbation theory in one-baryon and heavy-light systems, we explore relevance of relativistic effects in hyperon-nucleon scattering with strangeness  $S = -1$  at leading order. In this exploratory work, we use the Kadyshevsky equation, instead of the nonrelativistic Lippmann-Schwinger equation, to iterate the hyperon-nucleon potentials obtained from the heavy-baryon Lagrangian. By fitting the five low-energy constants to the experimental data, we find that the cutoff dependence of the results is mitigated compared with Weinberg's approach. In addition, we employ the covariant chiral Lagrangian to construct hyperon-nucleon potentials and show that the inclusion of relativistic effects can indeed lead to a better description of the experimental data.