

Meson-baryon interactions and $\Lambda(1405)$ in chiral effective field theory

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We investigated the meson-baryon scattering using time-order perturbation theory (TOPT) based on the covariant chiral effective field theory. Renormalized scattering amplitudes are obtained by solving the integral equations with the full off-shell dependence of effective potentials and applying subtractive renormalization. Our formalism has been successfully applied to the pion-nucleon scattering at leading order and extended to the meson-baryon scattering in the $S=-1$ sector. By solving the coupled-channel integral equations, we obtained the two-pole structure of the $\Lambda(1405)$ resonance. Furthermore, we would like to present the preliminary results of the ongoing work at the next-to-leading order on the meson-baryon interactions.

Parallel Session

Hadron Spectroscopy

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