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Pseudoscalar current transition form factors of the delta in baryon chiral perturbation theory

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We present the chiral corrections to the pseudoscalar current transition form factors of the delta in relativistic baryon chiral perturbation theory up to third chiral order using the complex-mass renormalization scheme (CMS) to generate a systematic power counting. We analyze the form factors $\tilde{g}(q^2)$ and $\tilde{h}(q^2)$ which are relevant to address the $\pi\Delta\Delta$ coupling constants at $q^2 = 0$. Knowledge on these form factors are necessary as there is no clear available experimental data for the pseudoscalar current-delta transition form factors which makes the topic still up to date for both experimental and theoretical studies.
\par
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\textbf{Keywords:} Baryon chiral perturbation theory, CMS, delta resonance, form factors.

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