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Crossed channel analysis of quark and gluon generalized parton distributions with helicity flip

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Quark and gluon helicity flip generalized parton distributions (GPDs) are seen to be a convenient tool to address the transversity quark and gluon structure of the nucleon. In order to construct a theoretically consistent parametrization of these hadronic matrix elements, we work out the set of combinations of those GPDs suitable for the $SO(3)$ partial wave (PW) expansion in the cross-channel. This universal result will help to build up a flexible parametrization of these important hadronic non-perturbative quantities. We also discuss the possible phenomenological applications.

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