

Diffractive double-elastic production of the η' , η_c , η_b and χ_c mesons in the $pp \rightarrow ppX$ reaction

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I discuss diffractive double-elastic production of the η' , η_c , η_b and χ_c mesons in the $pp \rightarrow ppX$ reaction within the formalism of unintegrated gluon distribution functions (UGDF). The contribution of $\gamma^*\gamma^* \rightarrow X$ fusion is estimated. The distributions in the Feynman x_F , momentum transverse between initial and final protons (t_1 , t_2) and azimuthal angle difference between outgoing protons (Φ) are calculated. The deviations from the standard azimuthal angle dependences predicted by vector-vector-pseudoscalar or vector-vector-scalar couplings are quantified and discussed. The results are compared with the results of the WA102 collaboration at CERN. Predictions for FAIR@GSI, RHIC, Tevatron and LHC are given. It is found that the normalization, $t_{1/2}$ dependence as well as deviations from the standard Φ -dependences of diffractive double-elastic cross section are extremely sensitive to the choice of UGDF. Implications for UGDF are discussed.

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