Spin effects in diffractive charmonia production

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We consider exclusive double diffractive production of scalar $\chi_c(0^+)$ [1], axial-vector $\chi_c(1^+)$ [2] and tensor $\chi_c(2^+)$ [3] charmonia in proton-(anti)proton collisions at different energies. The corresponding amplitudes for these processes are derived within the k_t-factorisation approach and the corresponding cross section is calculated with different un-integrated gluon distribution functions (UGDFs) known from the literature. We compare exclusive production of all charmonium states $\chi_c(0^+)$, $\chi_c(1^+)$ and $\chi_c(2^+)$ including branching fraction for radiative $J/\Psi + \gamma$ decay channel. Contributions from different spin states of axial-vector and tensor charmonia are quantified. Corresponding experimental consequences are discussed.

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[3] R. S. Pasechnik, A. Szczurek and O. V. Teryaev, Phys. Rev. D **81**, 034024 (2010).

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