

# Exclusive production of $J/\psi$ in proton-(anti)proton collisions

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Protons and antiprotons at collider energies are a source of high energy Weizsäcker–Williams photons. This may open a possibility to study exclusive photoproduction of heavy vector mesons at energies much larger than possible at the HERA accelerator. Here we present a detailed investigation of the exclusive  $J/\psi$  photoproduction in proton-proton (RHIC, LHC) and proton-antiproton (Tevatron) collisions. We calculate several differential distributions in  $t_1, t_2, y, \phi$ , as well as transverse momentum distributions of  $J/\Psi$ 's. We discuss correlations in the azimuthal angle between outgoing protons or proton and antiproton as well as in the  $(t_1, t_2)$  space. Differently from electroproduction experiments, here both colliding beam particles can be a source of photons, and we find large interference terms in azimuthal angle distributions in a broad range of rapidities of the produced meson. We discuss the effect of absorptive corrections on various distributions.

[1] W. Schäfer and A. Szczurek, Phys. Rev. D **76**, 094014 (2007).

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