

Single-diffractive dijet production at high energies within the k_t -factorization approach

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We discuss single-diffractive production of dijets at high energies.

For a first time we propose a k_t -factorization approach to the diffractive processes [2].

The transverse momentum dependent diffractive parton distributions are obtained from standard (collinear) diffractive parton distributions used in the literature. In this calculation the transverse momentum of the pomeron is neglected with respect to transverse momentum of partons entering the hard process.

The differential cross sections for the diffractive dijets production are calculated in the framework of the k_t -factorization approach based on the resolved pomeron model. Both pomeron flux factors as well as parton distributions in the pomeron are taken from the H1 Collaboration analysis of diffractive structure function and diffractive dijets at HERA.

All leading order processes are taken into consideration

in proton-antiproton collisions at the Tevatron and in proton-proton collisions at the LHC. The extra corrections from subleading reggeon exchanges are also explicitly calculated.

The distributions of the single-diffractive dijet cross section in normalized average transverse-momentum and normalized average pseudorapidity are compared with experimental data from the CDF collaboration.

Crucial aspects of possible standard and dedicated measurements within the ATLAS detector are also discussed.

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