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Di-hadron production at LHC: BFKL predictions for cross sections and azimuthal correlations

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A study of the inclusive production of a pair of hadrons (a “di-hadron” system), having high transverse momenta and separated by a large interval of rapidity, is presented. This process has much in common with the widely discussed Mueller-Navelet jet production and can be also used to access the BFKL dynamics at proton colliders. Large contributions enhanced by logarithms of energy can be resummed in perturbation theory within the BFKL formalism with next-to-leading logarithmic accuracy. The experimental study of di-hadron production would provide with an additional clear channel to test the BFKL dynamics. The first theoretical predictions for cross sections and azimuthal angle correlations of the di-hadrons produced with LHC kinematics are presented.

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