



Contribution ID: 286

Type: **not specified**

Inclusive three jet production at the LHC for 7 and 13 TeV collision energies

Tuesday, 12 April 2016 15:10 (15 minutes)

First, we define new observables sensitive to BFKL dynamics in the context of multijet production at the Large Hadron Collider. We propose the study of the inclusive production of three jets well separated in rapidity from each other, with two of them being very forward. We show that the tagging of a third jet in the central region of rapidity allows for a very strong test of the BFKL formalism. We study two projections on azimuthal angles for the differential cross section which allow for the definition of many different observables whose behavior when varying the p_t and rapidity of the central jet is a distinct signal of BFKL dynamics. Then, we present a first full phenomenological study of ratios of correlation functions of products of cosines of azimuthal angle differences among the tagged jets.

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Session Classification: WG5 Small-x and Diffraction

Track Classification: Small-x, Diffraction and Vector Mesons