

Interplay between multiple parton interactions and color reconnection and their effects on forward-backward multiplicity correlations in proton-proton collisions

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we present a study of forward backward multiplicity correlations in proton-proton collisions using PYTHIA event generator, at LHC energies. Detailed analysis is presented splitting data samples into soft and hard QCD processes, as well as, their comparisons of the correlation computed for short and long range pseudorapidity regions. Each region is analyzed taking into account effects on the color reconnection and independently multiple parton interactions. We show that a combination of those effects is required to explain last measurements

on proton-proton data, furthermore, the extraction of the strength of color reconnection and taking events with ranges of the number of multiple partons interactions brings us also the possibility to predict the results to energies not reached in the experiment.

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