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Forward backward multiplicity correlations: a tool to study general properties of the proton-proton events.

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Content

Forward-backward multiplicity correlations have been used to study hadron production mechanisms in electron-positron, proton-proton and more recently in lead-lead collisions. The experimental results and its comparison to different models reveal an incomplete agreement. In this work we present and study of forward backward multiplicity correlations in proton-proton collisions using the PYTHIA event generator at LHC energies. A detailed analysis is presented for the cases of minimum bias and jetty-like events, incorporating models in the final state interaction like color reconnection in the production mechanism, and multiple parton interactions in the correlations. Our results and its comparison to available experimental data, suggest that this kind of correlations are great tools to extract global properties of the events and give the possibility to disentangle phenomena in hard and soft QCD processes.

Session

Collectivity in high energy collisions

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