

Correlation between heavy flavour production and multiplicity in pp collisions at high energy in the multi-pomeron exchange model

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The multiplicity dependence of heavy flavour production in pp-collisions at LHC energies is studied in the framework of the multi-pomeron exchange model [1-3].

The model is based on the introducing the string collectivity effects in pp collisions, which modifies the bulk multiplicity and transverse momenta, leading to non-trivial p_T - n correlation. The string collectivity strength parameter is fixed by experimental data on multiplicity and transverse momentum correlation in a wide energy range (from ISR to LHC). The particles discrimination is implemented according to Schwinger mechanism [4], allowing to qualitatively describe the strangeness production and its correlation with multiplicity [5].

For the heavy flavour production, we assumed that its yield is proportional to the number of initial pomeron exchanges, whereas the total charged particle multiplicity is influenced by the string collectivity. We demonstrate, that the faster-than-linear growth of the open and hidden charm production, observed in experiment [6], can be related to the reduction of the total multiplicity due to string overlapping and interaction. The extension of the approach for p-A collisions is also discussed.

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List of tracks

Heavy-flavour (open and hidden)

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