

Extended multipomeron exchange model for pp, pA and AA collisions

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A new generalization of the multipomeron exchange model [1-7] is proposed that provides a reasonable description of processes of pp, pA, and AA collisions. The main feature of this model is that the effect of string collectivity is accounted for by a given parameter associated with a change in string tension due to the fusion process. In a new approach, special attention is paid to the production in AA collisions of the hadrons containing strange quarks, which is generally considered as a signal of the formation of quark-gluon plasma. Besides the higher yield of strangeness, increasing string tension results in a specific class of events with a large multiplicity and facilitates in the string fragmentation process creation of particles containing c-quark. This mechanism can be considered as an additional source of charm production [5].

The parameters of the model are fixed according to the dependence of the transverse momentum on the multiplicity in pp and p \bar{p} collisions in a wide energy range (from ISR to LHC). In addition, the yields of multistrange and charmed particles are obtained as a function of the charged multiplicity for Pb-Pb collisions at LHC energy, and the predictions of the model are compared with experimental data.

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