

Strangeness in Quark Matter 2019



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Multipomeron model for strange particle production in heavy-ion collisions

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Multipomeron model for strange particle production in heavy-ion collisions

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The generalized multi-pomeron exchange model [1] - [5] is proposed for the production in high energy heavy-ion collisions of hadrons containing heavy quarks. The main feature of this approach is the effective consideration of collectivity on the base of quark-gluon string fusion concept that provides the formation of new types of particle emitting sources –strings with higher tension. In this model, an increase in the string tension, in a certain class of events of in pp and $A - A$ collisions characterized by high multiplicity, allows, in the process of string fragmentation, the creation of particles containing strange or charm quarks.

The model parameters are fixed from the previous analysis of data on the multiplicity dependence of the mean transverse momentum in pp collisions over a wide energy range (from ISR to LHC). The yields of strange, multi-strange and charm particles as a function of charged multiplicity are obtained for pp and $Pb - Pb$ collisions at the LHC energy and compared with the experimental data.

[1] N. Armesto, D. Derkach, and G. Feofilov // Phys. Atom. Nucl. 2008, V. 71, P. 2087.

[2] E. Bodnia, D. Derkach, G. Feofilov, V. Kovalenko, A. Puchkov // PoS (QFTHEP 2013) 060 (2013), arXiv:1310.1627.

[3] E. O. Bodnia, V. N. Kovalenko, A. M. Puchkov, G. A. Feofilov // AIP Conf. Proc. 2014, V. 1606, P. 273-282, arXiv:1401.7534.

[4] Feofilov G., Kovalenko V., Puchkov A. // arXiv:1710.08895. 2017.

[5] Feofilov G., Kovalenko V., Puchkov A. // EPJ Web of Conferences. 2018. Vol. 171, P. 18003, arXiv:1711.00842.

Collaboration name

Track

Strangeness and Light Flavour

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