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Azimuthal anisotropy of long-range correlations at LHC energy in Monte Carlo model with string fusion

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Long-range multiplicity correlations in intervals separated in pseudorapidity and azimuth are studied in the framework of string fusion approach.

We applied a Monte Carlo model [1,2], in which the string configurations in the transverse plane and rapidity are simulating event-by-event.

We assumed that the azimuthal anisotropy of particle production is caused by parton energy loss travelling through the media formed by clusters of fused strings [3-5]:

$$\Delta p_t / \Delta x = -\alpha (p_t \sqrt{\eta})^{2/3},$$

where η is a string density.

An additional source of the anisotropy is related to the strong resonances decays.

This approach provides non-zero values of elliptic and higher flows in Pb-Pb and p-Pb collisions at LHC energies. The obtained results are compared with experimental data.

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[2] V. Kovalenko, V. Vechernin, PoS (Baldin ISHEPP XXI) 077, arXiv:1212.2590 [nucl-th], 2012.

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[4] M. A. Braun, C. Pajares, V. V. Vechernin, Nucl. Phys. A 906, 14 (2013).

[5] M. A. Braun, C. Pajares, V. V. Vechernin, Eur. Phys. J A 51, 44 (2015).

Summary

The results on the theoretical modeling of azimuthal anisotropy of long-range correlations at LHC energies in string fusion approach will be presented.

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