

## Centrality dependencies of charged pion production in $^{12}\text{C}+^{12}\text{C}$ collisions at 4.2 GeV/c per nucleon

*Monday, 24 October 2022 15:00 (15 minutes)*

The dependencies of the average kinematical characteristics of the negative and positive pions, produced in  $^{12}\text{C}+^{12}\text{C}$  collisions at 4.2 A GeV/c, on the collision centrality have been investigated. The number of the produced negative pions per participant nucleon of a projectile  $^{12}\text{C}$  nucleus, the average inelasticity coefficients of  $\pi^-$ -mesons, and the shapes of their full and transverse momentum distributions do not depend on  $^{12}\text{C}+^{12}\text{C}$  collision centrality. The number of the produced positive pions per participant nucleon of a projectile carbon-12 nucleus, the average values of the inelasticity coefficient, full, longitudinal and transverse momenta of  $\pi^+$  mesons have decreased with increasing the collision centrality. The observed dependencies of the characteristics of the  $\pi^-$  and  $\pi^+$  mesons on the collision centrality have been interpreted as due to the used centrality selection criterion, based on the number of participant protons, and conservation of the baryon number and electrical charge in a collision event. The obtained results can be useful for analysis of the high energy heavy ion collisions in order to subtract the effects purely due to the collision centrality selection method, based on the number of participant protons, and conservation of the baryon number and electrical charge in a collision event.

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**Session Classification:** High Energy Physics

**Track Classification:** High Energy Physics