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Type: Poster

Femtoscopy with identified charged pions in $p+\text{Pb}$ collisions at $\sqrt{s_{NN}} = 5.02$ TeV with the ATLAS detector

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Hanbury Brown and Twiss (HBT) radii are measured as a function of centrality, transverse momentum, rapidity, and azimuthal angle with respect to the second-order event plane in central $p+\text{Pb}$ collisions at $\sqrt{s_{NN}} = 5.02$ TeV with the ATLAS detector at the LHC. A total integrated luminosity of 28 nb^{-1} is sampled. The radii are presented as a function of the local density dN/dy^* and the rapidity-dependence is shown to depend directly on the density. The radii and their relative azimuthal modulation are presented as a function of the magnitude of the flow vector $|q_2|$ measured in the ATLAS calorimeters in the lead-going direction, with pseudorapidity $\eta < -2.5$. Modulations of the transverse HBT radii are observed with the same orientation as in ion-ion collisions, in which they are attributed to hydrodynamic evolution from an elliptic initial geometry. This modulation is consistent with a hydrodynamic evolution of a short-lived medium.

Content type

Experiment

Collaboration

ATLAS

Centralised submission by Collaboration

Presenter name already specified

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