

11th International Conference on Hard and Electromagnetic Probes of High-Energy Nuclear Collisions



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Typ: Talk

ATLAS measurement of the two-particle correlation sensitivity to jets in pp collisions

Dienstag, 28. März 2023 10:00 (20 Minuten)

Measurements of two-particle correlations in pp collisions show the presence of long-range correlations along $\Delta\eta$ that are strikingly similar to those seen in heavy-ion collisions. The similarity between the pp and heavy-ion measurements raises the possibility that a tiny droplet of the QGP is produced even in pp collisions. However, models that attribute the correlation in pp collisions to semi-hard processes, can qualitatively reproduce the measurements. Performing the pp measurements while distinguishing between the particles from semi-hard processes, such as low- p_T jets, and the particles produced from soft interactions, can differentiate between these two origins of the pp ridge. This talk presents measurements of two-particle correlations in pp collisions at $\sqrt{s} = 13$ TeV with two different particle-pair selections. In the first case, tracks associated with jets are excluded from the correlation analysis. This is shown to affect the magnitude of long-range correlations by only a few percent. New measurements of two-particle correlations, measured between tracks that are constituents of jets and tracks from the underlying event are also presented. These measurements can further elucidate the origin of the pp ridge.

Experiment/Theory

ATLAS

Affiliation

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Sitzung Einordnung: Parallel: High-Momentum Hadrons & Correlations

Track Klassifizierung: High momentum hadrons and correlations