

Abstract Submitted
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Measurement of the sensitivity of two particle correlations in pp collisions at 13 TeV to the presence of jets with the ATLAS detector¹
PENGQI YIN, Columbia University, ATLAS COLLABORATION — 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. In heavy-ion collisions, the long-range correlations are known to arise from the collective dynamics of the produced quark-gluon plasma (QGP). 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. Thus performing the pp measurements with an active rejection of particles associated with semi-hard processes, such as low- p_T jets, can further elucidate the origin of the long-range correlations. This talk presents measurements of two-particle correlations in pp collisions at $\sqrt{s} = 13$ TeV when removing tracks associated with jets from the event. It is demonstrated that such removal of particles in the vicinity of jets affects the magnitude of long-range correlations only by a few percent.

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