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Measurement of the underlying event in the presence of high pileup at ATLAS

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In meaurements of bulk charged-particle production, the kinematic characteristics of produced hadrons and correlation between them in the presence of the hard scattering signatures is a very interesting topic for understanding the physics processes relevant in small collision systems. Extensive data samples have been accumulated by the LHC experiments experiments to conduct these studies in *pp* collisions. These measurements, however, are complicated by the presence of many pileup vertices in each bunch crossing which contaminate direct studies of the characteristics of the underlying event. This problem is addressed in the ATLAS detector using an event mixing technique which allows to correct for the presence of the pileup on a statistical basis. The implementation, result and limitations of the techniques are presented in this poster. The results use $\sqrt{s} = 8$ and 13 TeV data samples with a combined integrated luminosity exceeding 50 fb^{-1}.

Content type

Experiment

Collaboration

ATLAS

Centralised submission by Collaboration

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