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Centrality and pseudorapidity dependence of transverse energy flow in pPb collisions at 5.02 TeV with CMS

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The CMS Collaboration has measured the pseudorapidity and centrality dependence $dET/d\eta$ for 5.02 TeV pPb collisions over 10 units of pseudo-rapidity. This was carried out in a systematic way by measuring centrality using different experimental definitions. As the centrality increases the mean pseudorapidity moves backwards and the $1/NdE_T/d\eta$ distribution widens. For the most central pPb collisions the maximum $1/NdE_T/d\eta$ reaches 25 GeV. The rate of change of dEt/deta with eta and centrality is characterized by the ratio $S_{pc}(eta, centrality) = E_T(\eta, centrality)/E_T(\eta, centrality = 0 - 10\%)$. This ratio depends very strongly upon the definition of centrality and shows strong auto-correlations if a particular eta region is used to define centrality. For the most central events there is a large overlap in the event classes selected by different centrality measurements, but for peripheral events different centrality measures select quite different. This is quite different to the situation in PbPb and suggests that event-by-event fluctuations in the pseudorapidity distribution of particles are much stronger in pPb than in PbPb.

On behalf of collaboration:

CMS

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