

Abstract Submitted
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Exploring Collective Behavior in the Quark-Gluon Plasma

MONIKA SHARMA, Vanderbilt University, CMS COLLABORATION COLLABORATION — Measurements of heavy-ion collisions carried out at the Relativistic Heavy Ion Collider (RHIC) indicate that a new state of matter, called the quark-gluon plasma, with an energy density similar to that achieved in the early universe shortly after the Big-Bang is created. This medium exhibits collective behavior characteristic of a strongly coupled and nearly perfect fluid. Much of the same liquid is created at the Large Hadron Collider (LHC). LHC explores the evolution of the quark-gluon plasma state over more than an order of magnitude in collision energy. Recent results of charged-hadron correlations in high multiplicity pPb collisions reveal signals suggestive of collective flow, which are very similar to those observed in heavy-ion collisions. In this context, measurements of two- and four-particle angular correlations for charged particles emitted in pPb collisions will be presented over a wide range of pseudorapidity and full azimuth from CMS. These results will be compared to 2.76 TeV semi-peripheral PbPb collision data, covering a similar range of particle multiplicity.

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