

Latest results on high multiplicity pp and p-Pb collisions with CMS

Wednesday 26 April 2023 13:50 (25 minutes)

At sufficiently high temperatures and pressure, Quantum Chromodynamics predicts that ordinary nuclear matter undergoes a phase transition. This new state of matter is called Quark Gluon Plasma (QGP) and is characterized by deconfined quarks and gluons. In this context, high energy heavy ion collisions have been historically used to recreate the QGP in the laboratory. In recent years, at the Large Hadron Collider, similar heavy ion -like features have been observed in events with high final-state multiplicity in proton-proton (pp) and proton-lead (p-Pb) collisions. Raising the question if a QGP is created in these small systems. While models based on a hydrodynamic approach can correctly describe these observed features, other approaches based on microscopic effects (string percolation, color reconnection, etc) can also reproduce the experimental data. In this talk I will present and discuss the latest results on high multiplicity pp and p-Pb collisions with the CMS experiment.

Theory / experiment

Experiment

Group or collaboration name

CMS

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Session Classification: Parallel Session B

Track Classification: QGP in small systems