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Second-order Off-diagonal cumulants of net-proton, net-kaon and net-charge multiplicity distributions at RHIC

Summary

We present the measurements of off-diagonal cumulants of net-proton, net-kaon, and net-charge multiplicity distributions in Au+Au collisions at $\sqrt{s_{NN}} = 7.7, 11.5, 14.5, 19.6, 27, 39, 62.4$ and 200 GeV [1]. We study beam energy, centrality and pseudorapidity window dependence of these cumulants. We compare our results with the hadron resonance gas (HRG) and UrQMD calculations. The energy dependence of off-diagonal over diagonal cumulant ratios cannot be fully described by different model calculations. These measurements provide important insights on the correlations between different conserved charges from the QGP and hadronic phase, their conservation during hadronization and their dependence with temperature and baryon chemical potential.

References

[1] J. Adam et al., STAR Collaboration, arXiv:1903.05370 [nucl-ex]. 2019.

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