



Contribution ID: 60

Type: **not specified**

Deconfining Phase Boundary of Rapidly Rotating Hot and Dense Matter and Analysis of Moment of Inertia

Saturday, 6 November 2021 13:30 (17 minutes)

The effect of rotation changes the critical temperature in the phase diagram of hot and dense hadronic matter explored in heavy-ion collision experiments. The recent lattice-QCD calculation suggests that the rotation effect pushes up the critical temperature, and there has been some controversy over the interpretation of this result. In this talk, we use a parameter-free approach, which is the hadron resonance gas model, to address this issue. We found that the critical temperature should be lowered with increasing rotation. We also establish a method to quantitatively evaluate the radial dependence of pressure and the moment of inertia of hadronic matter. The talk will be based on PLB 816, 136184 (2021) [arXiv:2101.09173].

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Session Classification: Contributed Session 1

Track Classification: Track group 1: Theory