

Rotation effect on the deconfinement phase transition in holographic QCD

Friday, 28 November 2025 16:10 (20 minutes)

The impact of rotation on the deconfinement phase transition under the Einstein-Maxwell system of the soft and the hard wall models in holographic quantum chromodynamics is studied in this paper. The metric by cylindrical coordinates with rotation is introduced into the system to calculate the Hawking temperature. The first holographic study on the influence of the radius of a homogeneous rotating system on the phase diagram is proposed. It is found that the phase transition temperature hardly changes with the rotation angular velocity for a small rotation radius. Only with a larger rotation radius can the change in rotational angular velocity significantly alter the phase transition temperature. The phase transition temperature decreases rapidly with the increase of rotation angular velocity as the rotation radius increases.

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Session Classification: Friday Afternoon Second Session