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QCD equation of state at high temperatures

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The equation of state (EoS) in $2 + 1$ flavor QCD has recently been established in the continuum limit at the physical quark masses in ab initio lattice QCD calculations. The HotQCD collaboration result provides the EoS in the temperature range from 130 to 400 MeV. We extend the HotQCD equation of state to higher temperatures. We utilize the Highly Improved Staggered Quarks (HISQ) action. We perform computations at the pion mass of about 300 MeV since the effects of heavier than physical light quark masses are negligible above 400 MeV. To control the cutoff effects and approach to the continuum limit, computations are done on the lattices with temporal extent $N_\tau = 4, 6, 8, 10$ and 12 . We provide a continuum estimate up to temperatures of 2 GeV.

Content type

Theory

Collaboration

Centralised submission by Collaboration

Presenter name already specified

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