Contribution ID: **93**   Type: **Poster**

Towards the QCD equation of state at the physical point using Wilson fermion

Wednesday, 15 July 2015 18:30 (2h 30m)

We study the $N_f = 2 + 1$ QCD at nonzero temperatures using nonperbatively improved Wilson quarks of the physical masses by the fixed scale approach. We perform physical point simulations at finite temperatures with the coupling parameters which were adopted by the PACS-CS collaboration in their studies using the reweighting technique. Zero temperature values are obtained on the PACS-CS configurations which are open to the public on the ILDG. Finite temperature configurations are generated with the RHMC algorithm. The lattice sizes are $32^3 x N_t$, that $N_t = 14, 13, \cdots, 4$ correspond to $T \sim 140 - 500$ MeV. We present some basic observables at these temperatures and the status of our calculation of the equation of state.

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Session Classification: Poster Session

Track Classification: Nonzero Temperature and Density