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Finite temperature QCD phase transition with 3 flavors of Mobius domain wall fermions

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We present an update on the study of the finite temperature QCD phase transition at zero baryon chemical potential with 3 degenerate flavors of Mobius domain wall fermions. The simulation is performed on lattice extent $N_t = 12$ with lattice spacing $a = 0.1361(20)$ fm, corresponding to temperature around 121(2) MeV. We investigate a range of quark masses and two different volumes with aspect ratios $N_s/N_t = 2, 3$. By analying the renormalzied chiral condensate, susceptibility and binder cumulant, we found the rapid transition at $m_q^{\overline{\mathrm{MS}}}(2\,\mathrm{GeV}) \simeq 3 - 4\,\mathrm{MeV}$ for T=121(2) MeV is in the broad crossover transition region. Besides that, we will discuss the residual chiral symmetry breaking effect on chiral condensate and chiral susceptibilities between $L_s = 16$ and 32.

Author: ZHANG, Yu

Co-authors: YASUMICHI, Aoki; HASHIMOTO, Shoji; KANAMORI, Issaku; KANEKO, Takashi; NAKAMURA, Yoshifumi

Presenter: ZHANG, Yu