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Thermodynamics with Möbius domain wall fermions near physical point (I)

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Investigation of QCD thermodynamics for $N_f = 2+1$ along the lines of constant physics with Möbius domain wall fermions is underway. At our coarsest lattice $N_t = 12$, reweighting to overlap fermions is not successful. To use domain wall fermions with the residual mass larger than average physical ud quarks, careful treatments of the residual chiral symmetry breaking are necessary. One of the examples is the chiral condensate where a UV power divergence associated with the residual chiral symmetry breaking emerges with a coefficient not known a priori. In this talk we present first the setup of the computations and then discuss methodologies to overcome potential problems towards the continuum limit in this setup.

Primary author: AOKI, Yasumichi (RIKEN)

Co-authors: AOKI, Sinya (Yukawa Institute for Theoretical Physics, Kyoto University); FUKAYA, Hidenori; HASHIMOTO, Shoji (KEK); KANAMORI, Issaku (RIKEN Center for Computational Science); KANEKO, Takashi (KEK); NAKAMURA, Yoshifumi (RIKEN); ZHANG, Yu (RIKEN)

Presenter: AOKI, Yasumichi (RIKEN)

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