



Contribution ID: 171

Type: Talk

## Study of symmetry of $N_f = 2$ QCD near the critical temperature using Mobius Domain Wall Fermions

*Thursday 1 August 2024 10:00 (20 minutes)*

We report on the ongoing study of symmetry of  $N_f = 2$  QCD around the critical temperature. Our simulations of  $N_f = 2$  QCD employ the Mobius domain-wall fermion action with residual mass  $\sim 1\text{MeV}$  or less, maintaining a good chiral symmetry. Using the screening masses from the two point spatial correlators we compare the mass difference between channels connected through symmetry transformation. Our analysis focuses on restoration of the  $SU(2)_L \times SU(2)_R$  as well as anomalously broken axial  $U(1)_A$ . We also present additional study of a potential  $SU(2)_{CS}$  symmetry which may emerge at very high temperatures.

**Primary author:** WARD, David (Osaka University)

**Co-authors:** FUKAYA, Hidenori (Osaka University); KANAMORI, Issaku (Riken - R-CCS); GOSWAMI, Jishnu (Riken - R-CCS); HASHIMOTO, Shoji (KEK - Sokendai); AOKI, Sinya (Kyoto University - YITP); KANEKO, Takashi (KEK); AOKI, Yasumichi (Riken - R-CCS); NAKAMURA, Yoshifumi (Riken - R-CCS); ZHANG, Yu (Bielefeld University)

**Presenter:** WARD, David (Osaka University)

**Session Classification:** Tests of fundamental symmetries

**Track Classification:** Tests of Fundamental Symmetries