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

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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 $\sim$ 1MeV 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.

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