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QCD thermodynamics on the physical point with 2+1 flavor Möbius domain wall fermions

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We report on the investigation of the thermodynamics of 2+1 flavor QCD along the lines of constant physics (LCP) tuned on and near the physical point with Möbius domain wall fermions. The study is aiming to explore the temperature range covering (pseudo-) criticality for two lattice spacings with $N_t = 12$ and 16. In our simulations the lattice spacing covers $1.4 > a > 0.6$ fm, where the residual chiral symmetry breaking changes two-orders of magnitude: $3m_{ud}^{phys} > m_{res} > 0.03m_{ud}^{phys}$ compared with the physical average ud quark mass. We discuss how one can control the effect of m_{res} . It is crucial for the chiral condensate, which is used for the demonstration.

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