Finite temperature phase transition of two-flavor QCD with an improved Wilson quark action

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Abstract: We study the phase structure of QCD at finite temperature with two flavors of dynamical quarks on a lattice with a size $N_s^3 \times N_t = 16^3 \times 4$, using a renormalization group improved gauge action and a clover improved Wilson quark action. The simulations are made along the lines of constant m_π/m_ρ. We investigate basic thermodynamic quantities around the transition temperature, and also discuss several characteristic properties in the high temperature phase.