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Lattice calculation of the Polyakov loop and Polyakov loop correlators

Tuesday, 30 August 2016 15:00 (30 minutes)

I discuss calculations of the Polyakov loop and of Polyakov loop correlators using lattice gauge theory.
I briefly review recent calculations (since Conf. 2014) of the Polyakov loop and static quark correlators.
I cover in detail results in QCD with 2+1 flavors and almost physical quark masses using the highly improved staggered quark action (HISQ).
I examine the short- and long-distance regimes of the correlators and discuss the color-screening in the thermal medium.
I elucidate how the Polyakov loop and related observables behave in the crossover region and how these observables probe the deconfinement aspects of the crossover.
I study the onset of weak-coupling behavior at high temperatures and short distances.

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