



Contribution ID: 204

Type: **not specified**

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.

Summary

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Primary author: Dr WEBER, Johannes Heinrich (Munich University of Technology (TUM))

Co-authors: BAZAVOV, Alexei (Michigan State University); VAIRO, Antonio; BRAMBILLA, Nora; PETRECZKY, Peter (BNL)

Presenter: Dr WEBER, Johannes Heinrich (Munich University of Technology (TUM))

Session Classification: Section D

Track Classification: Section D: Deconfinement