

Polyakov loop fluctuations in the presence of external fields

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One of important goals of high energy physics is to understand the deconfinement - liberation of quarks from hadrons under extreme temperatures and densities. For systems with small net quark number density many insights are provided by first-principle lattice QCD calculations. Especially important are results on Polyakov loop which plays the role of an order parameter of deconfinement in the limit of infinitely heavy quarks and serves as an approximate order parameter in systems with dynamical quarks. In this talk I will focus on ratios of Polyakov loop susceptibilities and argue why these quantities may be considered as excellent probes of deconfinement. I will also discuss an effective model which captures trends in recent lattice QCD data on these ratios.

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