ID de Contribution: **8** Type: **Non spécifié**

Signatures of the Yang-Mills deconfinement transition from the gluon two-point correlator

lundi 5 décembre 2022 10:45 (45 minutes)

We evaluate the longitudinal or (chromo-)electric Yang-Mills gluon propagator in the recently proposed center-symmetric Landau gauge at finite temperature [1]. To model the effect of the Gribov copies in the infrared, we use the Curci-Ferrari model which, in turn, allows us to rely on perturbative calculations. At one-loop order in the SU(2) case, the so-obtained longitudinal gluon propagator provides a clear signature for Z2 center-symmetry breaking with a singular behavior, characteristic of a continuous phase transition. This is in sharp contrast with what is found within the standard Landau gauge. We also identify various signatures for Z3 center-symmetry breaking in the SU(3) case in the form of genuine order parameters. Among those, we find that the gluon propagator, although degenerate along the diagonal color directions in the confining phase, becomes non-degenerate in the deconfined phase. Our results open new ways of identifying the transition from correlation functions both within continuum approaches and on the lattice.

Auteurs principaux: VAN EGMOND, Duifje (CPHT Ecole Polytechnique); Dr REINOSA, Urko (CPHT, Ecole Polytechnique)

Orateur: VAN EGMOND, Duifje (CPHT Ecole Polytechnique)