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Yang-Mills theory with a nonvanishing background field at finite temperature via the fRG approach

The Yang-Mills theory with background field has been studied at finite temperature with the functional renormalization group approach. The flow equations for correlation functions with a nonvanishing temporal gluon background field have been solved with the Landau-DeWitt gauge, and the magnetic, electric gluon propagators, ghost propagator at different eigenvectors have been obtained at finite temperature. We also integrate-out the flow of Polyakov loop potential, and the relevant confinement-deconfinement phase transition has been investigated. The scaling and decoupling solutions with the background field have also been discussed.

Topics

Other related physics

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