

Abstract Submitted
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A Numerical Approach to Coulomb Gauge QCD HRAYR MATEVOSYAN, Nuclear Theory Center, Indiana University, ADAM SZCZEPANIAK, Nuclear Theory Center and Department of Physics, Indiana University, PATRICK BOWMAN, Centre of Theoretical Chemistry and Physics, Institute of Fundamental Sciences, Massey University (Auckland) — We calculate the ghost two-point function in Coulomb gauge QCD with a simple model vacuum gluon wavefunction using Monte-Carlo integration. This approach extends the previous analytic studies of the ghost propagator in this ansatz, where a ladder-rainbow expansion was unavoidable for calculating the path integral over gluon field configurations. This approach allows us to study the possible critical behavior of the coupling constant, as well as the Coulomb potential derived from the ghost dressing function.

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