Correlation lengths of nonperturbative stochastic Yang-Mills fields

The correlation lengths of nonperturbative-nonconfining and confining stochastic background Yang-Mills fields are obtained by means of a direct analytic path-integral evaluation of the Green functions of the so-called one- and two-gluon gluelumps. Numerically, these lengths turn out to be in a good agreement with those known from the earlier, Hamiltonian, treatment of such Green functions. It is also demonstrated that the correlation function of nonperturbative-nonconfining fields decreases with the deviation of the path in this correlation function from the straight-line one.

Summary

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