

Lattice QCD propagators, Padé Approximants and Analytic structure

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An analysis of the lattice Landau gauge gluon and ghost propagators for pure Yang-Mills is performed using Padé approximants to compute their analytical structure. The gluon propagator is described by a pair of complex conjugate poles and a branch cut along the negative side of the Euclidean momenta. The ghost propagator reveals a simple pole at zero momenta and the method identifies a branch cut that does not start at the origin. We discuss the implications of our finds and compare them to the published literature.

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