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Field-strength correlators for QCD in a magnetic background (15' + 5')

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We consider the properties of the gauge-invariant two-point correlation functions of the gauge-field strengths for QCD in the presence of a magnetic background field at zero temperature. We discuss the general structure of the correlators in this case and provide the results of an exploratory lattice study for $N_f = 2$ QCD discretized with unimproved staggered fermions. Our analysis provides evidence for the emergence of anisotropies in the non-perturbative part of the correlators and for an increase of the gluon condensate as a function of the external magnetic field.

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