

$\mathcal{N} = 1$ Supersymmetric $SU(3)$ Gauge Theory - Pure Gauge sector with a twist

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Supersymmetric gauge theories are a popular building block of theories beyond the standard model. We investigate the pure gauge sector of Super-QCD focusing on the bound states, i.e. mesonic gluinoballs, gluino-glueballs and pure glueballs. To improve chiral symmetry as well as supersymmetry at finite lattice spacing, we introduce a deformed Super-Yang-Mills lattice action. It contains a twist term, similar to the twisted mass formulation of lattice QCD. We furthermore explore if the multigrid method (DDalphaAMG solver) applied to the gluinos (adjoint Majorana fermions) achieves similar improvements as one finds for QCD.

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