Phenomenology 2020 Symposium



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Type: Parallel Talk

Mixed gluinos and sgluons from a new SU(3) x SU(3) gauge group

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I study supersymmetric models in which the QCD gauge group is the remnant diagonal subgroup from the spontaneous breaking of an $SU(3) \times SU(3)$ gauge group at a multi-TeV scale. In renormalizable models with soft supersymmetry breaking, the scalar potential is shown to have global minima with the required gauge symmetry breaking pattern. In addition to a massive color octet vector boson, this framework predicts 3 color octet spin-0 sgluons, and 4 color octet gluinos with both Dirac and Majorana mass terms. One of the gluino mass eigenstates typically has a coupling to quark-squark pairs that is at least as large as the prediction of minimal supersymmetry, but it need not be the lightest one.

Summary

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