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Type: **Invited Talk**

Natural Supersymmetric Twin Higgs

Wednesday, November 28, 2018 11:50 AM (35 minutes)

Twin Higgs (TH) models explain the lack of discovery of new colored particles responsible for natural electroweak symmetry breaking. A new type of supersymmetric Twin Higgs model is presented in which the TH mechanism is introduced by an extra gauge symmetry. This class of models feature natural electroweak symmetry breaking for squarks and gluino heavier than 2 TeV. The new gauge interaction can be perturbative up to the energy scale of gravity (in contrast to all known UV completions of TH models) with interesting implications for flavor phenomenology including the top quark decay into the Higgs and the up quark which may be discovered at the LHC. The talk will be primarily based on arXiv:1703.02122, arXiv:1707.09071 and arXiv:1711.11040.

Content of the contribution

Theory

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