

Light Stops, Heavy Higgs, and Heavy Gluinos in Supersymmetric Standard Models with Extra Matters

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We have explored the possibilities of scenarios with heavy gluinos and light stops in supersymmetric (SUSY) standard models with extra vector-like multiplets. If we assume the hierarchical structure for soft masses of the minimal supersymmetric standard model (MSSM) scalar fields and extra scalars, the light stop and the observed Higgs boson can be realized. While the stau is the lightest SUSY particle (LSP) in broad parameter space, we have found that the neutralino LSP is realized in the case that the non-zero soft parameters for the MSSM Higgs doublets or the non-universal gaugino masses are assumed.

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