

Low scale SUSY breaking and its LHC signatures

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Scenarios in which the supersymmetry breaking scale is not far above the soft parameters of the Minimal Supersymmetric Standard Model (MSSM) have two main consequences for model building. First, the particle spectrum is extended by an almost massless gravitino and possibly a sgoldstino scalar. Second, the MSSM interactions receive significant corrections from higher dimensional effective operators involving the goldstino supermultiplet and MSSM superfields. We present the deformation of MSSM in the case of low supersymmetry breaking scale and its consequences on LHC phenomenology. We focus on deviations of the Standard Model Higgs couplings to gauge bosons and fermions as well as on LHC constraints on the supersymmetry breaking scale.

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