

Searches for NMSSM Signatures with Low Missing Transverse Energy at the LHC

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We examine scenarios in the Next to Minimal Supersymmetric Standard Model where pair-produced squarks and gluinos decay via two cascades, each ending in a stable neutralino LSP and a standard model Higgs with the mass gaps in the decay such that the Missing Transverse Energy is very small. Performing two-dimensional parameter scans and focusing on the hadronic $h \rightarrow b\bar{b}$ decay giving a $b\bar{b}b\bar{b} + E_T^{\text{miss}}$ final state we then explore the sensitivity of a current CMS α_T -based general-purpose jets+ E_T^{miss} analysis to such scenarios with a view to developing novel search approaches in the near future.

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