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LHC Signatures of Light Gauginos in String Motivated Models

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Abstract:

The low energy MSSM resulting from realistic compactifications of string/M-theory predicts that gauginos are the only SUSY particles which may be light enough to be observed at the LHC. I will discuss potential LHC signatures of such spectra in a class of realistic compactified string/M-theory vacua, focusing on vacua which predict sub-TeV gaugino masses. In particular, I will discuss a recent work (arXiv:1202.4448) which demonstrates that disappearing charged tracks resulting from decays of long-lived charginos can be used to supplement the canonical jets + MET gluino searches in Wino LSP scenarios. In addition to enhancing the reach of current squark/gluino searches, the presence of such disappearing tracks can help distinguish between various regions of MSSM parameter space.

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