THEORY SEMINAR

Monday January 30th, 2012 2:10 PM 831 Pupin Hall

Goldstini at the LHC

Supersymmetry is a well-motivated extension of the standard model which offers a rich phenomenology for both collider experiments and dark matter experiments. But if supersymmetry is to be realized in nature, it must be spontaneously broken. To this end, it is conventionally assumed that supersymmetry breaking originates from a single source. In this talk, I will show how the phenomenology of supersymmetry can be dramatically modified if there is more than one source of supersymmetry breaking. In particular, when there are multiple sectors which independently break supersymmetry, there is a corresponding multiplicity of "goldstini", which can have a dramatic impact on collider phenomenology and cosmology. I will discuss a number of interesting goldstini possibilities, including novel stable charged particle studies and invisible Higgs decay modes at the LHC.

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