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Type: **parallel talk**

Direct stau production at the LHC

Tuesday 8 May 2012 16:30 (15 minutes)

Abstract:

In this talk we investigate the direct production of supersymmetric scalar taus at the LHC. We present the general calculation of the dominant cross section contributions for stau pair production at hadron colliders within the MSSM, taking into account left-right mixing of the stau eigenstates.

We find that b-quark annihilation and gluon fusion can enhance the cross sections by more than one order of magnitude with respect to the Drell-Yan predictions.

For long-lived staus, we investigate relevant CMSSM parameter regions, kinematic distributions and possible consequences from recent searches. The obtained insights allow us to propose collider tests of cosmologically motivated scenarios with long-lived staus that have an exceptionally small thermal relic abundance.

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