



Contribution ID: 99

Type: **not specified**

Squark/neutralino production at NLO: a fully automated calculation with MadGolem

Monday, August 29, 2011 3:30 PM (20 minutes)

The associated production of squarks and neutralinos/charginos is a trademark supersymmetry signature. In this talk we present a complete NLO analysis of squark/neutralino and squark/chargino production at the LHC, carried out in the fully automated MadGolem setup.

MadGolem is a new computational tool that automatizes NLO calculations of generic 2->2 New Physics processes as part of MadEvent.

In the first part of the talk we will report on the squark/neutralino and squark/chargino cross-sections and distributions and discuss the quantitative impact and the qualitative features of the NLO effects.

The second part of the talk will be devoted to the structure of MadGolem, with special emphasis on the automatic generation of the renormalized one-loop amplitudes, and the subtraction terms for the infrared and the on-shell divergences.

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Session Classification: Parallel Session 4

Track Classification: SUSY: phenomenology