



Contribution ID: 146

Type: parallel talk

The impact of discovering a Z' with LHC-14 on stops searches

Monday 9 May 2016 17:45 (15 minutes)

Introduction

A minimal $U(1)_X$ extension of the MSSM

Bounds on Z'

Impact on stops masses

Conclusions

Summary

In order to reproduce the measured mass of the Higgs boson in the minimal supersymmetric standard model, one usually has to rely on heavy stops. By introducing a new gauge sector, the Higgs mass gets a tree-level contribution via a non-decoupling D-term, and the stops are allowed to be lighter. We study the values of the stops masses in a setup where the gauge group is extended by a single $U(1)_X$ interaction. We derive the experimental limits on the mass of the Z' gauge boson in this setup using LHC-13 data. We then explore the parameter space relevant for the stop masses assuming the discovery of a Z' resonance with LHC-14.

Author: CAPDEVILLA, Rodolfo (University of Notre Dame)

Co-authors: MARTIN, Adam Orion (University of Notre Dame (US)); DELGADO, Antonio (University of Notre Dame)

Presenter: CAPDEVILLA, Rodolfo (University of Notre Dame)

Session Classification: SUSY II