



Contribution ID : 884

Type : **Oral presentation**

Testing SUSY models for the muon $g-2$ anomaly at LHC

Saturday, 5 July 2014 16:10 (15)

Non-universal gaugino mass models can naturally account for the dark matter relic density via the bulk annihilation process with relatively light Bino LSP and right sleptons in the mass range of ~ 100 GeV, while accommodating the observed Higgs boson mass of ~ 125 GeV with TeV scale squark/gluino masses. A class of these models can also account for the observed muon $g-2$ anomaly via SUSY loops with wino and left sleptons in the mass range of 400 - 600 GeV. These models can be tested at LHC via electroweak production of charged and neutral wino pair, leading to robust trilepton and same sign dilepton signals. We investigate these signals along with the standard model background for both 8 and 13 TeV LHC runs.

Summary

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Session Classification : Beyond the Standard Model

Track Classification : Beyond the Standard Model