

LHC signals from R-parity violating chargino decays

Friday, 28 August 2015 14:00 (20 minutes)

Collider searches for supersymmetric models with R-parity violation (RPV) generally focus on the decay of the (effectively) lightest supersymmetric particle (LSP) through RPV operators. The signal then depends both on the nature of the LSP and the relevant RPV operators. Here we identify scenarios where RPV decays of charginos are important, either because the R-parity conserving decay modes are suppressed by a small chargino–neutralino mass difference, or because the chargino is itself the LSP. These scenarios can potentially lead to striking collider signatures, such as resonances of three charged leptons.

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Session Classification: SUSY Expt. and Phenomenology

Track Classification: Supersymmetry Phenomenology and Experiment