

The R-parity Violating Decays of Charginos and Neutralinos in the B-L MSSM

Wednesday, July 14, 2021 2:45 PM (15 minutes)

The R-parity violating decays of Wino charginos, Wino neutralinos and Bino Neutralinos LSPs are analyzed within the context of the B – L MSSM “heterotic standard model”. These LSPs correspond to statistically determined initial soft supersymmetry breaking parameters which, when evolved using the renormalization group equations, lead to an effective theory satisfying all phenomenological requirements; including the observed electroweak vector boson and Higgs masses. The explicit decay channels of these LSPs into standard model particles, the analytic and numerical decay rates and the associated branching ratios are presented. The decay lengths of these RPV interactions are discussed. It is shown that the vast majority of these decays are “prompt”, although a small, but calculable, number correspond to “displaced vertices” of various lengths. The relation of these results to the neutrino hierarchy—either normal or inverted—is discussed in detail.

Are you are a member of the APS Division of Particles and Fields?

No

Primary author: DUMITRU, Sebastian (University of Pennsylvania)

Presenter: DUMITRU, Sebastian (University of Pennsylvania)

Session Classification: Beyond Standard Model

Track Classification: Beyond Standard Model Physics