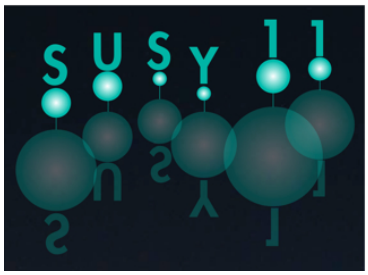

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Stable massive particles at the LHC: novel interpretations and future prospects

Tuesday, 30 August 2011 15:20 (25 minutes)

A number of searches for massive long-lived particles have been performed with early LHC data. While existing ATLAS and CMS limits in R-hadron production cross sections have been interpreted as metastable squark and gluino mass limits, in the present work they are also interpreted as limits in couplings within models of leptoquarks, R-parity violating supersymmetry and split supersymmetry. By reviewing the most recent long-lived highly ionising particle searches it is shown that magnetic monopoles are still unconstrained at the LHC. The sensitivities of a range of LHC experiments to highly ionising particles, both for direct detection in the detectors and detection of monopoles trapped in the beam pipe, are determined for various production processes and expressed as functions of particle charge and mass.

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