Contribution ID: **78** Type: **Talk**

Experimental Constraints on Baryon Number Violation in Supersymmetry

Monday 4 July 2016 15:20 (20 minutes)

Baryon number violation (BNV) features in a number of physics beyond the Standard Model and is experimentally well motivated as it is one of the conditions for baryogenesis. In this talk, experimental results which are sensitive to BNV will be discussed in the context of R-parity violating supersymmetric scenarios with non-zero BNV couplings and a simplified sparticle mass spectrum. Focus is placed on processes in which baryon number is the only hitherto conserved quantity which is violated unlike, for example, single nucleon decay in which lepton number and baryon number must be violated. The suite of results considered comprises neutron-antineutron oscillations, dinucleon decays, precision measurements of flavour transitions and CP-violation as well as LHC searches. The relative contributions of the different experimental observables in constraining BNV processes are studied. The impact of a new proposed search at the European Spallation Source for neutron-antineutron oscillations, which is projected to improve sensitivity in the neutron-antineutron oscillation probability by three orders of magnitude, is also quantified.

Primary authors: PETERSSON, Christoffer (Chalmers University of Technology (SE)); MILSTEAD, David Anthony (Stockholm University (SE)); FERRETTI, Gabriele (Chalmers University); CALIBBI, Lorenzo (ULB, Brussels); POTTGEN, Ruth (Stockholm University (SE))

Presenter: POTTGEN, Ruth (Stockholm University (SE))

Session Classification: Experimental and Collider Aspects of SUSY

Track Classification: Experimental and Collider Aspects of SUSY