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Baryon number violation in supersymmetry: Neutron-antineutron oscillations as a probe beyond the LHC

Baryon number violation is required for baryogenesis and features in a number of topical extensions of the Standard Model. In this talk, experimental results which are sensitive to baryon number violation are interpreted within R-parity violating supersymmetry scenarios with non-zero baryon number violating couplings and a simplified sparticle mass spectra. Processes with $\Delta B = 2$ which would be expected to allow neutron-antineutron oscillations are considered. Results from the LHC experiments are used, as are precision measurements of flavour transitions and CP-violation. The relative contributions of the different experimental observables in constraining $\Delta B = 2$ processes are studied. The impact of a new proposed search for neutron-antineutron oscillations at the ESS is also quantified.

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