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An Upper Limit on the Neutron-Antineutron Oscillation Time

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A new scenario for baryogenesis, termed post-sphaleron baryogenesis (PSB), has been proposed wherein the baryon asymmetry of the universe is produced below the electroweak phase transition temperature after the sphaleron processes have gone out of equilibrium. This mechanism arises naturally in quark-lepton unified models. A necessary consequence of this scenario is the baryon number violating $B = 2$ process of neutron-antineutron oscillations. We show that the constraints of PSB, when combined with the neutrino oscillation data and restrictions from flavor changing neutral currents imply an upper limit on the n - \bar{n} oscillation time, which is accessible to the next generation of proposed experiments.

Author: Dr DEV, P. S. Bhupal (University of Manchester)

Presenter: Dr DEV, P. S. Bhupal (University of Manchester)

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