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New Low Scale Baryogenesis

We present a novel mechanism for baryogenesis via a low scale leptogenesis. The mechanism consists of two parts: first, out of equilibrium sub-weak-scale CP asymmetric decays of heavy sterile neutrinos result in leptogenesis carried by lighter sterile neutrinos. Second, the lepton asymmetry is transferred into a baryon asymmetry via baryon number violating scatterings of the light neutrino, dark states and neutrons. We show that the mechanism produces lepton and baryon abundances in agreement with current observational constraints. Finally, we discuss relevant phenomenology and potential signatures.

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