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Quasi-Dirac neutrinos and the Baryon Asymmetry of the Universe

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Though two of the biggest puzzles in fundamental physics-the cosmic baryon asymmetry and tiny neutrino masses-can be elegantly accommodated in leptogenesis models, usually, these models cannot be subject to direct tests due to additional high energy parameters which are decoupled from low energy phenomena. In our novel scenario, the light neutrino masses are obtained through a quasi-Dirac seesaw mechanism, where B-L is slightly broken at high scale. The same source of breaking is responsible for successful leptogenesis close to weak scale as well as the small mass splitting between the quasi-Dirac light neutrinos. Nontrivially, the viable parameter space for leptogenesis spans over the one which can be explored in the neutrino oscillation experiments.

Summary

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