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Long-Lived Heavy Neutral Leptons in Cosmology

Thursday, December 14, 2023 2:55 PM (5 minutes)

Heavy Neutral Leptons (HNLs) are a popular extension of the Standard Model to explain the lightness of neutrino masses and the matter-antimatter asymmetry through leptogenesis. Cosmology can constraint the regime of active-sterile neutrino mixing in a standard Seesaw scenario of neutrino mass generation for HNL masses around m_N

$\lesssim 1$ -GeV. Motivated by this, we analyse HNL-ALP coupling and its impact on cosmology. Following an analytic discussion of the Big Bang Nucleosynthesis, ALP populations and other cosmological facts which can constraint the nature of sterile neutrinos and ALPs.

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