

Whispers from the Dark Universe - Particles & Fields in the Gravitational Wave Era

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WHISPERS FROM THE DARK UNIVERSE – PARTICLES & FIELDS IN THE GRAVITATIONAL WAVE ERA

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24 - 27 September 2024 DESY Hamburg, Germany



Contribution ID: 158

Type: **not specified**

A bound on the lightest right-handed neutrino from wash-in Leptogenesis

Thursday 26 September 2024 14:32 (16 minutes)

In recent years, wash-in leptogenesis has emerged as a new mechanism to explain the baryon asymmetry of the universe. In contrast to other leptogenesis scenarios it does not require CP-violation in the right handed neutrino sector (RHN). Instead it relies on primordial charge asymmetries generated at higher energies which are washed into a non vanishing B-L asymmetry via RHNs.

In this talk we consider a nonzero primordial charge asymmetry in the right handed electrons and demonstrate how efficiently RHNs convert it into a B-L asymmetry in different temperature and mass regimes. Our main result is a lower bound on the lightest RHN mass, in the standard type-I seesaw mechanism, of 7-8 TeV from the requirement of successful wash-in leptogenesis.

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Session Classification: Parallel Thursday Cosmo 2

Track Classification: Cosmology & Astroparticle Physics