DESY THEORY WORKSHOP

HELMHOLTZ

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DESY.

Leptogenesis in a Non-Minimal Scotogenic Model

Wednesday 28 September 2022 15:15 (15 minutes)

We discuss leptogenesis in a specific scotogenic model, where the Standard Model is extended by scalar and fermionic singlets and doublets charged odd under a Z_2 parity. This model is phenomenologically attractive as it is designed to dynamically generate small neutrino masses, provide viable dark matter candidates and also account for the current value of the $(g_\mu - 2)$ anomaly. In this talk, we discuss the production of a lepton asymmetry via the decays of the heavy fermionic singlets in this model, which is then converted into the observed baryon asymmetry through the sphaleron process. We identify regions of parameter space where successful leptogenesis is compatible with the $(g_\mu - 2)$ anomaly, lepton-flavour violating decays, such as $\mu \to e\gamma$, and the relic density of dark matter.

Summary

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