

Thermal leptogenesis in $SO(10) \times U(1)_A$ GUT

Thursday, 21 August 2025 14:40 (20 minutes)

In this study, we show that thermal leptogenesis can be realized within the framework of the $SO(10) \times U(1)_A$ grand unified theory(GUT). Furthermore, by including flavor effects, we have found that the second-lightest right-handed neutrino makes a significant contribution. As a result, the mass derived in this study is approximately six times larger than the mass predicted for the right-handed neutrino by the $SO(10) \times U(1)_A$ GUT. This also implies that the mass of the left-handed neutrino becomes approximately one-sixth of the value predicted by the same symmetry.

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Session Classification: Parallel session 6