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Electromagnetic leptogenesis in an effective field theory

Tuesday, 17 February 2026 11:00 (20 minutes)

We present a unified, gauge-invariant EFT analysis of low-scale electromagnetic leptogenesis sourced by CP-violating neutrino–gauge dipole interactions. We first match UV-complete models onto the dimension-six effective operator, and evaluate the decay widths, CP asymmetries, and the corresponding transport equations in the electroweak-broken phase. We then show that the suppression arising from the competition between the CP asymmetry and washout can be overcome by the resonant enhancement induced by self-energy resummation in a quasi-degenerate heavy-neutrino spectrum.

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