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N_1+N_2-leptogenesis in $\Delta(27)$ with a universal texture zero

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We investigate the possibility of viable leptogenesis in an appealing $\Delta(27)$ model with a universal texture zero. The model accommodates the mass spectrum, mixing and CP phases for both quarks and leptons and allows for grand unification. Flavoured Boltzmann equations for the lepton asymmetries are solved numerically, taking into account both N_1 and N_2 right-handed neutrino decays. We show that leptogenesis is separately possible in either the N_1 and N_2 dominated scenarios, with the asymmetry in the electron flavour protected from the N_1-washout by the texture zero. The two viable regions of the parameter space are $M_1 \in [10^9, 10^{12}]$, with $M_1/M_2 \in [0.002, 0.1]$, and $M_1 \in [10^9, 10^{10}]$, with $M_1/M_2 < 0.002$ and M_2 relatively close to M_3, which however is not a natural expectation of the $\Delta(27)$ model. We conclude that the N_1-dominated scenario is successful and the most natural option for the model.

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