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Leptogenesis studied in left-right symmetric model with A_4 modular symmetry

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In this work, Left-Right Symmetric (LRSM) has been realized with the modular group of level 3, that is, $\Gamma(3)$ and weight 2, which is isomorphic to non-abelian discrete symmetry group A_4 . It is a well-known fact that there are physics beyond the Standard Model framework, where several phenomenological studies can be carried out. In our present work, we are concerned about the study of leptogenesis in modular symmetric LRSM.

The advantage of using modular symmetry is that, we do not require the use of any extra particles (flavons) for obtaining the desired results within the realization of the model. In the present study, we are concerned about the phenomena of 'Resonant Leptogenesis (RL)' within the framework of Left-Right Symmetric Model. Some figures have been plotted to show the variation of baryon asymmetry parameter with the parameters incorporated within modular symmetry and it has been found that the results are well within the bounds set by the experiments which suggests that the study of leptogenesis via $\Gamma(3)$ modular realization can prove to be a consistent theory and would help us in studying further phenomenology hereafter.

Reference publication/preprint

Designation

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