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## Neutrino Phenomenology and Leptogenesis in type-III Seesaw under $A_4$ Modular symmetry

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We utilize  $A_4$  modular symmetry in supersymmetric context to explore type-III seesaw mechanism. Our work includes extra local  $U(1)_{B-L}$  symmetry, which helps us to avoid some undesirable terms in the superpotential. As the seesaw being type-III, it involves fermion triplet superfields  $\Sigma$  and we have also included weighton singlet field ( $\rho$ ), which gets VEV ( $v_\rho$ ) after  $U(1)_{B-L}$  symmetry breaking. Therefore a  $Z'$  comes into picture which participates in contribution to  $(g-2)_\mu$ . A crucial role here is played by modular symmetry that are expressed in preventing the use of excess fields. As well, the Yukawa couplings develop modular forms expressed in terms of dedekind eta function  $\eta(\tau)$ ,  $\tau$  being a complex variable in the upper half plane. Therefore, matching of neutrino oscillation data with experiments in its  $3\sigma$  range, predicts the validity of our model. Moreover, we have briefly discussed leptogenesis and muon anomalous magnetic moment.

### In-person participation

Yes

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