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## Investigating One Zero Texture in Neutrino Mass Matrix with Generalized CP Symmetry

The textures in the neutrino mass matrix refer to specific patterns and structures, these textures have the ability to constrain various neutrino parameters such as mixing angles, Dirac and Majorana phases, and mass eigenstates. In this work, we investigate one zero texture within the framework of generalized CP symmetry associated with the complex tribimaximal matrix. The generalized CP symmetry extends the traditional CP symmetry by incorporating additional transformations that can affect the neutrino mass matrix. When we impose generalized CP symmetry on the neutrino mass matrix, it transforms the neutrino mass matrix into its complex conjugate. By combining these approaches, we derive predictive neutrino mass matrices and elucidate correlations between various parameters. Additionally, we analyze neutrinoless double beta decay in the constraints from Planck data on the sum of neutrino masses,  $\Sigma m_i \leq 0.12 \, \text{eV}$  and the DESI/SDSS+Pantheon+DES-SN( $\leq 0.17 \, \text{eV}$ ) to assess the compatibility of one zero texture within this framework.

## Field of contribution

Phenomenology

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