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Broken S3 neutrinos
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Abstract
Motivated by recent measurements which strongly support a nonzero reactor mixing angle θ13, we study a deviation from S3 neutrino discrete symmetry by explicitly breaking the neutrino mass matrix with a general retrocirculant matrix. We show that nonzero θ13 and nonzero CP violation parameter JCP arise due to the difference between y2 and y3. We demonstrate that it is possible to obtain the experimentally favored results for neutrino masses and mixing angles from this mass matrix. Furthermore, we estimate the effective masses m β and mββ and total neutrino mass Σ|mi| predicted by this mass matrix. © 2013 American Physical Society.

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