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Predicting Lepton Mixing Parameters including Majorana Phases from $\Delta(6n^2)$ Flavour Symmetry and Generalised CP

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An important class of flavour groups that are subgroups of $U(3)$ and that predict experimentally viable lepton mixing parameters including Majorana phases, is the $\Delta(6n^2)$ series. The most well-known member is $\Delta(24)=S_4$. I present results of several extensive studies of lepton mixing predictions obtained in models with a $\Delta(6n^2)$ flavour group that preserve either the full Klein symmetry or a Z_2 subgroup for neutrinos and can include a generalised CP symmetry. Predictions include mixing angles and Dirac CP phase generally; and if invariance under a generalised CP symmetry is included, also Majorana phases. For this, the interplay of flavour group and generalised CP symmetry has to be studied carefully. Furthermore, I present results for neutrinoless double-beta decay.

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