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Title:	Residual $Z_2$ symmetries and leptonic mixing patterns from finite discrete subgroups of $U(3)$
Authors:	Joshiyura, A.S. (/jspui/browse?type=author&value=Joshiyura%2C+A.S.) Patel, K.M. (/jspui/browse?type=author&value=Patel%2C+K.M.)
Keywords:	Discrete Symmetries Neutrino Physics CP violation
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Citation:	Journal of High Energy Physics, 2017(1).
Abstract:	We study embedding of non-commuting $Z_2$ and $Z_m$ , $m \geq 3$ symmetries in discrete subgroups (DSG) of $U(3)$ and analytically work out the mixing patterns implied by the assumption that $Z_2$ and $Z_m$ describe the residual symmetries of the neutrino and the charged lepton mass matrices respectively. Both $Z_2$ and $Z_m$ are assumed to be subgroups of a larger discrete symmetry group $G_f$ possessing three dimensional faithful irreducible representation. The residual symmetries predict the magnitude of a column of the leptonic mixing matrix $U_{PMNS}$ which are studied here assuming $G_f$ as the DSG of $SU(3)$ designated as type C and D and large number of DSG of $U(3)$ which are not in $SU(3)$ . These include the known group series $\Sigma(3n, 3)$ , $T_n(m)$ , $\Delta(3n, 2, m)$ , $\Delta(6n, 2, m)$ and $\Delta'(6n, 2, j, k)$ . It is shown that the predictions for a column of $ U_{PMNS} $ in these group series and the C and D types of groups are all contained in the predictions of the $\Delta(6N, 2)$ groups for some integer $N$ . The $\Delta(6N, 2)$ groups therefore represent a sufficient set of $G_f$ to obtain predictions of the residual symmetries $Z_2$ and $Z_m$ .
URI:	<a href="https://link.springer.com/article/10.1007/JHEP01(2017)134">https://link.springer.com/article/10.1007/JHEP01(2017)134</a> ( <a href="https://link.springer.com/article/10.1007/JHEP01(2017)134">https://link.springer.com/article/10.1007/JHEP01(2017)134</a> ) <a href="http://hdl.handle.net/123456789/2675">http://hdl.handle.net/123456789/2675</a> ( <a href="http://hdl.handle.net/123456789/2675">http://hdl.handle.net/123456789/2675</a> )
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