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Lepton flavour mixing in gauged SO(3)

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We discuss SO(3) as the origin of finite family symmetries such as A4, S4 and A5 in the SUSY framework for the first time. We propose a supersymmetric gauged SO(3)xU(1) flavour model. This model goes through two-step symmetry breaking, first from SO(3) to A4 and then from A4 to residual Z2 and Z3. The model is consistent with current oscillation data and predicts sum rules of mixing parameters. The cosmological domain wall problem, a well-known problem for discrete symmetry breaking, is resolved in the model. Furthermore, the model predicts three degenerate gauge bosons and another Z'with specifically cLFV interactions, which worths further phenomenological studies.

Collaboration name

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