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Generalized Symmetries and Model Building

Monday 9 December 2024 14:51 (17 minutes)

Generalized global symmetries are present in theories of particle physics, and understanding their structure can give insight into these theories and UV completions thereof. We will identify non-invertible chiral symmetries in certain flavorful Z' extensions of the Standard Model, and this will lead us to interesting nonperturbative effects in theories of gauged non-Abelian flavor. For the leptons we will find naturally exponentially small Dirac neutrino masses. In the quark sector, a certain symmetry exists specially because we have the same numbers of colors and generations, and leads us to a massless down-type quarks solution to strong CP in color-flavor unification.

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