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Non-invertible flavor symmetries in magnetized extra dimensions

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In this talk, we discuss non-invertible symmetries in orbifold compactifications of higher dimensional Yang-Mills theory with magnetic fluxes. Specifically, we present fusion algebras of discrete isometry operators, which are invariant under the $\mathbb{Z}_N$ orbifold twist and their representations explicitly on zero-mode wave functions. These zero-modes may correspond to generations of quarks and leptons in four- dimensional low-energy effective field theory. Hence, our finding non-invertible symmetries correspond to a kind of flavor symmetries among quarks and leptons.

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