



Contribution ID: 42

Type: **Parallel Talk**

Higher-group symmetry in lattice gauge theories with restricted topological sectors

Monday, 31 July 2023 17:00 (20 minutes)

We consider gauge theories on a four-dimensional torus, where the instanton number is restricted to an integral multiple of p . This theory possesses the nontrivial higher-group structure, which can be regarded as a generalization of the Green-Schwarz mechanism, between the 1-form center and \mathbb{Z}_p 3-form symmetries. Following recent studies of the lattice construction of the $U(1)/\mathbb{Z}_q$ and $SU(N)/\mathbb{Z}_N$ principal bundles, we examine how such a structure is realized on the basis of lattice regularization.

Topical area

Theoretical Developments

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