



Contribution ID: 90

Type: **Parallel Talk**

Symmetric mass generation in lattice gauge theory

Tuesday, 1 August 2023 17:00 (20 minutes)

We present results from simulations of a $\text{spin}(4)$ lattice gauge theory in four dimensions containing a single flavor of massless reduced staggered fermion. This model does not allow for single site gauge invariant bilinear fermion terms and instead we show that it develops a four fermion condensate in the confining regime. The absence of symmetry breaking is consistent with the cancellation of a 't Hooft anomaly corresponding to a discrete Z_4 symmetry. If the $\text{spin}(4)$ symmetry is extended to $\text{SU}(4)$ we argue that in the naive continuum limit the model contains the matter representations and global symmetries of the Pati-Salam GUT model in which we can embed a single family of the Standard Model

Topical area

Particle Physics Beyond the Standard Model

Primary author: CATTERALL, Simon (syracuse university)**Co-authors:** Mr CAN TOGA, Goksu (Syracuse University); Dr BUTT, Nouman (UIUC)**Presenter:** CATTERALL, Simon (syracuse university)**Session Classification:** Particle Physics Beyond the Standard Model