Lattice 2024



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Symmetric mass generation for staggered fermions

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I will describe new strongly coupled phases of staggered fermions in which all states can be given mass without breaking any exact lattice symmetries.

Numerical results for Higgs-Yukawa and gauge theories will be shown.

A necessary condition for the existence of such phases is the cancellation of a certain exact lattice 't Hooft anomaly. I will show that the minimal anomaly free theory has a continuum limit with the global symmetries and matter representations of the well known Pati-Salam GUT containing the Standard Model.

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