



Contribution ID: 68

Type: **not specified**

Further properties of Minimally Doubled Fermions

Tuesday, 15 June 2010 18:00 (5 minutes)

Minimally doubled fermions reconcile standard chiral symmetry with a minimal number of flavours in accordance with the restrictions of the Nielsen-Ninomiya no-go theorem. Hypercubic symmetry however, is necessarily broken by the alignment of two poles of the propagator in momentum space.

The specified direction of the symmetry breaking strongly affects the properties of these actions. We introduce a constant vector Λ breaking hypercubic symmetry explicitly, which points from one zero mode to the other and yields a uniform description of the renormalization properties of minimally doubled fermions. We use this vector to clarify the symmetry of the two zero modes.

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talk

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Session Classification: Poster session

Track Classification: Chiral symmetry