

Spectral Flow and Index Theorem for Staggered Fermions

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We investigate numerically the spectral flow introduced by Adams for the staggered Dirac operator on realistic (quenched) gauge configurations. We obtain clear numerical evidence that the definition works as expected: there is a clear separation between crossings near and far away from the origin, and the topological charge defined through the crossings near the origin agrees, for most configurations, with the one defined through the near-zero modes of large taste-singlet chirality of the staggered Dirac operator. The crossings are much closer to the origin if we improve the Dirac operator used in the definition, and they move towards the origin as we decrease the lattice spacing.

For more information, please see [arxiv:1410.5733[hep-lat]].

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