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The ’t Hooft vertex for staggered fermions and flavor-singlet mesons*

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We derive the ’t Hooft vertex for staggered fermions and examine its symmetries for nonzero lattice spacing. We also derive a set of structural properties for the eigenvectors of the staggered Dirac operator, which should emerge in the continuum limit, if staggered fermions yield four species. This property also is needed for flavor-taste-singlet correlators to behave correctly. We then test numerically* whether the needed structure arises: it does. This structure and symmetry of (unrooted) staggered fermions also imply that Creutz’s (latest) objections to the rooted determinant are without foundation.

For more information, we refer the reader to our publication: Phys. Rev. D **84** (2011) 054504 [arXiv:1106.2412 [hep-lat]].

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