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

Gordon C. Donald†
SUPA, School of Physics and Astronomy, University of Glasgow, Glasgow G12 8QQ, United Kingdom
E-mail: g.donald@physics.gla.ac.uk

Christine T. H. Davies†
SUPA, School of Physics and Astronomy, University of Glasgow, Glasgow G12 8QQ, United Kingdom
E-mail: c.davies@physics.gla.ac.uk

Eduardo Follana‡
Departamento de Física Teórica, Universidad de Zaragoza, Cl. Pedro Cerbuna 12, E-50009 Zaragoza, Spain
E-mail: efollana@unizar.es

Andreas S. Kronfeld§
Theoretical Physics Department, Fermi National Accelerator Laboratory,¶ *Batavia, Illinois 60510-5011, USA*
E-mail: ask@fnal.gov

(HPQCD and Fermilab Lattice Collaborations)

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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§Speaker.

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