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Education

Ph.D. Theoretical High Energy Physics, University of Minnesota, 1990.

Thesis: "Chern-Simons Field Theory at Finite Temperature".

Advisor: Yutaka Hosotani

B.S. Physics, Case Western Reserve University, 1982.

Junior Year Abroad: Sussex University, 1980-81.

Experience

University of the Pacific, Physics Department, Professor and Department Chair, 2005–present

University of the Pacific, Physics Department, Associate Professor and Department Chair, 2001-2005

University of the Pacific, Physics Department, Assistant Professor and Department Chair, 1997-2001

Washington University, St. Louis, Physics Department, Research Associate, 1996-1997

Physics Department, University of Arizona, Research Associate, 1994-1996

Department of Physics, University of Arizona, Research Associate, 1994-1996

Institute for Theoretical Physics, University of Arizona, Postdoctoral Research Fellow, 1992-1994

Interdisciplinary Project for Supercomputing, ETH Zürich, Postdoctoral Research Fellow, 1990-1992

South Pole Station, Antarctica, Research Scientist, 1982-83 (wintered over)

Research

Fields of Research Interest

Lattice Gauge Theory, Computational Physics, Topological Aspects of Gauge Theories, Astrophysics, Data Science

Significant (>100 citations) Peer-Reviewed Publications

- A. Bazavov et al. [MILC Fermilab Lattice Collaborations]. B- and D-meson decay constants from three-flavor lattice QCD. *Phys.Rev.*, D85:114506, 2012.
- A. Bazavov et al. [MILC Collaboration]. Nonperturbative QCD simulations with 2+1 flavors of improved staggered quarks. *Rev.Mod.Phys.*, 82:1349–1417, 2010.
- J. Bailey et al. [MILC Fermilab Lattice Collaborations]. The $B \rightarrow \pi \ell \nu$ semileptonic form factor from three-flavor lattice QCD: A Model-independent determination of $|V_{ub}|$. *Phys.Rev.*, D79:054507, 2009.
- C. Bernard et al. [MILC Collaboration]. QCD equation of state with 2+1 flavors of improved staggered quarks. *Phys.Rev.*, D75:094505, 2007.

- C. Aubin et al. [MILC Fermilab Lattice Collaborations]. Charmed meson decay constants in three-flavor lattice QCD. *Phys.Rev.Lett.*, 95:122002, 2005.
- C. Aubin et al. [MILC Collaboration]. Light pseudoscalar decay constants, quark masses, and low energy constants from three-flavor lattice QCD. *Phys.Rev.*, D70:114501, 2004.
- C. Aubin et al. [MILC Collaboration]. Light hadrons with improved staggered quarks: Approaching the continuum limit. *Phys.Rev.*, D70:094505, 2004.
- M. Okamoto et al. [MILC Fermilab Collaborations]. Semileptonic D to π/K and B to π/D decays in 2+1 flavor lattice QCD. *Nucl.Phys.Proc.Suppl.*, 140:461–463, 2005.
- C. Aubin et al. [MILC Fermilab Collaborations]. Semileptonic decays of D mesons in three-flavor lattice QCD. *Phys.Rev.Lett.*, 94:011601, 2005.
- C. Aubin et al. [MILC HPQCD UKQCD Collaborations]. First determination of the strange and light quark masses from full lattice QCD. *Phys.Rev.*, D70:031504, 2004.
- C.T.H. Davies et al. [MILC HPQCD UKQCD Fermilab Lattice Collaborations]. High precision lattice QCD confronts experiment. *Phys.Rev.Lett.*, 92:022001, 2004.
- C. Bernard et al. [MILC Collaboration]. The Static quark potential in three flavor QCD. *Phys.Rev.*, D62:034503, 2000.
- C. Bernard et al. [MILC Collaboration]. Exotic mesons in quenched lattice QCD. *Phys.Rev.*, D56:7039–7051, 1997.
- C. Bernard et al. [MILC Collaboration]. The Equation of state for two flavor QCD at $N(t) = 6$. *Phys.Rev.*, D55:6861–6869, 1997.
- T. Blum et al. [MILC Collaboration]. Improving flavor symmetry in the Kogut-Susskind hadron spectrum. *Phys.Rev.*, D55:1133–1137, 1997.

Other Important Publications

- A. Bazavov et al. [MILC Collaboration]. Topological susceptibility with the asqtad action. *Phys.Rev.*, D81:114501, 2010.
- C. Aubin et al. [MILC Collaboration]. The Scaling dimension of low lying Dirac eigenmodes and of the topological charge density. *Nucl.Phys.Proc.Suppl.*, 140:626–628, 2005.
- Thomas C. Blum, James E. Hetrick, and Doug Toussaint. High density QCD with static quarks. *Phys.Rev.Lett.*, 76:1019–1022, 1996.
- James E. Hetrick, Y. Hosotani, and S. Iso. The Massive multi - flavor Schwinger model. *Phys.Lett.*, B350:92–102, 1995.
- James E. Hetrick and Yutaka Hosotani. QED on a Circle. *Phys.Rev.*, D38:2621, 1988.

A full list of publications (>150), including conference presentations is available at: inspirehep.net/search?p=fin+a+hetrick

Grants, Fellowships, & Awards

National Science Foundation, Division of Theoretical Physics, “Lattice Gauge Theory at the University of the Pacific”, \$279,660, 2013

National Science Foundation, Division of Information and Intelligent Systems, "High-Performance Computing Education at the University of the Pacific", \$34,626, 2012

National Science Foundation, Division of Theoretical Physics, "QCD Physics and Beyond the Standard Model on the Lattice", \$292,260, 2010

National Science Foundation, Division of Theoretical Physics, "Investigations in Lattice Gauge Theory", \$284,939, 2007

California Science Project, K-12 STEM Teacher Professional Development, "The Delta Sierra Science Project" \$55,000/year, 2002-2014

National Science Foundation, Division of Undergraduate Education, "Action Through STEM Collaborations to Educate New Teachers (ASCENT)", \$345,220, *pending*

Professional Activities

Reviewer for: *Physical Review*, *Physical Review Letters*,

Member, American Physical Society (APS), American Association for the Advancement of Science (AAAS)