

David Schaich

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EDUCATION	Boston University , Boston MA Ph.D., Physics, and Certificate in Computational Science, May 2011 Thesis: <i>Strong Dynamics and Lattice Gauge Theory</i> Advisors: Claudio Rebbi and Rich Brower M.A., Physics, May 2008 Amherst College , Amherst MA B.A. <i>summa cum laude</i> , Physics, History, and Mathematics, May 2006 Thesis: <i>Lattice Simulations of Nonperturbative Quantum Field Theories</i> Advisor: Will Loinaz Summer schools: Les Houches Summer School in Lattice Gauge Theory, Les Houches, France August 2009 CTEQ Summer School on QCD Analysis and Phenomenology, Madison May–June 2007 CERN Summer Students Programme, Geneva, Switzerland July–August 2005	
RESEARCH BACKGROUND	Lattice gauge theory and lattice QCD Dynamical electroweak symmetry breaking and new strong dynamics Quantum field theory and physics beyond the Standard Model High-performance computing and computational physics	
PROFESSIONAL EXPERIENCE	University of Colorado , Boulder CO Postdoctoral Research Associate September 2011 to present Member of the Lattice Strong Dynamics Collaboration and US BSM Collaboration Boston University , Boston MA Member of Center for Computational Science September 2006–June 2011 Member of Particle Theory Group September 2007–June 2011 Researched lattice field theory and physics beyond the standard model Helped organize two international workshops: <i>Lattice Gauge Theory for LHC Physics</i> , 6–7 November 2009 <i>Numerical Analysis for Lattice Gauge Theory</i> , 8–10 September 2010 Amherst College , Amherst MA Physics Teaching Assistant January 2003–May 2006 Mathematics Teaching Assistant September 2004–May 2006 Assisted introductory and intermediate courses in physics, mathematics and statistics. Duties included grading homework or lab reports, and running review sessions.	
VISITING POSITIONS	National Taiwan Normal University , Taipei June–August 2011 Lawrence Livermore National Lab , Livermore CA January–February 2010 CERN , Geneva, Switzerland June–August 2005 Hope College , Holland MI May–July 2003	

HONORS AND
AWARDS

National Science Foundation (NSF) [EAPSI](#) Fellowship, 2011
NSF [IGERT](#) Fellowship, 2007–2009
Boston University Physics Department Chair’s Book Prize, 2008
 (“In recognition of excellence in achievement by a first year graduate student”)
Boston University Dean’s Fellowship, 2006–2007
Forris Jewett Moore Fellowship (Amherst College), 2006–2007
Sigma Xi (national scientific honor society), 2006
Phi Beta Kappa (national honor society), 2005
NSF Research Experience for Undergraduates fellowship, U. Michigan and CERN, 2005
John Petropulos Prize in Historical Scholarship (Amherst College), 2005
NSF Research Experience for Undergraduates fellowship, Hope College, 2003

TECHNICAL
SKILLS

Programming: C/C++; Fortran; Java; Perl; Python; Bash/csh scripting
High-performance computing: IBM Blue Gene/L; Cray XT5; Sun Constellation; clusters
Visualization: VTK; ParaView
System administration: UNIX/Linux
Markup: $\text{T}_{\text{E}}\text{X}$; $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$; $\text{BIB}\text{T}_{\text{E}}\text{X}$; HTML; PHP; SQL
Applications: Mathematica; Maple; Matlab; ROOT

PUBLICATIONS

WW Scattering Parameters via BSM Pseudoscalar Phase Shifts
Thomas Appelquist *et al.* (LSD Collaboration)
In preparation (2011)

Lattice Simulations and Infrared Conformality
Thomas Appelquist, George T. Fleming, Meifeng Lin, Ethan T. Neil and David A. Schaich
Physical Review D **84**:054501 (2011) [[arXiv:1106.2148](#)]

Hybrid Monte Carlo Simulation of Graphene on the Hexagonal Lattice
R. C. Brower, C. Rebbi and D. Schaich
Submitted to *Physical Review Letters* (2011) [[arXiv:1101.5131](#)]

Parity Doubling and the S Parameter Below the Conformal Window
Thomas Appelquist *et al.* (LSD Collaboration)
Physical Review Letters **106**:231601 (2011) [[arXiv:1009.5967](#)]

Exploring strange nucleon form factors on the lattice
Ronald Babich *et al.*
Submitted to *Physical Review D* (2011) [[arXiv:1012.0562](#)]

Toward TeV Conformality
Thomas Appelquist *et al.* (LSD Collaboration)
Physical Review Letters **104**:071601 (2010) [[arXiv:0910.2224](#)]

Improved lattice measurement of the critical coupling in ϕ_2^4 theory
David Schaich and Will Loinaz
Physical Review D **79**:056008 (2009) [[arXiv:0902.0045](#)].

PROCEEDINGS

Lattice study of ChPT beyond QCD
Ethan T. Neil *et al.* (LSD Collaboration)
Proceedings of Science **CD09**:088 (2009) [[arXiv:1002.3777](#)]

Möbius Algorithm for Domain Wall and GapDW Fermions
Richard Brower, Ron Babich, Kostas Orginos, Claudio Rebbi, David Schaich and Pavlos Vranas
Proceedings of Science **LATTICE 2008**:034 (2008) [[arXiv:0906.2813](#)]