[Updated August 2007]

Shaffique Adam

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Education

2006 Post-doctoral Research Associate
Condensed Matter Theory Center, *University of Maryland*
with *Sankar Das Sarma*

2006 PhD Theoretical Physics, *Cornell University*
Thesis: "*Magnetic Properties of Nanoscale Conductors*"
Advisor: *Piet W. Brouwer*

2004 MS Physics, *Cornell University*

2000 BS Physics with distinction (highest honor), *Stanford University*
with minor in Mathematics and Physics departmental honors

Summer Schools:

2007 Windsor, UK, 4th Windsor summer school on condensed matter theory, "*Quantum transport and dynamics in nanostructures*"
2006 ICTP, Trieste, Italy, "*College on physics of nano-devices*"
2006 PiTP/Les Houches, France, summer school on "*Quantum magnetism*"
2005 Niels Bohr Institute, Denmark, summer school on "*Transport in mesoscopic and single molecule systems*"
2004 Ecole de Physique Les Houches, France, school on "*Application of random matrices in physics*"
2000 Magdalen College, Oxford University, UK, tutorial on "*Foundations of quantum field theory*"
1997 Stanford University, sophomore college on *"The chemistry and physics of the origin of life"*

Publications

"*Scattering mechanisms and Boltzmann transport in graphene*", proceedings for an oral presentation at the International Conference on Electronic Properties of Two-dimensional Systems (EP2DS-17) in Genoa, Italy on July 17, 2007
S. Adam, E. H. Hwang, and S. Das Sarma
arxiv.org/0708.0404 [cond-mat]

"Measurement of scattering rate and minimum conductivity in graphene"
Y.-W. Tan, Y. Zhang, K. Bolotin, Y. Zhao, S. Adam, E. H. Hwang, S. Das Sarma, H. L. Stormer, and P. Kim
arxiv.org/0707.1807 [cond-mat]

"A self-consistent theory for graphene transport"
S. Adam, E. H. Hwang, V. M. Galitski, and S. Das Sarma
arxiv.org/0705.1540 [cond-mat]

"*Statistics of random voltage fluctuations and the low density residual conductivity of graphene*"
V. M. Galitski, S. Adam, and S. Das Sarma
cond-mat/0702117

"*Transport in chemically doped graphene in the presence of adsorbed molecules*"
E. H. Hwang, S. Adam, and S. Das Sarma
cond-mat/0610834

"*Carrier transport in 2D graphene layers*"
E. H. Hwang, S. Adam, and S. Das Sarma; Phys. Rev. Lett. **98** 186806 (2007)

"*Ferromagnetic resonance in a current driven nanopillar*"
J. N. Kupferschmidt, S. Adam, and P. W. Brouwer; Phys. Rev. B **74** 134416 (2006)

"*Mesoscopic anisotropic magnetoconductance fluctuations in ferromagnets*"
S. Adam, M. Kindermann, S. Rahav, and P. W. Brouwer; Phys. Rev. B **73** 212408 (2006)

"*Current induced spin-wave instability in thin ferromagnets: beyond linear stability analysis*"
S. Adam, M. L. Polianski, and P W. Brouwer; Phys. Rev. B **73**, 024425 (2006)

"*Scaling approach to electron-electron interactions in a chaotic quantum dot*"
S. Adam, P. W. Brouwer, and P. Sharma; Phys. Rev. B **68**, R241311 (2003)

"*Conductance-peak height correlations for a Coulomb-blockaded quantum dot in a weak magnetic field"*
S. Braig, S. Adam, and P. W. Brouwer; Phys. Rev. B **68**, 035323 (2003)

"*Magnetic-field dependence of energy levels in ultrasmall metal grains*"
S. Adam, M. L. Polianski, X. Waintal, P. W. Brouwer; Phys. Rev. B **66**, 195412 (2002)

"*Enhanced mesoscopic fluctuations in the crossover between random-matrix ensembles*"
S. Adam, P. W. Brouwer, J. P. Sethna, and X. Waintal; Phys. Rev. B **66**, 165310 (2002)

"*Sensitivity of an underwater acoustic array to ultra-high energy neutrinos*"
N.G. Lehtinen, S. Adam, G. Gratta, T. K. Berger, and M. J. Buckingham; Astroparticle Physics **17** (3) 279 (2002)

Select Research, Fellowships and Awards

2006 I2CAM Travel grant to International Center for Theoretical Physics, Trieste, Italy
2004–2006 Graduate Research Fellowship, Cornell Center for Nanoscale Systems
2004–2006 Graduate Resident Fellowship, Alice H. Cook House, Cornell University
2004 I2CAM Travel grant to International Center for Theoretical Physics, Trieste, Italy
2003 NATO ASI Travel grant to Ecole de physique, Les Houches, France
2002 Youth Award for Academic Excellence, Nairobi, Kenya
2000 Awarded two year Graduate Fellowship, Cornell University
2000 Student Baccalaureate speaker, Stanford University
1999 Physics Department research grant, Stanford University
1998 Undergraduate Research Opportunities grant, Stanford University
1997–1998 Undergraduate Research Assistant, Gravity Probe B, Stanford University

[Updated August 2007]

Teaching

Courses Taught

NES420/BioNb420 "*Seminar on Science and Religion*" (Spring 05-06, Cornell University)
NES 307 "*African Identity Films and Discussion*". Seminar for undergraduates at Alice H. Cook House (Fall 05-06, Cornell University)
Biology 299 "*Brainstorms*" . Discussion seminar for undergraduates at Alice H. Cook House (Spring 04-05, Cornell University)

Teaching Assistant

Physics 443 "*Introductory Quantum Mechanics*". For physics majors, mostly juniors and seniors (Spring 2003, Cornell University)
Physics 10SC "*The Elementary Particles and The Fundamental Interactions*". For potential physics majors, (Sophomore College 1999, Stanford University)
Physics 21 "*Mechanics and Heat*". For biology, social science and pre-med students (Autumn 1999, Stanford University)

Course Grader (Cornell University)

Physics 636 "*Solid State Physics II*" (graduate level course)
Physics 651 "*Relativistic Quantum Field Theory*" (graduate level course)
Physics 653 "*Statistical Physics*" (graduate level course)
Physics 654 "*Many Body Physics*" (graduate level course)

Conferences, Seminars, Talks and Posters

"*Carrier transport in 2D graphene layers*", contributed talk at the 17th International Conference on Electronic Properties of Two-Dimensional Systems (EP2DS-17), Genoa, Italy, July 17, 2007

"*Self-consistent RPA-Bolzmann theory for graphene transport*" , Seminar at Middle East Technical University, Ankara, Turkey (hosted by Hande Ustunel), June 12, 2007

"*International Conference on Graphene*", as part of the workshop on Dynamics and Relaxation in Complex Quantum and Classical Systems and Nanostructures, held at the Max Planck Institute for the Physics of Complex Systems, Dresden, Germany, September 25-29, 2006

"*Mesoscopic Anisotropic Magnetoconductance Fluctuations in Ferromagnets*", talk at the Fourth Stig Lundqvist Conference on Advancing Frontiers of Condensed Matter Physics, ICTP, Trieste, Italy, July 7, 2006

"*Quantum Coherent Transport in Ferromagnets*", contributed talk at PiTP/Les Houches Summer school on Quantum Magnetism, France, June 21, 2006

"*Magnetization dependent transport in nanomagnets*", Seminar at McGill University, Canada (hosted by Aashish Clerk), February 24, 2006

"*Mesoscopic transport in ferromagnets*", Science Colloquium at Wells College, NY (hosted by Niamh O' Leary), February 17, 2006

"*Yesterday's noise is tomorrow's signal -- the physical signatures of spin-transfer effects*", talk at Cornell Electron Device Seminar, Cornell University, December 2, 2005

"*Current Induced Instabilities in thin nanomagnets*", contributed talk at Niels Bohr Institute Symposium on transport in mesoscopic and single-molecule systems, University of Copenhagen, August 24, 2005

"*Current Induced Instabilities in thin nanomagnets*", poster at ICTP conference on strongly interacting systems at the nanoscale, Triste, Italy, August 10, 2005

"*Scaling approach to electron-electron interactions*", talk at Service de physique de l'etat condense, CEA Saclay, France, (hosted by Xavier Waintal), June 4, 2004

"*Magnetic Field Dependence of Energy Levels in Ultrasmall metal grains*", seminar for Cornell Center for Material Research, Cornell University, June 13, 2002

American Physical Society March Meetings:
"*Carrier transport in 2D graphene layers near the Driac point"*, Denver, Colorado (2007)
"*Mesoscopic anisotropic magnetoconductance fluctuations"*, Baltimore, Maryland (2006)
"*Current induced dynamics in thin ferromagnets*", Los Angeles, California (2005)
"*Spin wave instabilities in thin ferromagnets*", Montreal, Canada (2004)
"*Wavefunction correlations in Random Matrix Crossover Ensembles*", Austin, Texas (2003)
"*Avoided Crossings in small-metal grains*", Indianapolis, Indiana (2002)

Select University Service, Extracurricular Activities and Outreach

Referee, Physical Review (since 2005)
Professional Society membership: American Physical Society (since 2001)
Cornell Daily Sun, Opinion Columnist (2004-2005)
Cornell Nanoscale Systems Institute for Physics Teachers (2004-2006)
- NYS Regents level curriculum development (2004-2005)
- Demonstration at Whitney Point High School, November 15, 2005
- Demonstration at Ithaca High School, May 24, 2006

Cornell Center for Materials Research Outreach
- Saturday Academy for minority students (2001-2003)
- Outreach curriculum development (2002 – 2003)
- Initiated and developed Outreach program in Clayton, NY (Summer 2002)
- "*Ask a Scientist*" column, published Ithaca Journal, September 12, 2001

Cornell University West Campus Council, graduate student representative (2003-2006)
- Hans A. Bethe House Dean Search Committee
- Hans A. Bethe House Naming Committee
- Carl L. Becker House Dean Search Committee
- Graduate Resident Fellows Search Committee

Cornell University Graduate and Professional Student Assembly (2001-2003)
- Secretary, elected (2002-2003)
- Physical Sciences Representative, elected (2001-2003)
- University Trustee Election Nominating Committee (2002)
- Cornell Dining advisory committee (2003)
- Cornell United Religious Work, advisory board (2001-2003)
- Initiated and enabled online PhD thesis submission (2003)
- Increased flexibility of graduate student travel grant (2002)

Cornell University Committee on Academic Freedom and Professional Status of the Faculty
- Graduate student member (2002-2004)
- Taskforce on policy for faculty suspension (2002-2003)

Stanford University, Physics Department Undergraduate Study Committee. Evaluated curriculum and implemented changes to course requirements (1997-1999)
Cornell University James A. Perkins Prize for Interracial Harmony and Understanding, runner-up, awarded $1000 (2005)
Cornell University Class of '67 Award for best campus program promoting understanding, respect and amicable relations among students of different races and cultures (2001)
Ithaca City of Asylum, Board of Directors (2003-2006)