

Robert Konik

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Citizenship: Canadian
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EDUCATION

Ph.D. Theoretical Physics, Cornell University, Ithaca NY. September 1997
B.Sc. University of Calgary, Alberta, Canada, June 1991
Physics and Pure Mathematics (honours with distinction).

PROFESSIONAL EMPLOYMENT

**Physicist (2009)/Associate Physicist (2006)/
Assistant Physicist (2004)/Research Scientist (2003)** September 2003 - present time
CMPMS Department, Brookhaven National Laboratory

Research Scientist (2001)/Research Associate September 1999 - August 2003
Department of Physics, University of Virginia.

NSERC Postdoctoral Fellow October 1997 - September 1999
Department of Physics/Institute for Theoretical Physics, University of California, Santa Barbara.

NSERC Fellow and Graduate Research Assistant February 1993 - September 1997
Newman Laboratory, Department of Physics, Cornell University.

Consultant and Research Assistant Various periods during 1988-1995
AT&T Bell Laboratories (Murray Hill).

VISITING POSITIONS

Visiting Scientist February 2009, 2010
Universiteit van Amsterdam, Amsterdam, the Netherlands

Visiting Professor May 2008
Université de Cergy-Pontoise, Paris, France

INSTANS Visiting Scientist February-March 2008
Universiteit van Amsterdam, Amsterdam, the Netherlands

EDITORIAL SERVICE

Adjunct Editor 2008-present
Physical Review B

Referee
Physical Review Letters
Physical Review B
Nuclear Physics B
New Journal of Physics
Europhysics Letters
Journal of Statistical Mechanics
Basic Energy Sciences Division of the Department of Energy
National Science Foundation

ACADEMIC HONORS

Co-principal investigator on research grant received from Stichting voor Fundamenteel Onderzoek der Materie (FOM) (2009-2013)

NSERC Postdoctoral Fellowship (1997-1999)

NSERC PGS B Award (1994-1996)

Sir James Loughheed Award of Distinction (1991-1993)

INVITED TALKS AND COLLOQUIA

Non-equilibrium behavior of 1D Bose Gases presented at the CUNY Graduate Center, November 2012.

Non-equilibrium behavior of 1D Bose Gases as part of workshop *Dynamic and Thermodynamics in Isolated Quantum Systems* at the KITP, UCSB, September 2012.

Non-equilibrium behavior of 1D Bose Gases as part of workshop *Workshop on Quantum Simulations with Ultracold Atoms* at the ICTP in Trieste, Italy, July 2012.

Entanglement Entropy and Spectra in Two Dimensional Arrays of Coupled Chains at the Galileo Galilei Institute in Firenze, Italy as part of workshop *New quantum states of matter in and out of equilibrium*, May 2012.

Thermalization in Integrable and Non-Integrable Systems, University of Amsterdam, February 2012.

Exciton Hierarchies in Semiconducting Carbon Nanotubes presented at SISSA, Trieste, Italy, December 2011.

Understanding Quantum Quenches through a Numerical Renormalization Group, as part of the workshop entitled *Quantum Quenches and Strongly Correlated Phenomena* Montauk, NY, September 2011.

Understanding Quantum Quenches through a Numerical Renormalization Group, as part of the *Workshop on Integrability and its Breaking in Strongly Correlated and Disordered Systems*, ICTP, Trieste, Italy, May 2011.

Quench Dynamics in Trapped 1-D Bose Gases, Universiteit van Amsterdam, May 10, 2011

Exciton Hierarchies in Gapped Carbon Nanotubes, Boston College, April 30, 2011.

Excitonic Hierarchies in Gapped Carbon Nanotubes presented at Nordita, Stockholm, Sweden, September 2010.

The Finite Temperature Behaviour of Quantum Spin Chains colloquium presented at the Universiteit van Amsterdam, Amsterdam, the Netherlands, February 2010.

Ferromagnetism vs. Antiferromagnetism in Double Quantum Dots: Results from the Bethe Ansatz presented at the Universiteit van Amsterdam, Amsterdam, the Netherlands, February 2010.

The Numerical Renormalization Group Approach to Strongly Correlated Systems presented at the Universiteit van Amsterdam, Amsterdam, the Netherlands, February 2009.

Ferromagnetism vs. Antiferromagnetism in Double Quantum Dots: Results from the Bethe Ansatz presented at the GGI Workshop in Low Dimensional Field Theories and Application, Florence, Italy, October 2008.

From Carbon Nanotubes to Atomic Bose Gases: A Numerical Renormalization Group Approach to Strongly Correlated Systems presented at the 2nd INSTANS Conference, Florence, Italy, September, 2008.

Low Temperature Dynamical Correlation Functions in Gapped Quantum Spin Chains presented at Laboratoire de Mathématiques et Physique Théorique de l'Université de Tours, May 2008.

Low Temperature Dynamical Correlation Functions in Gapped Quantum Spin Chains presented at the Université de Cergy-Pontoise, May 2008.

A Numerical Renormalization Group Approach to Strongly Correlated Systems presented at the Institute for Theoretical Physics, Universiteit van Amsterdam, February 2008.

Numerical Renormalization Group Approach to Strongly Correlated Systems: Study of Semiconducting Carbon Nanotubes presented at Cavendish Laboratory, Cambridge University, United Kingdom, December 2007.

A Numerical Renormalization Group Approach to Strongly Correlated Two and Three Dimensional Electron Problems presented at the Workshop on Highly Frustrated Magnets and Strongly Correlated Systems, ICTP, Trieste, Italy, August 2007.

A Numerical Renormalization Group Approach to Strongly Correlated Two and Three Dimensional Electron Problems presented at the Workshop on Low Dimensional Quantum Condensed Matter, Amsterdam, July 2007.

A Numerical Renormalization Group Approach to Strongly Correlated Two and Three Dimensional Electron Problems presented at the Canadian Association of Physicists Meeting, Saskatoon, June 2007.

A Numerical Renormalization Group Approach to Strongly Correlated Electron Problems presented at the Workshop on the Fundamental of Electronic Nanosystems, St. Petersburg, July 2006.

A Numerical Renormalization Group Approach to Strongly Correlated Electron Problems presented at the INSTANS Summer Conference on Interdisciplinary Statistical and Field Theory Approaches to Nanophysics and Low-dimensional Systems, Como, Italy, June 2006.

Kondo Physics in Double Quantum Dots presented at Yale University, March 2006.

The Integrability of Multidot Systems presented at the Workshop on Low Dimensional Quantum Condensed Matter, Amsterdam, July 2005.

The Integrability of Multidot Systems presented at the Workshop on the Fundamental of Electronic Nanosystems, St. Petersburg, June 2005.

Kondo Physics in Double Quantum Dots presented at University of Berkeley, March 2005.

Kondo Physics in Double Quantum Dots presented at Oxford University, July 2004.

The Non-Perturbative Physics of Quantum Dots presented at Purdue University, March 2004.

The Non-Perturbative Structure of Fano Resonances in Quantum Dots presented at the International Workshop on Field Theory Methods in Strongly Correlated Nanoscale Systems held Brookhaven National Laboratory, Upton, NY, August 2003.

The Non-Perturbative Role of Topology in Quantum Dots presented at Oxford University, United Kingdom, June 2003.

The Physics of Strongly Interacting Nanoscale Systems, presented at the Institute for Theoretical Physics, University of Hannover, Germany, June 2002.

Novel Kondo Physics in Quantum Dots, presented at Boston University, May 2002.

Novel Kondo Physics in Quantum Dots, presented at Rutgers University, May 2002.

The Physics of Quantum Dots, presented at the University of California, Irvine, February 2002.

Strongly Correlated Physics in Nanoscale Systems, presented at the California Institute of Technology, March 2001.

Transport in Quantum Dots, presented at the University of California, Santa Barbara, March 2001.

Strongly Correlated Physics in Nanoscale Systems, colloquium presented at the University of Toronto, March 2001.

Ballistic Transport in Haldane Gapped Spin Chains, presented at the University of Toronto, March 2001.

The Physics of Mesoscopic Systems, presented at the University of Minnesota, January 2001.

Transport Properties in Quantum Dots, presented at the Conference for Integrable Models in Condensed Matter Physics at the CRM, Université de Montréal, June 2000.

A lecture series presented at the Asian Pacific Centre for Theoretical Physics in Seoul, South Korea, May 1999:

- i) **Overview of Hubbard Ladders and Carbon Nanotubes**
- ii) **Exact Results in Hubbard Ladders and Carbon Nanotubes**
- iii) **Understanding Doped Hubbard Ladders and Carbon Nanotubes**

Strongly Correlated Physics in Hubbard Ladders and Carbon Nanotubes, presented at Princeton University, March 1999.

Strongly Correlated Physics in Hubbard Ladders and Carbon Nanotubes, presented at Brandeis University, March 1999.

Two-Leg Hubbard Ladders and Carbon Nanotubes from Integrability, presented at the Conference on Statistical Field Theory, International Centre for Theoretical Physics, Trieste, Italy, June 1998.

Purely Transmitting Defect Field Theories, presented at Princeton University, May 1997.

Impurities in Optical Fibers, colloquium presented at University of Miami, March 1997.

The Integrability of Defect Field Theories, presented at University of Miami, March 1997.

CONFERENCES ORGANIZED

Workshop on Quantum Quenches and Strongly Correlated Physics, Montauk NY 2011.

Workshop on Strong Fluctuations in Low Dimensions, Montauk NY 2008.

Workshop on Strong Correlations in Low Dimensional Transport and Dynamics, Montauk NY 2007.

Workshop on Frustrated Magnetism, Montauk NY 2004.