

Ann Berlinsky Kallin

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Personal

Born on September 11, 1985 in Vancouver, BC.

Canadian and American citizen.

Education

Ph.D. in Physics, University of Waterloo, Ontario (In Progress)

M.Sc. in Physics, University of Waterloo, Ontario (2010)

B.Sc. in Honours Physics, McMaster University, Hamilton, Ontario (2008)

Awards and Honours

Alumni Gold Medal Award (2011)

NSERC Postgraduate Scholarship (PGS D) (2011-2012)

Outstanding Achievement in Graduate Studies Award (2010)

Ontario Graduate Scholarship (2010) (Declined)

CAM Graduate Student Physics Conference Presenter Scholarship (2009)

NSERC Postgraduate Scholarship (PGS M) (2008-2010)

Ontario Graduate Scholarship (2008) (Declined)

NSERC Undergraduate Student Research Award (2008)

McMaster University Futures Fund Graduand Award (2008)

Harry Lyman Hooker Scholarship (2007)

The Boyd McLay Scholarship in Physics (2007)

NSERC Undergraduate Student Research Award (2007)

Dean's Honour List each undergraduate term, graduated with distinction (2004-2008)

The McMaster Honour Entrance Award (2004 - 2005)

International Workshops

KITP Affiliate for the program Disentangling Quantum Many-body Systems: Computational and Conceptual Approaches (2010)

Boulder Summer School on Computational and Conceptual Approaches to Quantum Many-Body Systems (2010)

Conference Talks and Posters

KITP program on Disentangling Quantum Many-body Systems, Santa Barbara, California (2010)

Invited Talk – *Computing Entanglement Scaling in Condensed Matter Ground States*

Boulder Summer School for Condensed Matter and Materials Physics, Boulder, Colorado (2010)

Invited Poster – *Measuring Renyi Entanglement Entropy in Quantum Monte Carlo Simulations*

APS March Meeting, Portland, Oregon (2010)

Talk – *Measuring Renyi Entanglement Entropy with Quantum Monte Carlo*

Waterloo Graduate Student Research Conference, Waterloo, Ontario (2010)

Talk – *Measuring Renyi Entanglement Entropy with Quantum Monte Carlo*

Candian-American-Mexican Graduate Student Physics Conference, Acapulco, Mexico (2009)

Talk – *Valence Bond and von Neumann Entanglement Entropy in Quantum Monte Carlo*

SHARCNET Research Day, Waterloo, Ontario (2009)

Poster – *Entanglement Entropy in Quantum Monte Carlo*

Canadian Undergraduate Physics Conference, Fredericton, New Brunswick (2006)

Poster – *Crystal Growth: In the Zone*

Canadian Undergraduate Physics Conference, London, Ontario (2005)

Poster – *Floating Zone Crystal Growth of High- T_c Superconductors*

Publications

1) *Anomalies in the Entanglement Properties of Square Lattice Heisenberg Models*

Ann B. Kallin, Matthew B. Hastings, Roger G. Melko, and Rajiv R. P. Singh
(Submitted to PRB)

2) *Finite-Temperature Critical Behavior of Mutual Information* [4 citations]

Rajiv R. P. Singh, Matthew B. Hastings, Ann B. Kallin, and Roger G. Melko
Phys. Rev. Lett. **106**, 135701 (2011)

3) *Finite-size scaling of mutual information in Monte Carlo simulations: Application to the spin-1/2 XXZ model*
[3 citations]

Roger G. Melko, Ann B. Kallin, and Matthew B. Hastings
Phys. Rev. B **82**, 100409(R) (2010)

4) *Measuring Renyi Entanglement Entropy in Quantum Monte Carlo* [25 citations]

Matthew B. Hastings, Ivan Gonzalez, Ann B. Kallin, and Roger G. Melko
Phys. Rev. Lett. **104**, 157201 (2010)

5) *Valence Bond and von Neumann Entanglement Entropy in Heisenberg Ladders* [21 citations]

Ann B. Kallin, Ivan Gonzalez, Matthew B Hastings, and Roger G. Melko

Phys. Rev. Lett. **103**, 117203 (2009)

6) *Diagonal and collinear incommensurate spin structures in underdoped $La_{2-x}Ba_xCuO_4$* [2 citations]

S. R. Dunsiger, Y. Zhao, B. D. Gaulin, Y. Qiu, P. Bourges, Y. Sidis, J. R. D. Copley, A. B. Kallin, E. M. Mazurek, and H. A. Dabkowska

Phys. Rev. B **78**, 092507 (2008)

Service

Outreach Instructor for a session of the UW DIRECTIONS ESTEEM Conference, an Aboriginal High School Enrichment Program (2011)

International Conference Organizer for Waterloo DMRG Winter School (2011)

Referee for Physical Review Letters, Physical Review A, Physical Review B, Physica A

Extracurricular Activities

Member of the uWaterloo Physics intramural ice hockey and ball hockey teams (2008 - Present)

Member of LOCO Roller Derby - Kitchener Chapter (2011 - Present)

Volunteer for the Tri-City Roller Girls (2011 - Present)