

# CURRICULUM VITAE

Thomas Prellberg

## PRESENT POSITION AND ADDRESS

*Reader in Applied Mathematics*  
School of Mathematical Sciences  
Queen Mary, University of London  
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## AFFILIATIONS

*Außerplanmäßiger Professor*  
Department of Theoretical Physics  
Technical University Clausthal  
38678 Clausthal-Zellerfeld, Germany

*Associate Investigator*  
Centre of Excellence for Mathematics and Statistics of Complex Systems  
The University of Melbourne  
Victoria, 3010 Australia

## PROFESSIONAL DEGREES

*Technical University Clausthal, Germany:*

Habilitation in Theoretical Physics (Dr. rer. nat. habil.), January 2002  
“Lattice Models of Interacting Polymers and Vesicles”

*Virginia Polytechnic Institute & State University (Virginia Tech), USA:*

Ph.D. in Mathematical Physics (Dr. rer. nat.), June 1991  
“Thermodynamic Formalism and Phase Transitions for Maps  
of the Interval with Indifferent Fixed Points”  
M.S. in Mathematics, M.S. in Physics (Dipl.-Math., Dipl.-Phys.)

*Technical University Braunschweig, Germany:*

“Vordiplom” in Mathematics, March 1987  
(pre Master examination)  
“Vordiplom” in Physics, September 1985  
(pre Master examination)

## PERSONAL DATA

Born November 23, 1964  
German citizen, married to US citizen, two children

## RESEARCH INTERESTS

### MATHEMATICAL PHYSICS:

- Thermodynamics of Spin Chains
- Scaling Functions for Vesicle Models
- Polymers in Restricted Geometries
- Spectral Analysis of Transfer Operators

### MATHEMATICS:

- The *Takeuchi-Prellberg-Constant*
- Iterative Functional Equations
- Asymptotic Enumerative Combinatorics
- Positivity Properties of  $q$ -Series

### THEORETICAL PHYSICS:

- Stochastic Flat-Histogram Algorithms
- Monte-Carlo Simulation of Polymers
- Phase Transitions in Polymer Systems
- Adsorbed and Collapsed Polymers
- Polymers in High Dimensions
- Micromechanical Deformation of Polymers

## TEACHING EXPERIENCE

- Semester 1, 2011/2012 (Queen Mary): Dynamical Systems
- Semester 2, 2010/2011 (Queen Mary): Differential and Integral Analysis
- Semester 2, 2009/2010 (Queen Mary): Differential and Integral Analysis
- Semester 2, 2008/2009 (Queen Mary): Differential and Integral Analysis
- Semester 2, 2007/2008 (Queen Mary): Mathematical Problem Solving
- Semester 1, 2007/2008 (Queen Mary): Calculus I
- Semester 2, 2006/2007 (Queen Mary): Mathematical Problem Solving
- Semester 1, 2006/2007 (Queen Mary): Calculus I
- Semester 2, 2005/2006 (Queen Mary): Mathematical Problem Solving
- Semester 1, 2005/2006 (Queen Mary): Complex Variables
- Semester 2, 2004/2005 (Queen Mary): Mathematical Problem Solving
- Semester 1, 2004/2005 (Queen Mary): Complex Variables
- WS 2003/2004 (Clausthal): Theoretical Physics I: Classical Mechanics
- SS 2003 (Clausthal): Non-linear Dynamics and Chaos
- WS 2002/2003 (Clausthal): Special Functions of Mathematical Physics
- SS 2002 (Clausthal): Mathematical Methods in Physics II
- WS 2001/2002 (Clausthal): Mathematical Methods in Physics I
- Spring 2000 (Syracuse): Introduction to Solid State Physics
- Fall 1999 (Syracuse): Mathematical Methods in Theoretical Physics

### ORGANISED AND SUPERVISED TUTORIALS FOR ALL CORE CURRICULUM COURSES IN THEORETICAL PHYSICS:

- Mathematical Methods I/II, Classical Mechanics, Electrodynamics, Quantum Theory I/II, Statistical Physics

## STUDENT AND POSTDOCTORAL SUPERVISION

Paul Mortimer, PhD Student, Applied Mathematics, University of London, 2011 – present

Nicholas Cleaver, PhD Student, Applied Mathematics, University of London, 2011 – present

“Walks on Graphs: From Randomness to Determinism”

Spyros Martzoukos, MPhil Student, Applied Mathematics, University of London, 2005 – 2007

“Non-Standard Period Doubling in a Piecewise Continuous Dynamical System”

Florian Großmann, Diploma thesis, Physics, Technische Universität Clausthal, 2004

Jaroslav Krawczyk, Postdoctoral Researcher, Technische Universität Clausthal, 2002 – 2004

”On the Thermodynamic Formalism for the Farey Map”

Peter S. Dodds, Master thesis, Mathematics and Physics, University of Melbourne, 1994

“Multifractals, Thermodynamic Formalism and Intermittency”

Peter S. Dodds, Honours thesis, Mathematics and Physics, University of Melbourne, 1993

## SUMMARY OF PUBLICATIONS

77 refereed publications (of these 5 publications in Phys. Rev. Lett.)

Journal of Physics A (16), Journal of Statistical Physics (10), Physical Review E (8), Physica A (8), Journal of Statistical Mechanics: theory and experiment (6), Physical Review Letters (5), Electronic Journal of Combinatorics (3), Europhysics Letters (2), Journal of Combinatorial Theory A (2), Discrete Mathematics (2), Review of Scientific Instruments, International Journal of Modern Physics C, Contributions to Discrete Mathematics, Computer Physics Communications, Communications in Mathematical Physics, European Physical Journal B, Mathematics of Computer Modelling, Nuclear Physics B, Journal of Physics: Conference Series, Discrete Mathematics and Theoretical Computer Science Proceedings, 6 publications in refereed conference proceedings

(a complete list can be found below)

## SUMMARY OF PRESENTATIONS

123 presentations, 12 posters

of these 25 invited conference talks and 2 plenary lectures

two summer school lecture series

conferences and workshops in: Australia (14), United Kingdom (13), USA (12), Germany (10), France (6), Denmark (2), Norway (2), Canada (2), Austria (2), Israel (1), Italy (1), Taiwan (1)

seminars und colloquia in: USA (23), Germany (16), United Kingdom (12), France (6), Australia (6), Canada (3), Norway (1), Poland (1), Ireland (1)

(a complete list can be found below)

## REFEREEING ACTIVITY

I have refereed for: American Mathematical Monthly, Annals of Combinatorics, Bulletin of the Institute of Combinatorics and Its Applications, Central European Journal of Physics, Communications in Mathematical Physics, Chaos Solitons & Fractals, Computer Physics Communications, Discrete Applied Mathematics, Discrete Mathematics, Electronic Journal of Combinatorics, Ergodic Theory and Dynamical Systems, Europhysics Letters, Graphs and Combinatorics, Journal of Chemical Physics, Journal of Combinatorial Theory A, Journal of Physics A, Journal of Physics: Condensed Matter, Journal of Statistical Mechanics: theory and experiment, Journal of Statistical Physics, Macromolecules, Mathematical Reviews, Modern Physics Letters B, New Journal of Physics, Nonlinearity, Oxford University Press, Physica A, Physical Review B, Physical Review E, Physical Review Letters, SIAM Journal on Discrete Mathematics, The European Physical Journal B; NSERC, "Studienstiftung des Deutschen Volkes"

## MEMBERSHIP IN PROFESSIONAL SOCIETIES

I am a member of: American Mathematical Society (AMS), International Association of Mathematical Physicists (IAMP, life-time membership since 2010), London Mathematical Society (LMS)

I was a member of: German Physical Society (DPG, until 2010), American Physical Society (APS, until 2010)

## GRANTS AND AWARDS

Associate Investigator, Centre of Excellence for Mathematics and Statistics of Complex Systems, University of Melbourne, 2004 – present

Visiting Fellow, The Australian National University, 2010

Honorary Visiting Fellow, University of Melbourne, 2010

Libra Visiting Professor of Diversity, University of Maine, 2008 (USD 15,000)

London Mathematical Society Scheme 2 Visitor Grant, 2006 (USD 2000)

E-Learning Fellowship Grant “Improving student performance with web-based learning” 2006-2007 (USD 7000)

*Außerplanmäßiger Professor*, TU Clausthal, 2005

Royal Society Conference Grant for *Counting Complexity*, 2005 (USD 3000)

Listed in *Who's Who in Science and Engineering*, 8th Edition (2005-2006)

DFG Grant “Relevance of the correct modelling of attractive and repulsive interactions in collapsing polymers: a comparative investigation of the extended Domb-Joyce model and related models,” 2002 – 2004 (USD 110,000)

DFG Conference Grant for *FPSAC 2002* (USD 1000)

DAAD Grant “Combinatorics of random structures, analysis of algorithms, and dynamical systems,” (French-German Collaborative Research Grant, Project Leader German Side) 2002 – 2003 (USD 8000)

DFG Grant “Simulation of collapsing polymers,” 2001 (USD 3000)

Honorary Research Fellow, University of Melbourne, 1999 and 2001

Euro-Conference Travel Grant, 1995 (USD 1000)

Minerva Fellowship, Weizmann Institute, 1989 – 1990

Exchange Program, Technische Universität Braunschweig – Virginia Tech, 1988 – 1989

Scholarship from the “Studienstiftung des Deutschen Volkes”, 1985 – 1991

Ranked among the top ten German High School students in the competition for the International Physics Olympiad 1982

RESEARCH TRACK RECORD

QUEEN MARY, UNIVERSITY OF LONDON, United Kingdom, School of Mathematical Sciences,  
2004 – present

Reader since 2005

Senior Lecturer until 2005

- Simulated Polymers with Competing Interactions
- Related Walks in Wedges to Chordal Crossings
- Developed an extension of the Kernel Method for non-holonomic generating functions
- Considered Enumeration of 0-1-Matrices and Line Graphs
- Studied interacting polymers adsorbed to a surface
- Worked on a number-theoretical spin chain

TECHNICAL UNIVERSITY CLAUSTHAL, Germany, Dept. of Theoretical Physics, 2000 – 2004

*Oberassistent* (Senior Lecturer w/o tenure) since 2002

*Wiss. Assistent* (Lecturer w/o tenure) until 2001

- Proved long-standing conjecture in Number Theory
- Developed new algorithm for simulation of self-avoiding walks
- Collaborated with physical chemists
- Determined the spectrum of an intermittency transfer operator
- Applied statistical mechanical methods to algorithm analysis
- Studied phase transitions in polymer systems
- Analyzed asymptotic behaviour of iterated systems

SYRACUSE UNIVERSITY, USA, Department of Physics, 1999 – 2000

Visiting Assistant Professor

- Studied depinning in a driven disordered system
- Investigated pseudo-first order polymer collapse
- Implemented stochastic enumeration algorithm

UNIVERSITY OF MANCHESTER, United Kingdom, Department of Theoretical Physics, 1996 – 1999

Research Associate

- Simulated polymer collapse
- Studied inflated vesicles
- Analyzed a driven granular system
- Investigated winding angle distributions for polymers

UNIVERSITY OF OSLO, Norway, Department of Mathematics, 1995 – 1996

Researcher (EU Postdoctoral Fellow)

- Worked on stability of Coulomb systems
- Studied generalisations of Hurwitz transformations
- Investigated pseudo-differential operators

UNIVERSITY OF MELBOURNE, Australia, Department of Mathematics, 1991 – 1994

Research Fellow

- Studied the collapse of polymers in solution
- Developed a scaling theory for a collapse transition
- Analyzed d-dimensional staircase polygons
- Solved a discrete solid-on-solid model
- Analysed combinatorial models of fluctuating membranes
- Computed transfer operator spectra for intermittent maps
- Applied asymptotic series analysis of generating functions
- Wrote software for differential approximant analysis
- Developed stochastic enumeration algorithms

VIRGINIA TECH, USA, Department of Physics, 1991

Graduate Research Assistant

- Investigated the universal behaviour of the intermittent phase transition

WEIZMANN INSTITUTE OF SCIENCE, Rehovot, Israel, 1989 – 1990

Visiting Scientist

- Related transfer operators and inducing in dynamical systems
- Extended the thermodynamic formalism to non-uniformly expanding maps
- Analysed the phase transitions for maps with indifferent fixed points

DORNIER System GmbH, Friedrichshafen, Germany, March 1988

Intern in Division of Theoretical Physics

- Calculated the reflectivity of arrays with active electronic elements
- Optimized the material parameters to minimize the reflectivity

GSSE Corporation for System Technology, Braunschweig, Germany, March 1985

Programmer

- Wrote data transmitting programs for microprocessor development systems
- Serviced a program package on-site for a test station of an assembly line

SIEMENS Research and Development Center, Erlangen, Germany, Summer 1984

Intern in Division of Technical Physics

- Restructured a program package for ultrasound computer tomography
- Implemented the menu routines of the user interface for same

SIEMENS Railroad Signal Technology, Braunschweig, Germany, Summer 1983 and March 1984

Member of Process Control System Team

- Implemented and tested an application of a single-board microcomputer
- Designed software for process control in marshalling yard control

## TEACHING AND ADMINISTRATIVE TRACK RECORD

QUEEN MARY, UNIVERSITY OF LONDON, United Kingdom, School of Mathematical Sciences, 2004 – present

Reader since 2005

Senior Lecturer until 2005

- Director of Taught Programmes (since 2011)
- Member of Senate
- Senior Tutor (2009-2011)
- Implemented Advisor-Advisee Contract
- Served on the Academic Board
- Chaired the MSc Exam Committee
- Was Postgraduate Research Student Tutor
- Joined the Undergraduate Exam Committee Team
- Acted as Undergraduate Programme Code Tutor
- Piloted e-learning approach to teaching

TECHNICAL UNIVERSITY CLAUSTHAL, Germany, Dept. of Theoretical Physics, 2000 – 2004

*Oberassistent* (Senior Lecturer w/o tenure) since 2002

*Wiss. Assistent* (Lecturer w/o tenure) until 2001

- Taught “Classical Mechanics,” Core curriculum course
- Taught “Nonlinear Dynamics and Chaos,” Textbook Strogatz
- Was elected to serve on committee for development of new university charter
- Taught “Special Functions in Mathematical Physics”
- Redesigned course contents in theoretical physics curriculum
- Taught “Mathematical Methods of Physics I/II,” Core curriculum course
- Was elected to serve on the Faculty of Mathematics and Natural Sciences
- Taught recitation sessions for various theoretical physics courses
- Was chosen as Project Leader of German-French Collaborative Research Project

SYRACUSE UNIVERSITY, USA, Department of Physics, 1999 – 2000

Visiting Assistant Professor

- Taught “Mathematical Methods of Theoretical Physics,” Textbook Arfken/Weber
- Taught “Introduction to Solid State Physics,” Textbook Meyers
- Organized seminar series in condensed matter and statistical physics
- Initiated discussion round “Physics and Philosophy” with the Philosophy department

UNIVERSITY OF MANCHESTER, United Kingdom, Department of Theoretical Physics, 1996 – 1999

Research Associate

- Taught tutorial groups for second year physics students
- Organized seminar series in theoretical physics
- Successfully completed workshop on “Group Facilitation Techniques”

UNIVERSITY OF OSLO, Norway, Department of Mathematics, 1995 – 1996

Researcher

- Conducted seminar series “Mathematical Methods in Physics”
- Presented seminar series “Introduction to Pseudo-Differential Operators and their Application in Semi-Classical Approximations”

UNIVERSITY OF MELBOURNE, Australia, Department of Mathematics, 1991 – 1994

Research Fellow

- Supervised master’s thesis “On the Thermodynamic Formalism for the Farey Map”
- Supervised honour’s thesis “Multifractals, Thermodynamic Formalism, and Intermittency”
- Lectured to 3rd and 4th year courses on “Dynamical Systems Theory and Chaos”

VIRGINIA TECH, USA, Department of Physics, 1988 – 1989

Graduate Teaching Assistant

- Taught sophomore physics labs for physics and non-physics majors
- Tutored and graded sophomore physics courses

TECHNICAL UNIVERSITY BRAUNSCHWEIG, Germany, Institutes for Mathematical and Theoretical Physics, 1987

Graduate Student Instructor

- Taught tutorial classes for graduate courses in quantum mechanics and classical field theory

PUBLICATIONS

- 85 H. Touchette, T. Prellberg, and W. Just, “Exact power spectra of Brownian motion with solid friction,” submitted to *J. Phys. A*
- 84 T. Prellberg, “From Rosenbluth Sampling to PERM - rare event sampling with stochastic growth algorithms,” submitted to R. Leidl and A. K. Hartmann (eds), *Modern Computational Science 12: Lecture Notes from the 4th International Oldenburg Summer School*, BIS-Verlag der Carl von Ossietzky Universität Oldenburg, 2012
- 83 A. L. Owczarek and T. Prellberg, “Exact Solution of a model of a vesicle attached to a wall subject to mechanical deformation,” submitted to *J. Phys. A*
- 82 A. Bedini, A. L. Owczarek and T. Prellberg, “Anomalous critical behaviour in the polymer collapse transition of three-dimensional lattice trails,” submitted to *Phys. Rev. E*
- 81 R. Brak, G. Iliev, and T. Prellberg, “An infinite family of adsorption models and restricted Lukasiewicz paths,” *J. Stat. Phys.* **145** (2011) 669-685

- 80 J. Osborn and T. Prellberg, "Exact solution of two non-crossing partially directed walks with contact interaction," in preparation
- 79 A. L. Owczarek and T. Prellberg, "Enumeration of area-weighted Dyck paths with restricted height," submitted to *Australas. J. Combin.*
- 78 J. Doukas, A. L. Owczarek and T. Prellberg, "Identification of a polymer growth process with an equilibrium multi-critical collapse phase transition: the meeting point of swollen, collapsed and crystalline polymers," *Phys. Rev. E* **82** (2010) 031103
- 77 J. Bastian, T. Prellberg, M. Rubey, and C. Stump, "Counting the number of elements in the mutation classes of  $\hat{A}_n$ -quivers," *Electron. J. Combinat.* **18** (2011) P98
- 76 A. L. Owczarek and T. Prellberg, "Exact Solution of the Discrete (1+1)-Dimensional RSOS Model in a Slit with Field and Wall Interactions," *J. Phys. A* **43** (2010) 375004
- 75 A. L. Owczarek and T. Prellberg, "A simple model of a vesicle drop in a confined geometry," *JSTAT* (2010) P08015
- 74 A. L. Owczarek and T. Prellberg, "Exact Solution of the Discrete (1+1)-Dimensional RSOS Model with Field and Surface Interactions," *J. Phys. A* **42** (2009) 495003
- 73 J. Osborn and T. Prellberg, "Forcing Adsorption of a Tethered Polymer by Pulling," *JSTAT* (2010) P09018
- 72 S. Corteel, M. Josuat-Vergès, T. Prellberg, and M. Rubey, "Matrix Ansatz, lattice paths and rook placements," *DMTCS proc.* **AK** (2009), 313-324
- 71 A. L. Owczarek and T. Prellberg, "Scaling of the atmosphere of self-avoiding walks," *J. Phys. A* **41** (2008) 375004
- 70 J. Krawczyk, A. L. Owczarek, and T. Prellberg, "A Semi-flexible attracting-segment model of two-dimensional polymer collapse," *Physica A* **389** (2010) 1619-1624
- 69 J. Krawczyk, A. L. Owczarek, and T. Prellberg, "Semi-flexible hydrogen-bonded and non-hydrogen bonded lattice polymers," *Physica A* **388** (2009) 104-112
- 68 R. Brak, P. Dyke, J. Lee, A. L. Owczarek, T. Prellberg, A. Rechnitzer, and S. G. Whittington, "A self-interacting partially directed walk subject to a force," *J. Phys. A, J. Phys. A* **42** (2009) 085001
- 67 K. M. Briggs, L. Song, and T. Prellberg, "A note on the distribution of the maximum of a set of Poisson random variables," submitted to *Statist. Probab. Lett.*
- 66 P. J. Cameron, D. Johannsen, T. Prellberg, and P. Schweitzer, "Counting defective parking functions," *Electron. J. Combinat.* **15** (2008) R92
- 65 A. L. Owczarek and T. Prellberg, "Exact solution of semi-flexible and super-flexible interacting partially directed walks," *Journal of Statistical Mechanics: theory and experiment, JSTAT* (2007) P11010
- 64 R. F. Bailey and T. Prellberg, "Decoding generalized octahedral groups and asymptotic analysis of successful error-correction," *Contrib. Discrete Math.* **7** (2012) 1-14
- 63 A. L. Owczarek, A. Rechnitzer, J. Krawczyk, and T. Prellberg, "On the location of the surface-attached globule phase in collapsing polymers," *J. Phys. A* **40** (2007) 13257-13267
- 62 P. Cameron, T. Prellberg, and D. Stark, "Asymptotic enumeration of 2-covers and line graphs," *Discrete Mathematics* **310** (2010) 230-240
- 61 E. J. Janse van Rensburg, T. Prellberg, and A. Rechnitzer, "Directed paths in a wedge," *J. Phys. A* **40** (2007) 14069-14084

- 60 E. J. Janse van Rensburg, T. Prellberg, and A. Rechnitzer, “Partially directed paths in a symmetric wedge,” *Proceedings of the 2007 International Conference on Formal Power Series and Algebraic Combinatorics*
- 59 J. Krawczyk, A. L. Owczarek, and T. Prellberg, “The competition of hydrogen-like and isotropic interactions in polymer collapse,” *Journal of Statistical Mechanics: theory and experiment*, JSTAT (2007) P09016
- 58 O. F. Bandtlow, J. Fiala, P. Kleban, and T. Prellberg, “Asymptotics of the Farey Fraction Spin Chain Free Energy at the Critical Point,” *J. Stat. Phys.* **138** (2010) 447-464
- 57 E. J. Janse van Rensburg, T. Prellberg, and A. Rechnitzer, “Partially directed walks in a wedge,” *J. Comb. Th. A* **115** (2008) 623-650
- 56 J. Krawczyk, A. L. Owczarek, T. Prellberg, and A. Rechnitzer, “A Lattice Model for Parallel and Orthogonal  $\beta$ -Sheets using Hydrogen-Like Bonding,” *Phys. Rev. E* **76** (2007) 051904; selected for *Virt. J. Biol. Phys. Res.* **14** (2007)
- 55 A. L. Owczarek, T. Prellberg, and A. Rechnitzer, “Finite-size scaling functions for directed polymers confined between attracting walls,” *J. Phys. A* **41** (2008) 035002
- 54 A. L. Owczarek and T. Prellberg, “Collapse transition of self-avoiding trails on the square lattice,” *Physica A* **373** (2007) 433-438
- 53 J. Krawczyk, T. Prellberg, A. L. Owczarek, and A. Rechnitzer, “Self-avoiding random walk with multiple site weightings and restrictions,” *Phys. Rev. Lett.* **96** (2006) 240603; selected for *Virt. J. Biol. Phys. Res.* **12** (2006)
- 52 P. Cameron, T. Prellberg, and D. Stark, “Asymptotic enumeration of incidence matrices,” *J. Phys.: Conf. Ser.* **42** (2006) 59-70
- 51 P. Cameron, T. Prellberg, and D. Stark, “Asymptotics for incidence matrix classes,” *Electron. J. Combin.* **13** (2006) R85
- 50 J. Krawczyk, A. L. Owczarek, T. Prellberg, and A. Rechnitzer, “Pulling adsorbing and collapsing polymers off a surface,” *Journal of Statistical Mechanics: theory and experiment*, JSTAT (2005) P05008
- 49 J. Krawczyk, A. L. Owczarek, T. Prellberg and A. Rechnitzer, “Layering transitions for adsorbing polymers in poor solvents,” *Europhys. Lett.* **70** (2005) 726-732
- 48 J. Krawczyk, T. Prellberg, A. L. Owczarek, and A. Rechnitzer, “Stretching of a chain polymer adsorbed at a surface,” *Journal of Statistical Mechanics: theory and experiment*, JSTAT (2004) P10004
- 47 T. Prellberg, J. Krawczyk, and A. Rechnitzer, “Polymer simulations with a flat histogram stochastic growth algorithm,” *Computer Simulation Studies in Condensed Matter Physics XVII*, pages 122-135, Springer Verlag, 2006
- 46 T. Prellberg, P. Kleban, and J. Fiala, “Cluster approximation for the Farey fraction spin chain,” *J. Stat. Phys.* **123** (2006) 455-471
- 45 T. Prellberg and J. Krawczyk, “Flat histogram version of the pruned and enriched Rosenbluth method,” *Phys. Rev. Lett.* **92** (2004) 120602; selected for *Virt. J. Biol. Phys. Res.* **7** (2004)
- 44 T. Prellberg and A. L. Owczarek, “Polymer Collapse in High Dimensions: Monte Carlo Simulation of Lattice Models,” in *Computer Simulation Studies in Condensed Matter Physics XVI*, pages 147-151, Springer Verlag, 2004
- 43 A. L. Owczarek and T. Prellberg, “Scaling near the  $\theta$ -point for isolated polymers in solution,” *Phys. Rev. E* **67** (2003) 032801
- 42 A. L. Owczarek and T. Prellberg, “Monte Carlo Investigation of Lattice Models of Polymer Collapse in Five Dimensions,” *Int. J. Mod. Phys. C* **14** (2003) 621-633
- 41 T. Prellberg and D. Stanton, “Proof of a Monotonicity Conjecture,” *J. Comb. Th. A* **103** (2003) 377-381

- 40 S. Berg, T. Prellberg, and D. Johannsmann, “Non-linear Contact Mechanics based on Ring-Down Experiments with Quartz Crystal Resonators,” *Rev. Sci. Instr.* **74** (2003) 118-126
- 39 T. Prellberg, “Scaling of Self-Avoiding Walks and Self-Avoiding Trails in Three Dimensions,” *J. Phys. A* **34** (2001) L599-L602
- 38 T. Prellberg, “Towards a Complete Determination of the Spectrum of a Transfer Operator associated with Intermittency,” *J. Phys. A* **36** (2003) 2455-2461
- 37 T. Prellberg and A. L. Owczarek, “Pseudo-First-Order Transition in Interacting Self-avoiding Walks and Trails,” *Comp. Phys. Commun.* **147** (2002) 629-632
- 36 T. Prellberg and A. L. Owczarek, “Four-dimensional polymer collapse II: Interacting self-avoiding trails,” *Physica A*, **297** (2001) 275-290
- 35 A. L. Owczarek and T. Prellberg, “Scaling of Self-Avoiding Walks in High Dimensions,” *J. Phys. A*, **34** (2001) 5773-5780
- 34 T. Prellberg, “On the Asymptotics of the Takeuchi Numbers,” in *Symbolic Computation, Number Theory, Special Functions, Physics and Combinatorics* (Development in Mathematics, vol. 4), pages 231-242, Kluwer Acad. Pub., 2001.
- 33 M. C. Marchetti, A. A. Middleton, and T. Prellberg, “Viscoelastic Depinning of Driven Systems: Mean-Field Plastic Scallop,” *Phys. Rev. Lett.* **85** (2000) 1104-1107
- 32 A. L. Owczarek and T. Prellberg, “First-order scaling near a second-order phase transition: Tricritical polymer collapse,” *Europhysics Lett.* **51** (2000) 602-607
- 31 T. Prellberg and A. L. Owczarek, “Four-dimensional polymer collapse: Pseudo-First-Order Transition in Interacting Self-avoiding Walks,” *Phys. Rev. E* **62** (2000) 3780-3789
- 30 A. L. Owczarek and T. Prellberg, “Existence of four-dimensional polymer collapse I: Kinetic growth Trails,” *Physica A* **260** (1998) 20-30
- 29 T. Prellberg and A. L. Owczarek, “On the Asymptotics of the Finite-perimeter Partition Function of Two-dimensional Lattice Vesicles,” *Commun. Math. Phys.* **201** (1999) 493-505
- 28 B. Drossel and T. Prellberg, “Particle in a Horizontally Shaken Box, Period-doubling, Chaos, and Chattering,” in *Traffic and Granular Flow*, pages 109-122, Springer Verlag, 1998.
- 27 B. Drossel and T. Prellberg, “Dynamics of a Single Particle in a Horizontally Shaken Box,” *Eur. Phys. J. B* **1** (1998) 533-543
- 26 T. Prellberg and B. Drossel, “Winding Angles for Two-dimensional Polymers with Orientation Dependent Interactions,” *Phys. Rev. E* **57** (1998) 2045-2052
- 25 T. Prellberg and B. Drossel, “Winding Angle Distribution for Two-dimensional Polymers at the  $\theta$ -point,” *Physica A* **249** (1998) 337-341
- 24 T. Prellberg, “The Statistical Mechanics of Vesicles,” *Math. Comp. Mod.* **26** (1997) 321
- 23 A. J. Guttmann, A. L. Owczarek, D. Bennett-Wood, and T. Prellberg, “Recent Developments in the Study of Walks, Polygons, and the Ising Model,” *Nucl. Phys. B* **42** (1995) 911-913
- 22 T. Prellberg, “Uniform  $q$ -Series Asymptotics for Staircase Polygons,” *J. Phys. A: Math. Gen.* **28** (1995) 1289-1304
- 21 T. Prellberg and A. L. Owczarek, “Stacking Models of Vesicles and Compact Clusters,” *J. Stat. Phys.* **80** (1995) 755-779

- 20 T. Prellberg and A. L. Owczarek, "Models of Polymer Collapse in Three Dimensions: Evidence from Kinetic Growth Simulations," *Phys. Rev. E* **51** (1995) 2142-2149
- 19 A. L. Owczarek and T. Prellberg, "The Collapse Point of Interacting Trails in Two Dimensions from Kinetic Growth Simulations," *J. Stat. Phys.* **79** (1995) 951-967
- 18 T. Prellberg and A. L. Owczarek, "Partially Convex Lattice Vesicles: Methods and Recent Results," in *Confronting the Infinite*, pages 204-214, World Scientific, 1995
- 17 A. L. Owczarek, T. Prellberg, D. Bennett-Wood, and A. J. Guttmann, "Universal Distance Ratios for Interacting Two-dimensional Polymers," *J. Phys. A: Math. Gen.* **27** (1994) L919-925
- 16 T. Prellberg and R. Brak, "Critical Exponents from Non-Linear Functional Equations for Partially Directed Cluster Models," *J. Stat. Phys.* **78** (1995) 701-730
- 15 R. Brak, A. L. Owczarek, and T. Prellberg, "Exact Scaling Behaviour of Partially Convex Vesicles," *J. Stat. Phys.* **76** (1994) 1101-1128
- 14 D. Bennett-Wood, A. L. Owczarek, and T. Prellberg, "Crossover in Smart Kinetic Growth Walks," *Physica A* **206** (1994) 283-288
- 13 T. Prellberg and A. L. Owczarek, "Manhattan Lattice  $\Theta$ -point Exponents from Kinetic Growth Walks and Exact Results from the Nienhuis  $O(n)$  Model," *J. Phys. A: Math. Gen.* **27** (1994) 1811-1826
- 12 A. L. Owczarek and T. Prellberg, "Interacting Partially Directed Walks: A Model for Polymer Collapse," Conference Proceedings of "The Second Taipei International Symposium on Statistical Physics", *Physica A* **205** (1994) 203-213
- 11 D. Bennett-Wood, R. Brak, A. J. Guttmann, A. L. Owczarek, and T. Prellberg, "Low Temperature 2D Polymer Partition Function Scaling: Series Data Analysis Results," *J. Phys. A: Math. Gen.* **27** (1994) L1-8
- 10 A. L. Owczarek, T. Prellberg, and R. Brak, "Reply to 'Exact Scaling Form for the Collapsed 2D Polymer Phase' by B. Duplantier," *Phys. Rev. Lett.* **71** (1993) 4275
- 9 A. J. Guttmann, A. L. Owczarek, and T. Prellberg, "On the Symmetry Classes of Planar Self-Avoiding Walks," *J. Phys. A: Math. Gen.* **26** (1993) 6615-6623
- 8 T. Prellberg, A. L. Owczarek, R. Brak, and A. J. Guttmann, "Finite Length Scaling of Collapsing Directed Walks," *Phys. Rev. E* **48** (1993) 2386-2396
- 7 R. Brak, A. L. Owczarek, and T. Prellberg, "A Scaling Theory of the Collapse Transition in Geometric Cluster Models of Polymers and Vesicles," *J. Phys. A: Math. Gen.* **26** (1993) 4565-4579
- 6 A. L. Owczarek, T. Prellberg, and R. Brak, "The Tricritical Behaviour of Self-Interacting Partially Directed Walks," *J. Stat. Phys.* **72** (1993) 737-772
- 5 A. L. Owczarek, T. Prellberg, and R. Brak, "New Scaling Form for the Collapsed Polymer Phase," *Phys. Rev. Lett.* **70** (1993) 951-953
- 4 A. J. Guttmann and T. Prellberg, "Staircase polygons, Elliptic integrals, Heun functions and Lattice Green functions," *Phys. Rev. E* **47** (1993) R2233-2236
- 3 A. L. Owczarek and T. Prellberg, "Exact Solution of the Discrete (1+1)-dimensional SOS Model with Field and Surface Interactions," *J. Stat. Phys.* **70** (1993) 1175-1194
- 2 T. Prellberg and J. Slawny, "Maps of Intervals with Indifferent Fixed Points: Thermodynamic Formalism and Phase Transitions," *J. Stat. Phys.* **66** (1992) 503-514
- 1 H. Harborth, P. Oertel, and T. Prellberg, "No-Three-In-Line for Seventeen and Nineteen," *Discrete Mathematics* **73** (1988-1989) 89-90

## PRESENTATIONS

- “Anomalous critical behaviour in the polymer collapse transition of lattice trails”
  - *Open Statistical Physics*, Milton Keynes, United Kingdom, March 2012
- “Dyck Paths as Vesicle Models”
  - School of Mathematics, Cardiff University, United Kingdom, February 2012
- “From Rosenbluth Sampling to PERM - rare event sampling with stochastic growth algorithms”
  - *Summerschool on “Modern Computational Science (MCS): simulation of rare and extreme events”*, Oldenburg, Germany, August 2011 (series of invited lectures and tutorials)
- “Multiple intermittency and q-state spin chains”
  - *Seminar and Workshop on “Weak Chaos, Infinite Ergodic Theory, and Anomalous Dynamics”*, MPIPKS, Dresden, Germany, July/August 2011 (invited talk)
- “Exact solution of two non-crossing partially directed walks with contact interaction”
  - *Open Statistical Physics*, Milton Keynes, United Kingdom, March 2011
- “PERM and all that - a comparison of growth algorithms”
  - Department of Theoretical Physics, Technische Universität Braunschweig, Germany, April 2011
  - *Workshop on Monte Carlo Algorithms in Statistical Physics*, Melbourne, Australia, July 2010 (invited talk)
- “The Farey fraction spin chain in a magnetic field”
  - *STATPHYS 24*, Cairns, Australia, July 2010
- “Forcing adsorption of a tethered polymer by pulling”
  - *Workshop on Statistical Physics of Lattice Paths*, Melbourne, Australia, July 2010 (invited talk)
  - *Open Statistical Physics*, Milton Keynes, United Kingdom, March 2010
- “Computing scaling functions for two-dimensional vesicle models: from generating functions to coalescing saddle point asymptotics”
  - *Workshop on Combinatorics and Mathematical Physics*, Brisbane, Australia, July 2010
  - *Maxwell Institute Colloquium*, Edinburgh, United Kingdom, December 2009 (invited talk)
- “Area-perimeter generating functions of lattice walks”
  - *Workshop on Discrete Systems and Special Functions*, Isaac Newton Institute, Cambridge, United Kingdom, July 2009 (invited talk)
- “A self-interacting partially directed walk subject to a force”
  - *100th Statistical Mechanics Meeting*, Rutgers, New Jersey, USA, December 2008
- “Walks in wedges and crossings of matchings”
  - Discrete Mathematics Seminar, University of British Columbia, Vancouver, Canada, October 2008
- “Car Parking and Combinatorics”
  - Kolloquium Mathematische Physik, Technische Universität Clausthal, Germany, August 2009
  - *AMS Sectional Meeting, Special Session on Algorithmic Probability and Combinatorics*, Vancouver, Canada, October 2008 (invited talk)
  - Combinatorics Seminar, University of Vermont, Burlington, USA, September 2008
  - Mathematics Colloquium, University of Maine, Orono, USA, September 2008
- “Combinatorial Enumeration with the Kernel Method”
  - *Summerschool on Combinatorics and Statistical Mechanics*, Erwin Schrödinger Institute, Vienna, Austria, July 2008 (series of invited lectures and tutorials)
- “Counting Defective Parking Functions”
  - Combinatorics Seminar, University of Florida, Gainesville, USA, November 2008
  - Combinatorics Seminar, Dartmouth College, Hanover, USA, September 2008
  - Combinatorics Seminar, Massachusetts Institute of Technology, Boston, USA, September 2008
  - *Workshop on Combinatorics and Statistical Mechanics*, Erwin Schrödinger Institute, Vienna, Austria, May 2008 (invited talk)

“Enumerating Walks with the Kernel Method”

- *Workshop on Statistical-Mechanics and Quantum-Field Theory Methods in Combinatorial Enumeration*, Isaac Newton Institute, Cambridge, United Kingdom, April 2008 (invited talk)

“Enumerating partially directed paths in a symmetric wedge”

- *Workshop on Combinatorial Identities and their Applications in Statistical Mechanics*, Isaac Newton Institute, Cambridge, United Kingdom, April 2008 (invited talk)
- *From Higman-Sims to Urysohn: a random walk through groups, graphs, designs, and spaces*, Ambleside, United Kingdom, August 2007 (poster)
- Kolloquium Mathematische Physik, Technische Universität Clausthal, Germany, April 2007

“The Mathematics of the Casimir Effect”

- Sigma Club (philosophy of physics seminar), London School of Economics, United Kingdom, June 2010
- Physics Colloquium, University of Maine, Orono, USA, September 2008
- *Annual Lectures*, School of Mathematical Sciences, Queen Mary, United Kingdom, February 2007 (invited talk)

“The Farey Fraction Spin Chain: Effects of an External Field”

- Department of Mathematics and Statistics, University of Melbourne, Australia, September 2007
- *LMS Durham Symposium: Dynamical Systems and Statistical Mechanics*, Durham, United Kingdom, July 2006 (invited talk)

“Simulating Models of Polymer Collapse”

- *STATPHYS 23*, Genoa, Italy, July 2007 (poster)
- *Workshop on Sampling Paths in Molecular Simulation*, Université d’Orsay Paris-Sud, France, November 2006 (invited talk)
- *16. Workshop on Lattice Field Theory and Statistical Physics*, Coventry, United Kingdom, June 2006 (invited talk)
- School of Computational Science, FSU, Tallahassee, USA, April 2006

“Combinatorial Enumeration of Two-Dimensional Vesicles - a Review”

- *Combinatorics and Statistical Mechanics Meeting*, London, United Kingdom, November 2005 (invited talk)

“Asymptotic enumeration of incidence matrices”

- Department of Mathematics, Technische Universität Clausthal, Germany, September 2005
- *Counting Complexity: An International Workshop on Statistical Mechanics and Combinatorics*, Dunk Island, Australia, July 2005 (invited talk)

“Polymer simulations with a new Monte-Carlo algorithm”

- *Workshop on Rugged Free Energy Landscapes*, CECAM Lyon, France, June 2005 (invited talk)
- Theoretical Condensed Matter Seminar, University of Oxford, United Kingdom, February 2005
- *94th Statistical Mechanics Meeting*, Rutgers, New Jersey, USA, December 2004 (invited talk)
- *Symposium “Theorie der Polymere an Grenzflächen,”*, IPF Dresden, Germany, November 2004 (invited talk)
- Applied Mathematics Seminar, Open University, Milton Keynes, United Kingdom, July 2004
- Kolloquium in Theoretical Physics, Technische Universität Darmstadt, Germany, May 2004

“From parabolic fixed points to asymptotic enumeration”

- *Workshop on Holomorphic Dynamics*, Warwick, United Kingdom, December 2004

“Cluster Approximation for the Farey Fraction Spin Chain”

- Dynamical Systems Seminar, Manchester, United Kingdom, October 2005
- Department of Mathematics, Universität Bielefeld, Germany, September 2005
- Dynamical Systems Seminar, Warwick, United Kingdom, January 2005
- Center for Nonlinear Science, Georgia Tech, USA, February 2004

“A flat histogram stochastic growth algorithm”

- *Recent Developments in Computer Simulation Studies*, Athens, Georgia, USA, February 2004 (invited talk)
- Theoretical Physics, Hahn-Meitner-Institut, Berlin, Germany, January 2004
- Institute for Theoretical Physics, Georg-August-Universität, Göttingen, Germany, January 2004

- “Monotonicity of Partition functions”
- Department of Mathematics, Royal Holloway, University of London, United Kingdom, October 2004
  - Department of Mathematics, Ernst-Moritz-Arndt-Universität, Greifswald, Germany, September 2003
- “New Developments in Stochastic Growth Algorithms”
- *92nd Statistical Mechanics Meeting*, Rutgers, New Jersey, USA, December 2003
  - *Monte Carlo in Complex Systems*, AMSI, Australia, November 2003 (invited talk)
  - INRIA Rocquencourt, Versailles, France, October 2003
  - Department of Physics, University of Maine, Orono, USA, July 2003
  - John-Von-Neumann Institute for Computing, FZ Jülich, Jülich, Germany, May 2003
  - *Lattice Models of Polymers*, Banff International Research Station, Canada, May 2003 (invited talk)
- “Monte Carlo Investigation of Lattice Models of Polymer Collapse in High Dimensions”
- Department of Physics, University of Florida, Gainesville, USA, March 2003
  - *APS March Meeting*, Austin, USA, Texas, March 2003
  - *Recent Developments in Computer Simulation Studies*, Athens, Georgia, USA, February 2003
  - Computational Science and Information Technology, FSU, Tallahassee, USA, February 2003
- “A proof of the Monotonicity Conjecture by Friedman, Joichi, and Stanton”
- *Conference on Number Theory and Combinatorics in Physics*, Gainesville, USA, March 2003 (invited talk)
  - *Kolloquium über Kombinatorik*, Magdeburg, Germany, November 2002
- “Spectral Analysis of Transfer Operators associated with Intermittency”
- Department of Mathematics, University of Florida, Gainesville, USA, March 2003
  - *APS March Meeting*, Austin, USA, Texas, March 2003
  - Center for Nonlinear Science, Georgia Tech, USA, February 2003
  - Université de Caen, France, September 2002
- “Combinatorial Enumeration of Two-Dimensional Vesicles - a Review”
- INRIA Rocquencourt, Versailles, France, September 2002
- “On the Asymptotic Analysis of Formal Power Series Solutions of a Class of Functional Equations”
- Department of Mathematics, Heriot-Watt University, Edinburgh, United Kingdom, October 2002
  - *FPSAC 2002*, Melbourne, Australia, July 2002 (invited plenary talk)
  - Department of Mathematics, University of Florida, Gainesville, USA, March 2002
- “Pseudo-First-Order Transition in Interacting Self-avoiding Walks and Trails”
- *CCP 2001*, Aachen, Germany, September 2001 (poster)
- “On the Asymptotic Analysis of a Class of Linear Recurrences”
- INRIA Rocquencourt, Versailles, France, September 2002
  - Department of Mathematics and Statistics, University of Melbourne, Australia, April 2001
  - *Kolloquium über Kombinatorik*, Braunschweig, Germany, November 2000
- “Viscoelastic Depinning of Driven Systems”
- Department of Physics, University of Manchester, United Kingdom, October 2002
  - *APS March Meeting*, Minneapolis, Minnesota, USA, March 2000
  - *82nd Statistical Mechanics Meeting*, Rutgers, New Jersey, USA, December 1999
- “First-order scaling near a second-order phase transition: Tricritical polymer collapse”
- John-Von-Neumann Institute for Computing, FZ Jülich, Jülich, Germany, September 2000
  - Department of Physics, University of Rochester, Rochester, New York, USA, February 2000
  - Department of Physics, Clarkson University, Potsdam, New York, USA, October 1999
  - Department of Physics, Syracuse University, Syracuse, New York, USA, September 1999
- “Partition Function Asymptotics for Two-Dimensional Vesicles”
- *Symbolic Computation Conference*, Gainesville, Florida, USA, November 1999 (invited talk)
  - *STATPHYS 20*, Paris, France, July 1998 (poster)

- “Asymptotics of Takeuchi Numbers”
- Department of Mathematics, York University, Toronto, Canada, October 1999
  - Department of Mathematics, Royal Holloway & Bedford College, United Kingdom, February 1998
  - Department of Mathematics and Statistics, University of Melbourne, Australia, March 1998
- “Winding Angles for Two-Dimensional Oriented Polymers and Theta-Point Universality”
- *STATPHYS 20*, Paris, France, July 1998
- “Dynamics of a Single Particle in a Horizontally Shaken Box”
- Department of Physics, University of Florida, Gainesville, USA, July 1998
  - Institut für Experimentalphysik, Universität Magdeburg, Germany, April 1998
  - HLRZ, Forschungszentrum Jülich, Germany, November 1997
  - Dept. of Engineering Mathematics, University of Bristol, United Kingdom, November 1997
- “Winding Angle Distributions for Oriented Two-Dimensional Polymers”
- *Statistical Mechanics Conference*, King’s College London, United Kingdom, June 1997
  - *Condensed Matter Workshop*, University of Birmingham, United Kingdom, May 1997 (poster)
  - *Physics of Complex Systems*, Bar Ilan University, Israel, April 1997 (poster)
- “Combinatorial Enumeration of Polyominoes”
- *Probability and Statistical Mechanics*, BRIMS, Bristol, United Kingdom, November 1996 (invited talk)
  - Department of Mathematical Physics, University College Dublin, Ireland, May 1996
- “The Statistical Mechanics of Vesicles”
- INRIA Rocquencourt, Versailles, France, October 1995
  - *Physique et Combinatoire*, CIRM Luminy, Marseille, France, March 1995 (invited talk)
  - Matematisk Felleskollokvium, University of Oslo, Oslo, Norway, March 1995
  - *59. Frühjahrstagung der DPG*, Berlin, Germany, March 1995 (poster)
- “The Tricritical Scaling Function of Partially Directed Vesicles”
- INRIA Rocquencourt, Versailles, France, October 1995
- “Uniform q-Series Asymptotics for Staircase Polygons”
- Department of Mathematics, University of Florida, Gainesville, USA, June 1995
  - Mathematisches Kolloquium, Technische Universität Braunschweig, Germany, November 1994
  - Department of Mathematics, University of York, Toronto, Canada, November 1994
  - Department of Mathematics, Pennsylvania State Univ., College Park, USA, November 1994
  - Department of Mathematics, University of South Florida, Tampa, USA, October 1994
  - Department of Physics, University of Florida, Gainesville, USA, October 1994
- “The Spectrum of an Intermittency Transfer Operator”
- *Dynamics Days*, Melbourne, Australia, June 1994 (with P. Dodds)
- “Critical Exponents from Non-Linear Functional Equations”
- *Confronting the Infinite: Mathematical Physics at Adelaide*, Australia, February 1994
- “ $\Theta$ -point Trails and Lorentz Lattice Gas Models”
- SCRI, Florida State University, Tallahassee, USA, January 1994
  - Department of Physics, University of New South Wales, Sydney, Australia, November 1993
  - *Statistical Mechanics Meeting*, Canberra, Australia, November 1993
- “Kinetic Growth Walks and Polymer Collapse”
- Department of Mathematics, LaTrobe University, Melbourne, Australia, December 1993
- “Interacting Partially Directed Self-Avoiding Walks: An Exact Solution of a Collapse Transition”
- *The Second Taipei International Symposium on Statistical Physics*, Taipei, Taiwan, August 1993
  - *Combinatorial Workshop*, Bordeaux, France, June 1993
  - *The Lars Onsager Symposium*, Trondheim, Norway, June 1993
  - Department of Theoretical Physics, University of Tübingen, Germany, July 1993
  - Department of Mathematical Physics, Nikolas Kopernikus Univ., Torun, Poland, June 1993
  - Department of Mathematics, University of Adelaide, Australia, May 1993
  - *Fundamental Problems in Statistical Mechanics VIII*, Altenberg, Germany, July 1993 (poster)

- “Solid-on-Solid Model of Wetting: Exact Solution with  $q$ -series”  
 – *The Lars Onsager Symposium*, Trondheim, Norway, June 1993 (poster)
- “Staircase Polygons, Elliptic Integrals, Heun Functions and Lattice Green Functions”  
 – *29th Australian Applied Mathematics Conference*, Hahndorf, Australia, February 1993
- “Exact Solution of the Discrete (1+1)-dimensional SOS Model with Field and Surface Interactions”  
 – *Statistical Mechanics Meeting*, Melbourne, Australia, November 1992  
 – *STATPHYS 18*, Berlin, Germany, August 1992 (poster)  
 – *The State of Matter*, Copenhagen, Denmark, July 1992 (poster)
- “Phase Transitions and Critical Exponents for Maps of Intervals with Indifferent Fixed Points”  
 – *STATPHYS 18*, Berlin, Germany, August 1992  
 – *10th National Congress of the AIP*, Melbourne, Australia, February 1992  
 – *The State of Matter*, Copenhagen, Denmark, July 1992 (poster)
- “Exact Solutions of Directed Walk and Polygon Models:  $q$ -Bessel Functions, Continued Fractions, and Asymptotics”  
 – Department of Mathematical Physics, Technische Universität Clausthal, Germany, August 1992  
 – Department of Theoretical Physics, Technische Universität Braunschweig, Germany, August 1992
- “Thermodynamic Formalism, Inducing, and Phase Transitions for Maps of Intervals with Indifferent Fixed Point”  
 – *Statistical Mechanics Meeting*, Canberra, Australia, November 1991  
 – *64th Statistical Mechanics Meeting*, Rutgers, New Jersey, USA, December 1990

## OTHER ACTIVITIES

- “Experiences with E-Learning in the Teaching of Calculus”  
 – Mathematics Colloquium, University of Maine, November 2008  
 – *E-learning Case Studies*, Queen Mary, University of London, March 2008
- “Automatic Assessment and Feedback”  
 – *Learning and Teaching Day*, Queen Mary, University of London, November 2007
- “Improving Student Performance with Web-based Learning and Assessment”  
 – *Learning and Teaching Day*, Queen Mary, University of London, November 2007 (poster)
- LDSG Workshop on Symbolic Dynamics and Number Theory in Statistical Mechanics*  
 – Queen Mary, University of London, February 2006 (organizer)
- Oxford-Warwick-London Workshop on Combinatorics and Statistical Mechanics*  
 – Queen Mary, University of London, November 2005 (organizer)
- “An Interview with a German Physicist”  
 – Radio Interview with SBS Australia, July 2002