

CURRICULUM VITAE

PERSONAL DETAILS

Full Name and Title: Dr. rer. nat. Stefan Adams, Associate Professor (Reader)

Date of Birth: 04.08.1968 in Göttingen, Germany; Citizenship: Germany

Marital status: Married; three children; **Residence:** 5 Borrowell Terrace, CV8 1ER Kenilworth, UK

Department: Mathematics, University of Warwick

Title of current appointment: Associate Professor (Reader)

Education/Qualifications:

Diploma (MSc) in Physics (University of Göttingen, Göttingen, Germany, 04.11.1995)

Diploma (MSc) in Mathematics (University Hagen, Hagen, Germany, 05.05.1998)

PhD (Dr. rer. nat.) University of Munich, Munich, Germany, (03.08.2000)

Postgraduate Certificate in Academic and Professional Practice, University of Warwick (08.12.2008)

Offer for Full Professorship TU Darmstadt, Germany, 20.06.2011. Offer declined 19.07.2011.

Appointments held:

- | | |
|---------------------|---|
| 04.11.95 - 05.05.98 | Supervisor/teaching assistant, University of Göttingen, Germany
[<i>student supervisions, marking of homework sheets; support classes</i>] |
| 06.05.98 - 31.12.99 | Teaching assistant, University Hagen, Germany
[<i>student supervisions, marking of homework sheets and exams; support classes</i>] |
| 01.01.00 - 31.03.01 | Teaching assistant & lecturer, University of Munich, Germany
[<i>student supervisions, marking of homework sheets; support classes</i>] |
| 01.04.01 - 30.09.02 | Research fellow, Technical University Berlin, Germany
[<i>conductor of independent own research, workshop and seminar organisation</i>] |
| 01.10.02 - 30.11.03 | Lecturer, Technical University Berlin, Germany
[<i>university lecturer; student examinations (oral and written)</i>] |
| 01.12.03 - 30.09.04 | Postdoctoral researcher, Dublin Institute for Advanced Studies, Dublin, Ireland |
| 01.01.04 - 30.06.04 | Lecturer, University College Dublin, Dublin, Ireland
[<i>university lecturer; student examinations (oral and written); independent research</i>] |
| 01.10.04 - 31.08.07 | Research assistant and habilitant, Max Planck Institute for Mathematics
in the Sciences, Leipzig, Germany |

[university lecturer; workshop organisation; independent research; grant applications]

01.09.07 - 30.09.10 Assistant Professor Warwick, United Kingdom

01.10.10 - 30.09.11 Associate Professor Warwick, United Kingdom

01.10.10. - Associate Professor - Reader Warwick, United Kingdom

*[PhD and MSc student advisers; academic teacher; student examinations;
conductor of independent research; design and organisation of lecture courses;
workshop organisation; principal investigator for research grants; lecturer]*

Membership of learned or professional societies:

Member of *Deutsche Mathematiker Vereinigung e. V.*

Member of the *American Mathematical Society*

Member of the *Irish Mathematical Society*

TEACHING

Departmental Duties:

	Length of Course (Contact hours)	Number of Students (approx) ug/pg
Lecture Course (MA923) Advanced Topics in Analysis, Probability and Statistics - Entropy, Large Deviations, and Statistical Mechanics	30	12 pg
Lecture Course TCC - Large deviations and Statistical Mechanics	30	15 pg
Lecture Course Markov processes and percolation (MA3H2)	30	20 ug
Tutorials 6 groups a 4 students = 1 tutee	30	24 ug
TOTAL	120	

Research Supervision:

Individual	Start Date	Qualification aimed for	Anticipated Completion Date	Individual/Joint Supervisor
Brendan Donnelly	01.10.2009	MMath 4th project	June 2010	Individual
Tessa Vorster	01.10.2010	MMath 4th project	June 2011	Individual
Owen Daniel	01.10.2010	MSc Maths	Sept 2011	Individual
Michael Eyers	01.05.2011	MSc (MASDOC)	Sept 2011	Individual
Don Praveen	01.05.2011	MSc (MASDOC)	Sept 2011	Individual
Tessa Colledge	01.10.2011	MSc (MASDOC)	Sept 2012	Individual
Simon Bignold	01.10.2011	MSc (MASDOC)	Sept, 2012	joint with C. Ortner
Owen Daniel	01.10.2011	MSc (MASDOC)	Sept 2012	Individual
William Nollett	01.10.2009	PhD	July 2013	Individual
Michael Eyers	01.10.2011	PhD (MASDOC)	Sept 2014	Individual
Owen Daniel	01.10.2012	PhD (MASDOC)	Sept 2015	Individual
Alexander Kister	01.10.2012	PhD (MASDOC)	Sept 2015	Individual

Number of successful research students since 2007: 8

Number of unsuccessful research students since 2007: 0

PhD students starting October 2012:

Owen Daniel

Alexander Kister

Other research supervision:

Jointly with C. Ortner - organisation of a MASDOC research study group on '*Multiscale Materials*' in 2011/2012, bi-weekly meetings of 2 hours each, term 1-3; and participation in the MASDOC summer retreat May 2012.

RESEARCH

Publications:

Unless indicated otherwise the personal contribution = 100% divided by the number of authors

- [1] S. ADAMS, *Thermodynamic limit for systems with external fields*, (in German) diploma thesis (degree dissertation) in Physics, 110 pages, Georg-August-Universität Göttingen (1995).
- [2] S. ADAMS, *Upper semi continuity of the attractor sets of dynamical systems of semi-linear parabolic equations*, (in German) diploma thesis (degree dissertation) in Mathematics, 101 pages, Fernuniversität Hagen (1998).
- [3] S. ADAMS, *Vollständige Äquivalenz der Gibbsensembles für eindimensionale Markovsysteme*, (in German) Dissertation, 108 pages, Fakultät für Mathematik der Ludwig-Maximilians-Universität München (2000).
- [4] S. ADAMS, *Equivalence of the microcanonical and the grandcanonical ensemble in the one-dimensional Ising model with Fibonacci-numbers*, (in German) University of Munich Publications **gk-0010/68**, 23 pages, <http://www.ams.org/global-preprints/dept-server.html>, (2000).
- [5] S. ADAMS, *Complete Equivalence of the Gibbs Ensembles for One-Dimensional Markov Systems*, Journal of Statistical Physics, Vol. **105**, Nos. 5/6, 879–908 (2001).
- [6] S. ADAMS and J.B. BRU, *A new theory of superfluidity*, DIAS-STP-03-14, 30 pages, review article, (2003).
- [7] S. ADAMS and J.B. BRU, *Critical Analysis of the Bogoliubov Theory of Superfluidity*, Physica A **332**, 60–78 (2004).
- [8] S. ADAMS and J.B. BRU, *Exact solution of the AVZ-Hamiltonian in the grandcanonical ensemble*, Ann. Henri Poincaré **5**, 405–434 (2004).
- [9] S. ADAMS and J.B. BRU, *New Microscopic Theory of Superfluidity at all Temperatures*, Ann. Henri Poincaré **5**, 435–476 (2004).
- [10] C. FAN, S. ADAMS and M. REISSLEIN, *The $FT^\Lambda - FR^\Lambda$ AWG Network: A Practical and Efficient Single-hop Metro WDM Network for Uni- and Multicasting*, IEEE/OSA Journal of Lightwave Technology, Vol. **23**, NO. 3, 937–954, (2005).
- [11] M. HERZOG, S. ADAMS and M. MAIER, *Proxy stripping: a performance-enhancing technique for optical metropolitan area ring networks*, Journal of optical Networking, Vol. **4**, No. 7, 400–431 (2005).**(45%)**
- [12] T. CHEN, M. SORTAIS, G. SCHÄFER, S. ADAMS, C. FAN and A. WOLISZ, *Performance analysis of a Denial of Service protection scheme for optimized and QoS-aware handover*, Computer Networks **49**, 449–464 (2005).**(25%)**
- [13] S. ADAMS, W. KÖNIG and J.B. BRU, *Large deviations for Interacting Brownian Particles and Paths in Trap Potentials*, Ann. Probab. **34**, No. 4, 1370-1422 (2006).
- [14] S. ADAMS, W. KÖNIG and J.B. BRU, *Large systems of path-repellent Brownian motions in a trap at positive temperature*, Electronic Journal of Probability Vol. **11**, 460-485, (2006).
- [15] S. ADAMS, *Mathematical Statistical Mechanics*, Communications of the Dublin Institute for Advanced Studies Series **A**, No. 30, ISSN 0070-7414, 89 pages, (2006).

- [16] S. ADAMS and T. DORLAS, *C*-algebraic approach to the Bose-Hubbard model*, Journal of Mathematical Physics 48, 103304-(1-14) (2007).
- [17] S. ADAMS and W. KÖNIG, *Large deviations for many Brownian bridges with symmetrised initial-terminal condition*, Probab. Theory Relat. Fields Volume **142**, Numbers 1-2, 79-124, (2008).
- [18] S. ADAMS and T. DORLAS, *Asymptotic Feynman-Kac formulae for large symmetrised systems of random walks*, Annals de l'institut Henri Poincaré (B) Probabilités et Statistique, **44**, 837-875 (2008).
- [19] S. ADAMS and W. KÖNIG, *Interacting Brownian motions and the Gross-Pitaevskii formula*, Analysis and Stochastics of Growth Processes, LMS, Oxford University Press, 79-124, (2008).
- [20] S. ADAMS, *Large deviations for empirical measures in cycles of integer partitions and their relation to systems of Bosons*, Analysis and Stochastics of Growth Processes, LMS, Oxford University Press, 148-172, (2008).
- [21] S. ADAMS, *Large deviations for empirical path measures in cycles of integer partitions*, Communications of the Dublin Institute for Advanced Studies **A**, No 32, 28 pages, (2010).
- [22] S. ADAMS, *Gradient Models with Non-Convex Interactions*, in ICMP09 Proceedings, ed.: P. Exner, World Scientific, 352-356, (2010).
- [23] S. ADAMS, A. COLLEVECCHIO and W. KÖNIG, *The free energy of non-dilute many-particle systems*, Annals of Probability Vol. **39**, No. 2, 683–728, (2011).
- [24] S. ADAMS, N. DIRR, M. PELETIER and J. ZIMMER, *From a large-deviations principle to the Wasserstein gradient flow: a new micro-macro passage*, Communications of Mathematical Physics **307** Number 3, 791–815, (2011).
- [25] S. ADAMS, R. KOTECKÝ and S. MÜLLER, *Finite range decomposition for families of gradient Gaussian measures*, J. Funct. Anal. **264**, 169-206 (2013).
- [26] S. ADAMS, N. DIRR, M. PELETIER, J. ZIMMER, *Large deviations and gradient flows*, to appear in Phil. Trans A, accepted 15th October (2012), arXiv:1201.4601 (2012).

Submitted:

- [27] S. ADAMS, R. KOTECKÝ and S. MÜLLER, *Strict convexity of the surface tension for non-convex potentials*, submitted, 124 pages, (2012).
- [28] S. ADAMS, *Gaussian correlations for non-convex potentials*, to be submitted March (2013).
- [29] S. ADAMS, M. DOBSON and C. ORTNER, *On Assessing the Accuracy of Defect Free Energy Computations*, to be submitted March (2013).

In preparation:

- [30] S. ADAMS and J.L. LEBOWITZ, *Fluctuations of global random variables under conditional Gibbs distributions*, in preparation (2013).
- [31] S. ADAMS, *Random Field of Gradients*, manuscript for Springer Lecture notes in Mathematics, in preparation (2013).
- [32] S. ADAMS and H.O. GEORGII, *A sling-shot model for Brownian bridges*, in preparation (2013).
- [33] S. ADAMS and W. KÖNIG, *The condensate via large deviation principles*, in preparation (2013).

- [34] S. ADAMS, T. KUNA and F. THEIL, *Density functional theory - a mathematical approach*, in preparation (2013).
- [35] S. ADAMS, I. MEROLA and E. PRESUTTI, *An edge based formalism for random permutations*, in preparation (2013).
- [36] S. ADAMS and D. BRYDGES, *A variational infinite Laplace method for renormalisation group methods*, in preparation (2013/2014).
- [37] S. ADAMS and J.D. DEUSCHEL, *Scaling limits towards Gaussian free fields for non-convex potentials*, in preparation (2013/2014).
- [38] S. ADAMS and C. ORTNER, *Defect Free energy for dimension $d \geq 2$* , in preparation (2013/2014).

Conference Proceedings:

- [1] S. ADAMS, *Convergence of conditional Gibbs measures and the Equivalence of the microcanonical and grandcanonical Gibbs ensemble for the Ising-Model*, 3 pages, Workshop STOCHASTIC MODELS FROM STATISTICAL PHYSICS at EURandom, Eindhoven, April (1999).
- [2] S. ADAMS, *Convergence of Conditional Gibbs measures and the Equivalence of the Gibbs ensembles*, German Open Conference on Stochastic Hamburg 2000, 26–29, (2000).
- [3] S. ADAMS, *About large deviations for the field of gradients and their thermodynamic properties*, German Open Conference on Stochastic Magdeburg 2002, 95–97 (2002).
- [4] C. FAN, M. REISSLEIN and S. ADAMS, *The $FT^\Lambda - FR^\Lambda$ AWG Network: A Practical and Efficient Single-hop Metro WDM Network for Uni- and Multicasting*, IEEE INFOCOM Proceedings, 502–513, Hongkong (2004).
- [5] T. CHEN, G. SCHÄFER, G. FAN, S. ADAMS and A. WOLISZ, *Denial of Service Protection for Optimized and QoS-aware Handover Based on Localized cookies*, 5th European Wireless Conference, Barcelona, 155–161 (2004).
- [6] S. ADAMS, *Large deviations for the field of gradients and their thermodynamic properties*, workshop *Phasenübergänge*, Oberwolfach Reports, Vol 1, 1591–1594 (2004).
- [7] S. ADAMS, *Large deviations for systems of interacting Bosons in trap potentials*, German Open Conference on Stochastic 2006, 115–116 (2006).
- [8] S. ADAMS, *Symmetrised Brownian motions and their application to Boson systems*, workshop *Multiscale and Variational Methods in Material Science and Quantum Theory of Solids*, Oberwolfach reports Vol 4, N0. 1, 4 pages, (2007).
- [9] S. ADAMS, *Convexity of the surface tension for non-convex potentials*, GOCPS Aachen, 2 pages, (2008).
- [10] S. ADAMS, *Convexity of the surface tension for non-convex potentials*, workshop *Interplay of Analysis and Probability in Physics*, 5 pages, Oberwolfach, (2008).
- [11] S. ADAMS, *Gradient Models with non-convex interactions*, Proceedings of the XVI ICMP, Prague, 5 pages, (2009).
- [12] S. ADAMS, *Free energy of interacting Bosons*, Oberwolfach workshop *Phase transitions*, 5 pages, June 2010, Oberwolfach reports (2010).
- [13] S. ADAMS, *RANDOM FIELD OF GRADIENTS*, IMS 2010, August 9-13, 2 pages, Gothenburg, Sweden, (2010).

Support from Research Grants and Contracts:

Source of Funds	Title of Project	Duration	Starting Date	Total Value	Names of Other holders	PI
DFG (German Science Foundation)	Probabilistic Interpretation of the Gross-Pitaevskii formula	18	01.11.2004	3600 €		Adams (AD 194/1-3)
DFG (German Science Foundation)	Interacting Brownian motions and many-body systems	36	01.02.2006	160000 €	W. König M. Salmhofer	König/(Adams) (DFG 718)
DFG (German Science Foundation)	Cauchy-Born rule at positive temperature	36	01.02.2006	160000 €	J.D. Deuschel R. Kotecký S. Müller	Deuschel (DFG 718)
RDF	Gradient Models & Elasticity	6	15.01.2008	3500 £		Adams
DFG	Gradient Models workshop contribution	1	01.06.2008	2000 £		Adams
LMU University of Munich	workshop contribution	1	01.07.2009	1500 €	Merkl	Adams
LMU University of Munich	travel	1	01.07.2009	1000 €		Adams
Microsoft Research	Mathematics of Phase transitions workshop contribution	1	01.11.2010	2500 \$	Ueltschi	Adams
DFG	Mathematics of Phase transitions workshop contribution	1	01.11.2009	3000 £		Adams
EPSRC	Random Fields of Gradients	24	01.07.2010	101720 £		Adams

ADMINISTRATION AND SERVICE

2012:

- Organisation of the 'Statistical Mechanics Seminar' at Warwick.
- Organisation of Symposium workshop '*At the Frontier of Analysis and Probability*', Monday 3 - Friday 7 September 2012.
- Co-PI of the EPSRC Symposium proposal 2013/2014. Submission June 2012.
- Organisation of Symposium workshop '*Large Scale Behaviour of Random Spatial Models*', Monday 28 May - Friday 1 June 2012.

2011:

- Organisation of the 'Statistical Mechanics Seminar' at Warwick.
- Organisation of the workshop '*Gradient Random Fields*' at Banff Research Station, Alberta-Canada, 30.-5.-06.-6.2011, successful grant application in Canada with M. Biskup (UCLA) and R. Kotecký.

2010:

- Submission of EPSRC First Grant February 2010 (value 125k£), grant received June 2010.
- Organisation plenary session at the *German Open Conference on Probability and Statistics*, Leipzig, Germany, 2nd-5th March 2010, speaker: Geoffrey Grimmett (Cambridge).

2009:

- Submission (with Roman Kotecký) EPSRC standard response mode grant (value 700k£) July 2009.
- Organisation of the *Conference in honour of Hans-Otto Georgii* at Ludwig-Maximilians Universität München, Munich, Germany, 17th-18th July 2009.
- Organisation (with Daniel Ueltschi) of the international meeting 'Mathematics of Phase Transitions: Past, Present, Future' at the University of Warwick, Thursday 12 - Sunday 15 November 2009.
- Organisation 'Statistical Mechanics Seminar' at Warwick (together with Roman Kotecký, Daneil Ueltschi).

2008:

- Organisation MIR Warwick day, 04.02.2008 (together with Stefan Grosskinsky).
- Initiation and organisation of a UK researcher group 'Analysis and Probability theory'.
- Organisation (with Roman Kotecký) of Warwick workshop 'Gradient Models and Elasticity', 09.06.-12.06.2008.
- Successful application for Mini-workshop at Mathematical Research Institute Oberwolfach together with M. Biskup (Los Angeles) and R. Seiringer (Princeton), title: Mathematical approaches to collective phenomena in large quantum systems, date: 31.08.-06.09.2008, Mini-workshop (0836b).
- Referee / review - reports for *Communications of Mathematical Physics*, *Journal of Statistical Physics*, *Annals Henri Poincaré*, *International Journal of Non-linear Mechanics*, *Electronic Communications in Probability*, *Electronic Journal of Probability*, *Probability and Related Fields*.

NATIONAL AND INTERNATIONAL RECOGNITION:

- DIES ACADEMICUS - 1998: Award Price (500 EURO) from University of Hagen for the best diploma thesis in mathematics
- 2004 & 2005 Scholarship Award at Dublin Institute for Advanced Studies (20000 € each year)
- Invitation for conference talk at the ICMP 2009 in Prague about the subject of [22], [25] and [27].

Date Curriculum Vitae Prepared: 12.02.2013

Stefan Adams