CURRICULUM VITAE

Helmut G. Katzgraber
Institut für Theoretische Physik
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BIOGRAPHICAL DATA

Date and Place of Birth	July 7, 1972, Lima, Perú
Citizenship	Peruvian/Austrian

EDUCATION

Ph.D. in Physics 06/1998 – 09/2001
University of California Santa Cruz (USA)
Advisor: Prof. A. Peter Young

M.S. in Physics 10/1997 – 06/1998
University of California Santa Cruz (USA)
Advisor: Prof. A. Peter Young

Diploma in Physics 10/1992 – 04/1997
ETH Zürich (Switzerland)
Advisor: Prof. G. Blatter
Awards: Diploma with distinction (*summa cum laude*),
recipient of the Pólya Prize

Military Service 01/1992 – 09/1992
Österreichisches Bundesheer (Austria)
Award: Medal for outstanding service

German Bachelors Degree 03/1989 – 12/1991
Colegio Alexander von Humboldt Lima (Perú)
Award: first student in Sciences and Mathematics

Languages: English, German, Spanish (all fluent)

RESEARCH & PROFESSIONAL EXPERIENCE

Assistant Professor
Department of Physics, Texas A&M University, College Station, USA 01/2009 –
Theoretical Physics Institute, ETH Zürich, Switzerland (SNF) 03/2007 – 03/2011

Post-Doctoral Researcher
Theoretical Physics Institute, ETH Zürich, Switzerland 10/2002 – 03/2007
Department of Physics, University of California, Davis, USA 10/2001 – 10/2002

Research Assistant
Department of Physics, University of California, Santa Cruz, USA 10/1997 – 10/2001
Theoretical Physics Institute, ETH Zürich, Switzerland 04/1997 – 09/1997

Computer System Administrator
Department of Physics, University of California, Santa Cruz, USA 12/1997 – 01/2001

SCIENTIFIC VISITS

Aspen Center for Physics, Aspen, CO, USA Program on "*Complexity, Disorder, and Algorithms*"	05/2008 – 06/2008
KITP University of California Santa Barbara, Santa Barbara, CA, USA Program on "*Topological Phases and Quantum Computation*"	04/2006 – 05/2006
Institute for Rock Magnetism, Minneapolis, MN, USA	05/2002

PUBLICATION & PRESENTATION SUMMARY

Publications	47
Conference proceedings & book chapters	10
Invited talks, seminars & colloquia	53
Conference contributions (talks & posters)	38

RESEARCH INTERESTS & SKILLS

Research Interests
Disordered systems: spin glasses, electron & structural glasses, quantum glasses, vortex glasses
Complex systems, optimization problems, phase transitions in statistical systems
Topological quantum computation, quantum dimer systems
Cold atomic gases, particles in optical lattices
Hysteresis modeling: magnetic modeling, FORC method
Superconductivity, econophysics

Tools
(Quantum) Monte Carlo methods and optimization algorithms
Statistical data analysis
Analytical approaches (field theory, scaling theory)

Computer experience
Languages: C, MPI, Perl, shell scripts, Mathematica
Platforms: Linux, Unix, Mac OS X, Windows
Parallel computing: Beowulf clusters

GRANTS

Research grants

SNF Faculty Fellowship:
CHF 1 391k (US$ 1 1245k)
since 03/2007, funding period: 4 years
Principal investigator (PI)

ETH Matching Funds Grant:
CHF 1 120k (US$ 1 003k)
granted 11/2007, purchase of a beowulf cluster
co-PI with M. Troyer, M. Parrinello, M. Kröger

Supercomputing grants

NPACI Expedited Development Allocation: 10 000 CPUh (2001)
AHPCC Supercomputer Allocation (Roadrunner cluster): 50 000 CPUh (2001)
TACC Supercomputer Startup Allocation (Ranger cluster): 115 000 CPUh (2008)

TEACHING & ADVISING

Lectures
Graduate Seminar (organizer) "Quantum Computing," (3h/week) ETH Zürich (2008)
Graduate Lecture "Optimization Problems & Algorithms in Physics," (2h/week) ETH Zürich (2007)
Graduate Seminar (organizer) "Phase Transitions," (3h/week) ETH Zürich (2007)

Short Courses
Graduate Lecture "Introduction to Mathematica," (2h course) ETH Zürich (2002 – 2006)
Graduate Case Study "Spin Glasses and Optimization Problems," (2h course) ETH Zürich (2006)

Guest Lecturer
Graduate Course "Advanced Theoretical Condensed Matter Physics," ETH Zürich (2002, 2005)
Graduate Course "Computational Physics," ETH Zürich (2002, 2004, 2006)
Graduate Course "Advanced Computational Physics," ETH Zürich (2006)

Teaching Assistant
Head Assistant, Graduate Seminar "Topology in Physics," ETH Zürich (2006)
Head Assistant, Graduate Seminar "Methods in Condensed Matter Physics," ETH Zürich (2004)
Assistant, Graduate Seminar "Monte Carlo Methods in Statistical Physics," ETH Zürich (2004)
Head Assistant, Graduate Seminar "Bose-Einstein Condensation," ETH Zürich (2003)
Assistant, Graduate Course "Theoretical Condensed Matter Physics," ETH Zürich (2002)
Assistant, Undergraduate Course "Advanced Mathematical Physics," UC Santa Cruz (1998)
Assistant, Undergraduate Physics Lab, UC Santa Cruz (1997)
Assistant, Undergraduate Course "Calculus for Engineers," ETH Zürich (1995 – 1997)

Graduate Students
Brigitte Surer, PhD candidate (2007 – 2009)
Ruben Andrist, PhD candidate (2007 – 2012)
Juan Carlos Andresen (2009 – 2013)

Student Supervision and Advising
H. P. Büchler, undergraduate project "Casimir force between vortex matter," ETH Zürich (1998)
M. Körner, research project "Energy fluctuations in spin glasses," ETH Zürich (2003)
L. W. Lee, research project "Correlation length of the 2D $\pm J$ spin glass," UC Santa Cruz (2004)
A. Esposito, class research project "Parallel tempering study of spin glasses," ETH Zürich (2004)
F. Hassler, undergraduate research "Superconducting tetrahedral qubits," ETH Zürich (2004)
P. Dayal, graduate research "Quantum 2D spin glasses," ETH Zürich (2004)
T. Bisig, research project "Topologically protected qubits," ETH Zürich (2004)
A. Esposito, master thesis "Fermionic atoms in optical lattices," ETH Zürich (2004)
P. Nüesch, research project "Mean-field glass transition in a model liquid," ETH Zürich (2005)
O. Gygi, master thesis "Bosonic atoms in optical lattices," ETH Zürich (2005)
C. Gils, graduate research "Structural glass models," ETH Zürich (2006)
D. Larson, graduate research "Optimizing parallel tempering in a field," UC Santa Cruz (2006)
L. Bonnes, undergraduate research "Optimized parallel tempering," ETH Zürich (2006)
A. Kyker, research project "Transfer matrices for 2D spin glasses," UC Davis (2006)
B. Surer, research project "Numerical studies of the Coulomb glass," ETH Zürich, (2006 – 2007)
B. Surer, diploma thesis "Numerical studies of electron glasses," ETH Zürich, (2007)
D. Murer, bachelor thesis "Striped phases in superconductors," ETH Zürich, (2007)
R. Andrist, undergraduate research "Cluster algorithm for vector spin glasses," ETH Zürich, (2007)
K. Jaeger, master thesis "Numerical study of chemical solar energy storage," ETH Zürich, (2007)
R. Andrist, diploma thesis "Long-range permutation Potts glass," ETH Zürich, (2008)
F. Gaignat, undergraduate research "Self-organized criticality in hysteresis," ETH Zürich, (2008)
Y. Matsuda, graduate research "Quantum Annealing for degenerate systems," ETH Zürich, (2008)
R. Affolter, master thesis "Radiative characteristics of thermoelectric materials," ETH Zürich (2009)

Substitute Mathematics Teacher (High School level)
Kantonsschule (high school) Wattwil, Switzerland (1997)

PUBLICATIONS

Note: † Denotes 5 most important publications.

Papers

47 **H. G. Katzgraber**, I. A. Campbell and A. K. Hartmann,
"*Extended scaling for ferromagnetic Ising models with zero-temperature transitions*,"
Phys. Rev. B 78, 184409 (2008)

46 **H. G. Katzgraber** and A. K. Hartmann,
"*Ultrametricity and clustering of states in spin glasses: A one-dimensional view*,"
Phys. Rev. Lett., submitted (arXiv:cond-mat/0807.3513)

45 K. Jäger, W. Lipinski, **H. G. Katzgraber**, and A. Steinfeld,
"*Determination of thermal radiative properties of packed-bed media containing a mixture of polydisperse particles*,"
Int. J. Therm. Sci., submitted

44 Brigitte Surer, **H. G. Katzgraber**, G. T. Zimanyi, B. A. Allgood and G. Blatter,
"*Density of States and Critical Behavior of the Coulomb Glass*,"
Phys. Rev. Lett., submitted (arXiv:cond-mat/0805.4640)

43 A. F. Albuquerque, **H. G. Katzgraber**, M. Troyer, and G. Blatter,
"*ENCORE: An Extended Contractor Renormalization algorithm*,"
Phys. Rev. E, submitted (arXiv:cond-mat/0805.2290)

42 S. Morrison, A. Kantian, A. J. Daley, **H. G. Katzgraber**, M. Lewenstein, H. P. Büchler, P. Zoller,
"*Physical replicas and the Bose-glass in cold atomic gases*,"
New J. Phys. 10, 073032 (2008)

41 T. Jörg and **H. G. Katzgraber**,
"*Evidence for universal scaling in the spin-glass phase*,"
Phys. Rev. Lett. 101, 197205 (2008)

40 T. Jörg and **H. G. Katzgraber**,
"*Universality and universal finite-size scaling functions in four-dimensional Ising spin glasses*,"
Phys. Rev. B 77, 214426 (2008)

39 M. Pelikan, **H. G. Katzgraber**, and S. Kobe,
"*Finding Ground States of Sherrington-Kirkpatrick Spin Glasses with Hierarchical BOA and Genetic Algorithms*,"
GECCO-2008 Conference, ACM Press, p. 447-454 (2008).

38 T. Jörg, **H. G. Katzgraber**, and F. Krząkała,
"*Behavior of Ising Spin Glasses in a Magnetic Field*,"
Phys. Rev. Lett. 100, 197202 (2008)

37 S. Boettcher, **H. G. Katzgraber**, and D. Sherrington,
"*Local-field distributions in spin glasses*,"
J. Phys. A: Math. Theor. 41, 324007 (2008)

36† A. F. Albuquerque, **H. G. Katzgraber**, M. Troyer, and G. Blatter,
"*Engineering exotic phases for topologically-protected quantum computation by emulating quantum dimer models*,"
Phys. Rev. B 78, 014503 (2008)

35 Charlotte Gils, **H. G. Katzgraber**, and Matthias Troyer,
"*Absence of a structural glass phase in a monoatomic model liquid predicted to undergo an ideal glass transition*,"
J. Stat. Mech. P09011 (2007)

34 **H. G. Katzgraber**, D. Hérisson, M. Östh, Per Nordblad, Atsuko Ito, and Hiroko Aruga Katori,
"*Finite versus zero-temperature hysteretic behavior of spin glasses: Experiment and theory*,"
Phys. Rev. B 76, 092408 (2007)

33 **H. G. Katzgraber**, D. Würtz, and G. Blatter,
"*Typical versus average superfluid density: Understanding the vortex glass phase*,"
Phys. Rev. B 75, 214511 (2007)

32 **H. G. Katzgraber**, L. W. Lee, and I. A. Campbell,
"*Effective critical behavior of the two-dimensional Ising spin glass with bimodal interactions*,"
Phys. Rev. B 75, 014412 (2007)

31 **H. G. Katzgraber** and F. Krząkała,
"*Temperature and Disorder Chaos in Three-Dimensional Ising Spin Glasses*,"
Phys. Rev. Lett. 98, 017201 (2007)

30 L. W. Lee, **H. G. Katzgraber**, and A. P. Young,
"*Critical behavior of the three- and ten-state short-range Potts glass: A Monte Carlo study*,"
Phys. Rev. B 74, 104416 (2006)

29 O. Gygi, **H. G. Katzgraber**, M. Troyer, S. Wessel, and G. George Batrouni,
"*Simulations of ultracold bosonic atoms in optical lattices with anharmonic traps*,"
Phys. Rev. A 73, 063606 (2006)

28 M. S. Pierce, C. R. Buechler, L. B. Sorensen, S. D. Kevan, E. A. Jagla, J. M. Deutsch, T. Mai, O. Narayan, J. E. Davies, Kai Liu, G. T. Zimanyi, **H. G. Katzgraber**, O. Hellwig, E. E. Fullerton, and J. B. Kortright,
"*Disorder-induced magnetic memory: Experiments and theories*,"
Phys. Rev. B 75, 144406 (2007)

27 M. Körner, **H. G. Katzgraber**, and Alexander K. Hartmann,
"*Probing tails of energy distributions using importance-sampling in the disorder with a guiding function*,"
J. Stat. Mech. P04005 (2006)

26 **H. G. Katzgraber**, M. Körner and A. P. Young,
"*Universality in three-dimensional Ising spin glasses: A Monte Carlo study*,"
Phys. Rev. B 73, 224432 (2006)

25 **H. G. Katzgraber**, S. Trebst, D. A. Huse, and M. Troyer,
"*Feedback-optimized parallel tempering Monte Carlo*,"
J. Stat. Mech. P03018 (2006)

24 **H. G. Katzgraber**, L. W. Lee, and I. A. Campbell,
"*Nontrivial critical behavior of the free energy in the two-dimensional Ising spin glass with bimodal interactions*,"
unpublished, (cond-mat-0510668)

23† **H. G. Katzgraber**, A. Esposito, and M. Troyer,
"*Ramping fermions in optical lattices across a Feshbach resonance*,"
Phys. Rev. A 74, 043602 (2006)

22 **H. G. Katzgraber** and G. T. Zimányi,
"*Hysteretic memory effects in disordered magnets*,"
Phys. Rev. B 74, 020405(R) (2006)

21† **H. G. Katzgraber** and A. P. Young,
"*Probing the Almeida-Thouless line away from the mean-field model*,"
Phys. Rev. B 72, 184416 (2005)

20 **H. G. Katzgraber**, M. Körner, F. Liers, M. Jünger and A. K. Hartmann,
"*Universality-class dependence of energy distributions in spin glasses*,"
Phys. Rev. B 72, 094421 (2005)

19 **H. G. Katzgraber** and I. A. Campbell,
"*Dynamical scaling in Ising and vector spin glasses*,"
Phys. Rev. B 72, 014462 (2005)

18 D. Würtz and **H. G. Katzgraber**,
"*Precise finite-sample quantiles of the Jarque-Bera adjusted Lagrange multiplier test*,"
Comp. Stat., submitted (math.ST/0509423)

17 **H. G. Katzgraber** and L. W. Lee,
"*Correlation length of the two-dimensional Ising spin glass with bimodal interactions*,"
Phys. Rev. B 71, 134404 (2005)

16† A. P. Young and **H. G. Katzgraber**,
"*Absence of an Almeida-Thouless line in Three-Dimensional Spin Glasses*,"
Phys. Rev. Lett. 93, 207203 (2004)

15 I. A. Campbell, A. K. Hartmann, and **H. G. Katzgraber**,
"*Energy size effects of two-dimensional Ising spin glasses*,"
Phys. Rev. B 70, 054429 (2004)

14 **H. G. Katzgraber**, L. W. Lee, and A. P. Young,
"*Correlation length of the two-dimensional Ising spin glass with Gaussian interactions*,"
Phys. Rev. B 70, 014417 (2004)

13 **H. G. Katzgraber** and I. A. Campbell,
"*Critical properties of the three- and four-dimensional gauge glass*,"
Phys. Rev. B 69, 094413 (2004)

12 **H. G. Katzgraber** and A. P. Young,
"*Geometry of large-scale low-energy excitations in the one-dimensional Ising spin glass with power-law interactions interactions*,"
Phys. Rev. B 68, 224408 (2003)

11 **H. G. Katzgraber** and I. A. Campbell,
"*Size-dependence of the internal energy in Ising and vector spin glasses*,"
Phys. Rev. B 68, 180402(R) (2003)

10 **H. G. Katzgraber**,
"*On the existence of a finite-temperature transition in the two-dimensional gauge glass*,"
Phys. Rev. B 67, 180402(R) (2003)

09 **H. G. Katzgraber** and A. P. Young,
"*Monte Carlo studies of the one-dimensional Ising spin glass with power-law interactions*,"
Phys. Rev. B 67, 134410 (2003)

08 J. J. Moreno, **H. G. Katzgraber**, and A. K. Hartmann,
"*Finding Low-Temperature States with Parallel Tempering, Simulated Annealing and Simple Monte Carlo*,"
Int. J. of Mod. Phys. C 14, Vol. 3, 285 (2003)

07 **H. G. Katzgraber** and A. P. Young,
"*Numerical studies of the two- and three-dimensional gauge glass at low temperature*,"
Phys. Rev. B 66, 224507 (2002)

06 **H. G. Katzgraber**, F. Pázmándi, C. R. Pike, Kai Liu, R. T. Scalettar, K. L. Verosub, and G. T. Zimányi,
"*Reversal-field memory in the Hysteresis of Spin Glasses*,"
Phys. Rev. Lett. 89, 257202 (2002)

05 **H. G. Katzgraber** and A. P. Young,
"*Monte Carlo simulations of spin glasses at low temperatures: Effects of free boundary conditions*,"
Phys. Rev. B 65, 214402 (2002)

04 **H. G. Katzgraber** and A. P. Young,
"*Monte Carlo simulations of the four-dimensional XY spin glass at low temperatures*,"
Phys. Rev. B 65, 214401 (2002)

03 **H. G. Katzgraber** and A. P. Young,
"*Nature of the spin-glass state in the three-dimensional gauge glass*,"
Phys. Rev. B 64, 104426 (2001)

02† **H. G. Katzgraber**, M. Palassini, and A. P. Young,
"*Monte Carlo simulations of spin glasses at low temperatures*,"
Phys. Rev. B 63, 184422 (2001)

01 **H. G. Katzgraber**, H. P. Büchler, and G. Blatter,
"*Casimir force between vortex matter in anisotropic and layered superconductors*,"
Phys. Rev. B 59, 11990 (1999)

Refereed Conference Proceedings & Book Chapters

10 Y. Matsuda, H. Nishimori, and **H. G. Katzgraber**, "*Quantum annealing for problems with ground-state degeneracy*," in Proceedings of the International Workshop on Statistical-Mechanical Informatics 2008, Sendai (Japan) September 14-17, 2007, J. Phys.: Conf. Ser., submitted (arXiv:cond-mat/0808.0365)

09 **H. G. Katzgraber**, Alexander K. Hartmann, and A. P. Young, "*New Insights from One-Dimensional Spin Glasses*," to appear in: Computer Simulation Studies in Condensed Matter Physics XXI, Eds. D.P. Landau, S.P. Lewis, and H.B. Schuttler (Springer Verlag, Heidelberg, Berlin 2008), (arXiv:cond-mat/0803.3417)

08 **H. G. Katzgraber**, "*Spin glasses and algorithm benchmarks: A one-dimensional view*," in Proceedings of the International Workshop on Statistical-Mechanical Informatics 2007, Kyoto (Japan) September 16-19, 2007, J. Phys.: Conf. Ser. 95 012004 (2008), (arXiv:cond-mat/0711.1532)

07 S. Trebst, D. A. Huse, E. Gull, **H. G. Katzgraber**, U. H. E. Hansmann, and M. Troyer , "*Ensemble optimization techniques for the simulation of slowly equilibrating systems*," in "Computer Simulation Studies in Condensed Matter Physics XIX" Springer Proceedings in Physics, Volume 115, D. P. Landau, S. P. Lewis and H.-B. Schüttler, eds (2007), (cond-mat/0606005)

06 **H. G. Katzgraber**, M. Körner, F. Liers, and A. K. Hartmann, "*Overcoming system-size limitations in spin glasses*," Proceedings of the 2004 SPDSA Conference in Hayama, Japan, July 12 – 15, 2004, Progress of Theoretical Physics Supp. No. 157, 59 (2005)

05 **H. G. Katzgraber**, G. Friedman, and G. T. Zimányi, "*Fingerprinting hysteresis*," Proceedings of the 2003 HMM Conference, Salamanca, Spain, May 2003, Physica B 343, 10 (2004)

04 **H. G. Katzgraber**, F. Pázmándi, C. R. Pike, Kai Liu, R. T. Scalettar, K. L. Verosub, and G. T. Zimányi, "*Reversal-field memory in magnetic hysteresis*," Proceedings of the 2002 MMM Conference, Tampa, FL, Nov 11 – 15, 2002, J. Appl. Phys. 93, 6617 (2003)

03 **H. G. Katzgraber**, "*Numerical studies of the two- and three-dimensional gauge glass at low temperature*," Proceedings of the 2002 MMM Conference, Tampa, FL, Nov 11 – 15, 2002, J. Appl. Phys. 93, 7661 (2003)

02 **H. G. Katzgraber**, "*Monte Carlo simulations of vector spin glasses at low temperatures*," Proceedings of "Computational Modeling and Simulation of Complex Systems" Conference, Aachen, Germany, September 5 – 8, 2001, Comp. Phys. Comm. 147, 439 (2002)

01 H. P. Büchler, **H. G. Katzgraber**, and G. Blatter, "*Casimir force between two half spaces of vortex matter in anisotropic superconductors*," Proceedings of the First Euro Conference on "Vortex Matter in Superconductors," Crete, Greece, September 18 – 24, 1999, Physica C 332, Issue 1–4 (2000)

Theses

02 **H. G. Katzgraber**, "*Nature of the spin-glass state as seen from low-temperature Monte Carlo simulations*," Ph.D. Thesis, University of California Santa Cruz, CA (2001)

01 **H. G. Katzgraber**, "*Attraction of Vortices in Anisotropic and Layered Superconductors*," Diploma Thesis, ETH Zürich, Switzerland (1997)

INVITED TALKS

Conferences

12 Spring School on Monte Carlo Simulations of Disordered Systems, Leipzig, Germany (April 2008), "*Exchange Monte Carlo: an efficient workhorse for optimization problems*" and "*New insights from one-dimensional spin glasses*"

11 Recent Developments in Computer Simulation Studies in Condensed Matter Physics, Athens, GA USA (February 2008), "*New insights from one-dimensional spin glasses*"

10 Nonlinear Dynamics and Statistical Mechanics of Complex Systems Workshop, Lavin, Switzerland (January 2008), "*Spin glasses: Still frustrating after all these years?*"

09 Texas Section Meeting of the American Physical Society, College Station, TX (October 2007), "*The Physics of Diving*" (also held in Spanish)

08 Meeting of the Argentinian Physical Society, Salta, Argentina (September 2007), "*Do spin glasses order in a field?*"

07 International Workshop on Statistical-Mechanical Informatics, Kyoto, Japan (September 2007), "*Spin glasses and algorithm benchmarks: A one-dimensional view*"

06 ICREA Workshop "Disorder in Cold Atoms", Barcelona, Spain (January 2007), "*Spin glasses and cold atoms*"

05 CECAM Workshop "Rugged Free Energy Landscapes in Glasses, Spin Glasses and Biological Macromolecules", Lyon, France (June 2005), "*Overcoming system-size limitations in spin glasses*"

04 Beowulf Day, ETH Zürich, Switzerland (January 2005), "*Large-scale spin-glass simulations on the Hreidar Beowulf cluster*"

03 March Meeting of the American Physical Society, Montreal, Canada (March 2004), "*Overcoming system-size limitations in spin glasses*"

02 Dagstuhl-Seminar (New Optimization Algorithms in Physics), Dagstuhl, Germany (September 2003), "*Spin glasses at low and zero temperatures*"

01 Intl. Workshop on Magnetism, Hysteresis and the FORC Method, Davis CA (April 2003), "*Fingerprinting hysteretic systems: A numerical approach*"

Colloquia

08 Inaugural lecture, ETH Zurich, Zurich, Switzerland (May 2008), "*Glasses: the unknown known*"

07 Theory Colloquium, Department of Physics, Oldenburg University, Germany (January 2008), "*Spin glasses: Chaotic and universal*"

06 Colloquium, Department of Physics, Hong Kong Baptist University, Hong Kong (September 2007), "*Do spin glasses order in a field?*"

05 Colloquium, Department of Physics, Texas A&M University, College Station TX, USA (June 2007), "*Do spin glasses order in a field?*"

04 Colloquium, Department of Physics, University of Denver, Denver CO, USA (March 2007), "*Do spin glasses order in a field?*"

03 Colloquium, Department of Physics, Virginia Tech, Blacksburg VA, USA (March 2006), "*Do spin glasses order in a field?*"

02 Theory Colloquium, Innsbruck University, Innsbruck, Austria (October 2004), "*Spin glasses: still frustrating after all these years?*"

01 Colloquium, Institute for Informatics, University of Cologne, Cologne, Germany (June 2004), "*Spin glasses: still frustrating after all these years?*"

Seminars

33 Universidad Complutense de Madrid, Spain (July 2008), "*New insights from one-dimensional spin glasses*"

32 Louisiana State University, Baton Rouge LA (April 2007), "*Do spin glasses order in a field?*"

31 University of Barcelona, Barcelona, Spain (January 2007), "*Equilibrium and non-equilibrium properties of spin glasses in a field*"

30 ETH Zürich (QSIT seminar), Zürich, Switzerland (October 2006), "*Introduction to topologically protected quantum computing*"

29 University of California, Santa Cruz CA (October 2006), "*Ramping fermions in optical lattices across a Feshbach resonance*"

28 Department of Physics, Virginia Tech, Blacksburg VA, USA (August 2006), "*Ramping fermions in optical lattices across a Feshbach resonance*"

27 Department of Engineering Sciences and Physics, College of Staten Island CUNY, Staten Island NY (March 2006), "*Do spin glasses order in a field?*"

26 University of Göttingen, Germany (January 2006), "*Equilibrium and nonequilibrium properties of spin glasses in a field*"

25 EPF Lausanne, Switzerland (December 2005), "*Do spin glasses have a phase transition in a field?*"

24 University of California, Santa Cruz CA (November 2005), "*Equilibrium and non-equilibrium properties of spin glasses in a field*"

23 Utrecht University, Utrecht, The Netherlands (May 2005), "*Spin glasses: still frustrating after all these years?*"

22 University of California, Davis CA (March 2005), "*Equilibrium and non-equilibrium properties of spin glasses in a field*"

21 Microsoft Research Labs, Redmond, USA (February 2005), "*Spin glasses: still frustrating after all these years?*"

20 Royal Institute of Technology (KTH), Stockholm, Sweden (September 2004), "*Recent developments in spin glasses*"

19 Uppsala University, Uppsala, Sweden (September 2004), "*Equilibrium and non-equilibrium properties of spin glasses in a field*"

18 ISSP, The University of Tokyo, Kashiwa, Japan (July 2004), "*Recent developments in spin glasses*"

17 University of Osaka, Osaka, Japan (July 2004), "*Recent developments in spin glasses*"

16 The University of Electro-Communications, Tokyo, Japan (July 2004), "*Typical versus average superfluid density: Understanding the vortex glass phase*"

15 ETH Zürich, Switzerland (June 2004), "*Spin glasses: still frustrating after all these years?*"

14 University of California, Davis CA (May 2004), "*Typical versus average superfluid density: Understanding the vortex glass phase*"

13 University of California, Santa Cruz CA (May 2004), "*Typical versus average superfluid density: Understanding the vortex glass phase*"

12 ETH Zürich, Switzerland (April 2004), "*Spin glasses: still frustrating after all these years?*"

11 University of Arizona, Tucson AZ (December 2003), "*Overcoming system-size limitations in spin glasses*"

10 University of Montpellier, France (July 2003), "*Probing the nature of the spin-glass state with Monte Carlo simulations*"

09 University of California, Davis CA (April 2003), "*Probing the nature of the spin-glass state with Monte Carlo simulations*"

08 University of Göttingen, Germany (January 2003), "*The nature of the spin-glass state*"

07 University of Fribourg, Switzerland (November 2002), "*Probing the nature of the spin-glass state with Monte Carlo simulations*"

06 University of California, Santa Cruz CA (May 2002), "*FORC Diagrams and Reversal-Field Memory in Magnetic Hysteresis*"

05 Institute for Rock Magnetism, Minneapolis MN (May 2002), "*FORC diagrams and singularities in magnetic materials*"

04 ETH Zürich, Switzerland (September 2001), "*Nature of the Spin-Glass State as seen from Low-Temperature Monte Carlo Simulation*"

03 University of Basel, Switzerland (September 2001), "*Nature of the Spin-Glass State as seen from Low-Temperature Monte Carlo Simulations*"

02 University of California, Santa Cruz CA (October 2000), "*Monte Carlo Simulations of Spin-Glasses at Low Temperatures*"

01 University of California, Santa Cruz CA (February 1998), "*Van der Waals interaction of vortices in anisotropic and layered superconductors*"

CONFERENCE CONTRIBUTIONS

Talks

30 March Meeting of the American Physical Society, New Orleans, LA (March 2008), "*On the ordering of Ising spin glasses in a field*"

29 March Meeting of the American Physical Society, New Orleans, LA (March 2008), "*Monte Carlo study of the three-dimensional Coulomb glass*"

28 March Meeting of the American Physical Society, Denver, CO (March 2007), "*Universality in spin glasses: A Monte Carlo study*"

27 March Meeting of the American Physical Society, Denver, CO (March 2007), "*Chaos in spin glasses*"

26 Swiss Physical Society Meeting, Zurich, Switzerland (February 2007), "*Chaos in spin glasses*"

25 Monte Carlo data formats meeting, ETH Zürich, Switzerland (September 2006), "*Monte Carlo data formats for (spin) glass simulations*"

24 Highly Frustrated Magnetism Conference 2006, Osaka, Japan (August 2006), "*Do spin glasses order in a field?*"

23 March Meeting of the American Physical Society, Baltimore MD (March 2006), "*Ramping Fermions in Optical Lattices across a Feshbach resonance*"

22 March Meeting of the American Physical Society, Baltimore MD (March 2006), "*Probing the Almeida-Thouless line away from the mean-field model*"

21 Beowulf Day, ETH Zürich, Switzerland (January 2006), "*Do spin glasses have a phase transition in a field?*"

20 2005 Swiss Workshop in Materials with Novel Electronic Properties, Les Diablerets, Switzerland (September 2005), "*Ramping Fermions in Optical Lattices across a Feshbach resonance*"

19 Hysteresis and Magnetic Modeling Conference, Budapest, Hungary (May 2005), "*Memory effects in the hysteresis of the Edwards-Anderson Ising spin-glass model*"

18 March Meeting of the American Physical Society, Los Angeles CA (March 2005), "*Absence of an Almeida-Thouless line in Ising spin glasses*"

17 March Meeting of the American Physical Society, Los Angeles CA (March 2005), "*Correlation length of the two-dimensional Ising spin glass with bimodal interactions*"

16 Conference on Computational Physics, Genoa, Italy (September 2004), "*Feedback-optimized parallel tempering Monte Carlo*"

15 Conference on Statistical Physics of Disordered Systems and its Applications, Hayama, Japan (July 2004), "*Overcoming system-size limitations in spin glasses*"

14 March Meeting of the American Physical Society, Montreal, Canada (March 2004), "*Typical versus average superfluid density: Understanding the vortex glass phase*"

13 Beowulf Day, ETH Zürich, Switzerland (January 2004), "*Typical versus average superfluid density: Understanding the vortex glass phase*"

12 Hysteresis and Magnetic Modeling Conference, Salamanca, Spain (May 2003), "*Fingerprinting Hysteresis*"

11 Hysteresis and Magnetic Modeling Conference, Salamanca, Spain (May 2003), "*Fingerprinting Exchange Bias*" (together with K. Liu)

10 March Meeting of the American Physical Society, Austin TX (March 2003), "*Monte Carlo studies of the 1D Ising spin glass with power-law interactions*"

09 MaNEP Topical Meeting, Neuchatel, Switzerland (February 2003), "*Probing the nature of the spin-glass state with Monte Carlo simulations*"

08 Beowulf Day, ETH Zürich, Switzerland (January 2003), "*Nature of the spin-glass state*"

07 Conference on Magnetism and Magnetic Materials, Tampa FL (November 2002), "*Numerical studies of the two- and three-dimensional gauge glass at low temperature*"

06 March Meeting of the American Physical Society, Indianapolis IN (March 2002), "*FORC diagrams and singularities in magnetic materials*"

05 March Meeting of the American Physical Society, Indianapolis IN (March 2002), "*Spin-glasses at Low Temperatures: Effects of Free Boundary Conditions*"

04 March Meeting of the American Physical Society, Seattle WA (March 2001), "*Monte Carlo Simulations of Spin Glasses at Low Temperatures: The 3D Gauge Glass*"

03 CLC conference, Lake Tahoe CA (February 2001), "*Monte Carlo Simulations of Spin Glasses at Low Temperatures: The 3D Gauge Glass*"

02 PASI Conference Chile (January 2001), "*Monte Carlo Simulations of Spin Glasses at Low Temperatures*"

01 March Meeting of the American Physical Society, Los Angeles CA (March 1999), "*Casimir Force between Vortex Matter in Anisotropic and Layered Superconductors*"

Posters

08 International Conference on Magnetism 2006, Kyoto, Japan (August 2006), "*Probing the Almeida-Thouless line away from the mean-field model*"

07 Swiss Physical Society MaNEP Meeting, Lausanne, Switzerland (February 2006), "*Probing the Almeida-Thouless line away from the mean-field model*"

06 Conference on Statistical Physics of Disordered Systems and its Applications, Rome, Italy (September 2005), "*Probing the Almeida-Thouless line away from the mean-field model*"

05 MaNEP Topical Meeting (review panel), Neuchatel, Switzerland (June 2003), "*Large-scale low-energy excitations in the one-dimensional Ising spin glass with power-law interactions*"

04 28$^{\text{th}}$ MECO Conference, Saarbrücken, Germany (March 2003), "*Monte Carlo studies of the 1D Ising spin glass with power-law interactions*"

03 Conference on Magnetism and Magnetic Materials, Tampa FL (November 2002), "*Reversal-field memory in magnetic hysteresis*"

02 Conference on Computational Physics 2001, Aachen, Germany (September 2001), "*Monte Carlo Simulations of Vector Spin Glasses at Low Temperatures*"

01 4$^{\text{th}}$ International Workshop on Vortex Matter, Monte Verita, Switzerland (June 1997), "*Low Field Phase Diagram of Layered and Strongly Anisotropic Superconductors including Intervortex van der Waals Attractions*"

COMMUNITY SERVICE & MISCELLANEA

Conference Organization
Co-organizer "*Meeting on Quantum Systems for Information Technology*", Zürich, 21–24/03/2006

Outreach
Judge for the Santa Cruz County Science Fair (1998 – 2000)
Project reviewer at the ETH Maturandentag (2004, 2005)
Participation and experiment design in "*Physics for Kids and Teens*", 150 Years ETH (2005)
Presentation at "*Nacht der Physik*" ("*The Physics of Diving*"), ETH Zürich (2005)

Committee Work
Organizer ETH Zürich Theoretical Physics Colloquium (2007 – 2008)
Member of the UC Santa Cruz Divisional Academic Computing Advisory Committee (2000)
Computer Coordinator of the UC Santa Cruz Physics Department (1999 – 2001)

Academics
Grant proposal reviewer: NSF (USA), FONDECYT (Chile), QIPC (Austria)
Member of the American Physical Society (since 1996)
Member of the Swiss Physical Society (since 2007)
Referee: Physical Review Letters, Physical Review B, Physical Review E, JSTAT, JMMM, JPCM, European Physics Journal B, IEEE CiSE, J. Phys. A, J. Phys. D, New Journal of Physics, Computational Materials Science, Physica A

Hobbies
Karate (1^{st} Dan, black belt) since 04/1999
Diving (PADI Divemaster No. 981564) and underwater photography since 09/2003

REFERENCES

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