
Prof. Dr. Thomas Pruschke

Date of birth: April 23, 1959
Office address: Institut für Theoretische Physik
Universität Göttingen
Friedrich-Hund-Platz 1
37077 Göttingen

Areas of Research

- Correlation effects in quantum-mechanical many-particle systems (bosons and fermions)
- Electronic structure of correlated electron materials
- Correlation effects in quantum-mechanical many-particle systems (bosons and fermions)
- Development of analytical and computational tools
- Ordering phenomena and transport in correlated electronic systems

Education

1980 – 1985 Studies of Physics, Technical University of Darmstadt.
1985 Diploma Degree in Physics, Technical University of Darmstadt.
1985 – 1992 Teaching assistant, Technical University of Darmstadt.
1989 Doctoral Degree in Physics, Technical University of Darmstadt.
1996 Habilitation in Physics, University of Regensburg.

Professional Career

1990 – 1991 Postdoctoral researcher, Tokyo Institute of Technology, Tokyo (Japan).
1992 Visiting scholar, Ohio State University, Columbus (USA).
1992 – 2001 Research associate, University of Regensburg.
2001 – 2003 Akademischer Rat, University of Augsburg.
Since 2003 Professor for *Computational Physics*, University of Göttingen.

Honours and awards

1990 Research fellow of the Humboldt Foundation/Japan Society for the Promotion of Science (April 1990 – December 1991).
2009 Schonbrunn Visiting Professor at the Hebrew University of Jerusalem (April – July 2009).

- 2010 – present Adjoint professor at Louisiana State University, Baton Rouge, USA.
- 2011 – present Adjoint faculty member at Tata Institute for Fundamental Research, Mumbai, India.

Selected Publications

- * S.-X. Yang, P. Haase, H. Terletska, Z. Y. Meng, T. Pruschke, J. Moreno, M. Jarrell, *Dual-fermion approach to interacting disordered fermion systems*, Phys. Rev. B **89**, 195116 (2014).
- * S. Filor, T. Pruschke, *Variational Cluster Approximation to the Thermodynamics of Quantum Spin Systems*, New J. Phys. **16**, 063059 (2014).
- * A. C. Tiegel, S. R. Manmana, T. Pruschke, A. Honecker, *Matrix product state formulation of frequency-space dynamics at finite temperatures*, Phys. Rev. B **90**, 060406 (2014).
- * O. Bodensiek, R. Zitko, M. Vojta, M. Jarrell, T. Pruschke, *Unconventional Superconductivity from Local Spin Fluctuations in the Kondo Lattice*, Phys. Rev. Lett. **110**, 146406 (2013).
- * P.E. Dargel, A. Wöllert, A. Honecker, I. P. McCulloch, U. Schollwöck, T. Pruschke, *Lanczos algorithm with Matrix Product States for dynamical correlation functions*, Phys. Rev. B **85**, 205119 (2012).
- * S.-X. Yang, H. Fotso, H. Hafermann, K.-M. Tam, J. Moreno, T. Pruschke, M. Jarrell, *Dual fermion dynamical cluster approach for strongly correlated systems*, Phys. Rev. B **84**, 155106 (2011).
- * S.X. Yang, H. Fotso, J. Liu, T. A. Maier, K. Tomko, E. F. D'Azevedo, R. T. Scalettar, T. Pruschke, M. Jarrell, *Parquet approximation for the 4x4 Hubbard cluster*, Phys. Rev. E **80**, 046706 (2009).
- R. Bulla, T. Costi, and Th. Pruschke, *The numerical renormalization group method for quantum impurity systems*, Rev. Mod. Phys. **80**, 395 (2008).
- Th. Pruschke, *Dynamical Mean-Field Approximation and Cluster Methods for Correlated Electron Systems*, in *Computational Many Particle Physics*, Lect. Notes Phys. **739**, edited by H. Fehske, R. Schneider, and A. Weiße, (Springer, Berlin, 2008), p. 473.
- * Th. Maier, M. Jarrell, Th. Pruschke, and M.H. Hettler, *Quantum Cluster Theories*, Rev. Mod. Phys. **77**, 1027 (2005).

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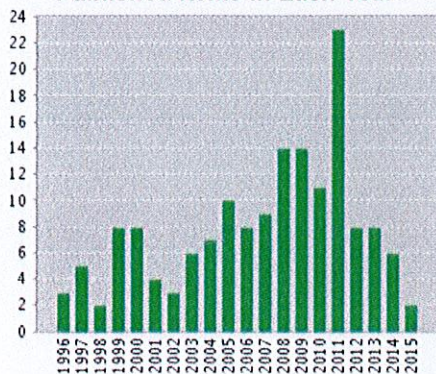
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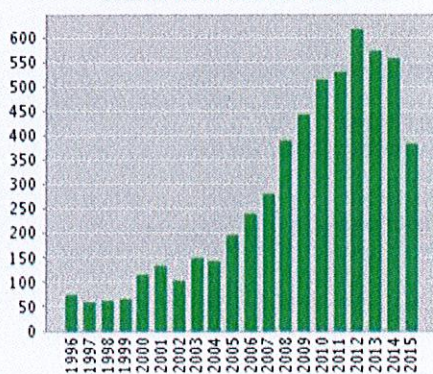
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Page 1 of 18

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1. Quantum cluster theories By: Maier, T; Jarrell, M; Pruschke, T; et al. REVIEWS OF MODERN PHYSICS Volume: 77 Issue: 3 Pages: 1027-1080 Published: JUL 2005	53	59	55	66	51	547	49.73
2. Numerical renormalization group method for quantum impurity systems By: Bulla, Ralf; Costi, Theo A.; Pruschke, Thomas REVIEWS OF MODERN PHYSICS Volume: 80 Issue: 2 Pages: 395-450 Published: APR-JUN 2008	77	76	81	77	50	541	67.62
3. Anomalous normal-state properties of high-T-c superconductors: Intrinsic properties of strongly correlated electron systems? By: Pruschke, T; Jarrell, M; Freericks, JK ADVANCES IN PHYSICS Volume: 44 Issue: 2 Pages: 187-210 Published: MAR-APR 1995	16	12	20	13	8	351	16.71
4. The ALPS project release 1.3: Open-source software for strongly correlated systems By: Albuquerque, A. F.; Alet, F.; Corboz, P.; et al. Group Author(s): ALPS Collaboration	56	47	49	53	19	346	38.44




Conference: 17th International Conference on Magnetism (ICM 2006) Location: Kyoto, JAPAN Date: AUG 20-25, 2006
 Sponsor(s): Int Union Pure & Appl Phys
 JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS Volume: 310
 Issue: 2 Pages: 1187-1193 Part: 2 Published: MAR 2007

5.	HUBBARD-MODEL AT INFINITE DIMENSIONS - THERMODYNAMIC AND TRANSPORT-PROPERTIES	7	6	9	3	6	230	10.00
	By: PRUSCHKE, T; COX, DL; JARRELL, M PHYSICAL REVIEW B Volume: 47 Issue: 7 Pages: 3553-3565 Published: FEB 15 1993							
6.	Numerical renormalization group calculations for the self-energy of the impurity Anderson model	12	13	10	8	6	190	10.56
	By: Bulla, R; Hewson, AC; Pruschke, T JOURNAL OF PHYSICS-CONDENSED MATTER Volume: 10 Issue: 37 Pages: 8365-8380 Published: SEP 21 1998							
7.	Nonlocal dynamical correlations of strongly interacting electron systems	23	17	16	16	12	157	8.72
	By: Hettler, MH; Tahvildar-Zadeh, AN; Jarrell, M; et al. PHYSICAL REVIEW B Volume: 58 Issue: 12 Pages: R7475-R7479 Published: SEP 15 1998							
8.	Numerical renormalization group approach to Green's functions for quantum impurity models	21	11	19	11	10	133	13.30
	By: Peters, Robert; Pruschke, Thomas; Anders, Frithjof B. PHYSICAL REVIEW B Volume: 74 Issue: 24 Article Number: 245114 Published: DEC 2006							
9.	Mutual experimental and theoretical validation of bulk photoemission spectra of Sr_{1-x}CaxVO₃	8	12	10	11	5	125	10.42
	By: Sekiyama, A; Fujiwara, H; Imada, S; et al. PHYSICAL REVIEW LETTERS Volume: 93 Issue: 15 Article Number: 156402 Published: OCT 8 2004							
10.	Kinks in the dispersion of strongly correlated electrons	11	14	16	4	8	111	12.33
	By: Byczuk, K.; Kollar, M.; Held, K.; et al. NATURE PHYSICS Volume: 3 Issue: 3 Pages: 168-171 Published: MAR 2007							

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