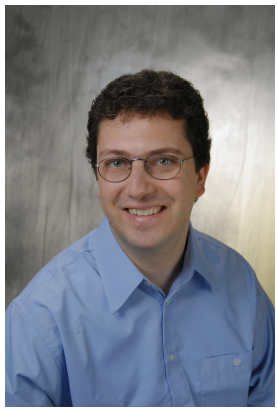
Priv.-Doz. Dr. rer. nat. Salvatore R. Manmana

Personal



Date of Birth:	November 16th, 1976 in Catania (Italy)	
Citizenship:	Italian	
Marital Status:	Single	
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Employments

Since Apr. 2018	**Coordinator for Teaching in Theoretical Physics**, Inst. f. Theoretical Physics, U. Göttingen (permanent employment since Nov. 2019; intermission Nov. 2020 – Sep. 2021)
Nov. 2020 – Sep. 2021	**Substitute Professor** (W3, temporary), Department of Physics, U. Marburg (Germany)
Apr. 2016 – Jan. 2018	**Substitute Professor** (W2, temporary), Inst. f. Theoretical Physics, U. Göttingen
Oct. 2012 – Oct. 2019	**'Akademischer Rat auf Zeit'** (with Prof. T. Pruschke until Jan. 2016) Institute for Theoretical Physics, U. Göttingen (intermission April 2016 – January 2018)
July 2010 – Sept. 2012	**Research Associate** at JILA (U Colorado & NIST) and Department of Physics at U Colorado with Profs. A.M. Rey, V. Gurarie, and M.J. Holland (Boulder, Colorado, USA)
Jan. 2007 – June 2010	**Postdoc** with Prof. F. Mila (EPF Lausanne, Switzerland)
Oct. 2003 – Dec. 2006	External Member of the European Graduate College at the University of Marburg
Oct. 2002 – Dec. 2006	Scientific Assistant (doctoral student) at the University of Stuttgart
May 2001 – Sep. 2002	Student Assistant, Faculty of Physics at the University of Göttingen
Oct. 2000 – Mar. 2001	Stud. Ass. for the Evaluation of the Undergraduate Studies in Physics (U. Göttingen)
Oct. 1999 – Mar. 2000	Teaching Assistant (Laboratory Course, University of Göttingen)
Spring 1998	Stud. Ass. for Lecture Notes "Physik auf dem Computer" by Prof. H. Herrmann (U. Stuttgart)
Oct. 1996 – June 1998	Stud. Ass. at the Particle Accelerator of the Max-Planck-Inst. for Metal Research (Stuttgart)

Education

June 2015	Habilitation in Theoretical Physics, University of Göttingen with Prof. T. Pruschke Thesis Title (cumulative): **"Quantum Magnetism, Nonequilibrium Dynamics and Quantum Simulation of Correlated Quantum Systems"**
Oct. 2002 – Dec. 2006	Doctoral Student at the Universities of Stuttgart and Marburg (Germany) Thesis Title: **"Nonequilibrium Dynamics of Strongly Correlated Quantum Systems"** Supervisors: Prof. R.M. Noack and Prof. A. Muramatsu
Oct. 1999 – Sept. 2002	University of Göttingen (Germany): Diploma in Physics, June 2002 Thesis Title: **"Vom Bandisolator zum Mott-Hubbard-Isolator in einer Raumdimension"** Supervisor: Prof. K. Schönhammer
Sept. 1998 – July 1999	Eötvös University Budapest (Hungary): University Studies in Physics Student Project: **"Decoherence in a Semi-Classical Two-Body System"**; Advisor: Dr. Gy. Bene
1996 – 1998	University of Stuttgart (Germany): University Studies in Physics
June 1996	"Abitur" (high-school degree) at Friedrich-Schiller-Gymnasium Ludwigsburg (Germany)

Awards

2011	DARPA-OLE best theoretical paper award, $2000 travel money [PRL 107, 115301 (2011)].
Apr. 1997 – Sept. 2002	Scholarship of the "Friedrich–Ebert–Stiftung".
1997	Second Prize at the Youth Research Competition "Jugend Forscht" (Stuttgart, Germany). Special Award: Internship at the IBM Research Lab (Böblingen, Germany).
1996	Second Prize at the "International Young Physicists' Tournament" (German National Team).

Funding and Project Management

- Principal Investigator in the DFG Research Unit FOR1807 *"Advanced Computational Methods for Strongly Correlated Quantum Systems"* (2nd funding period),
  Project P7: "Finite-Temperature Dynamics with Matrix Product State and Cluster Approaches", U. Göttingen with Profs. M. Daghofer [U. Stuttgart] and T. Pruschke.
- Principal Investigator in the SFB/CRC 1073 *"Atomic scale control of energy conversion"*,
  Project B03: "Relaxation, thermalization, transport and condensation in highly excited solids", U. Göttingen with Profs. P. Blöchl [TU Clausthal], S. Kehrein, and T. Pruschke.
- Principal Investigator in the Helmholtz Virtual Institute *"New States of Matter and their Excitations"*,
  Project P6: "Thermodynamics and dynamics of highly frustrated magnets"
  (Oct. 2014: stepping in as PI for Prof. A. Honecker after leaving Göttingen to U. Cergy-Pontoise, France).
  Project duration: October 2012 - June 2016.
- Principal Investigator for projects to allocate CPU time at the HLRN (Göttingen/Hannover/Berlin)
- Principal Investigator for the project *'Quantum Many Body States in Systems of Ultracold Quantum Gases'* for the allocation of CPU time at the Janus supercomputer (2011/12, CU Boulder).
- Project Manager of the project *'Simulating Frustrated Quantum-Magnetic Materials'* for the allocation of CPU time at the Swiss National Supercomputing Center (CSCS) in Manno (2009/10).

Professional Service and Memberships

- Organization of the conference *"Computational Methods for Quantum Many-Body Systems: Algorithms, Models and Materials"* of the DFG Research Unit FOR 1807, Göttingen (with Prof. F. Heidrich-Meisner, Göttingen, Prof. R.M. Noack, Marburg, and Prof. F. Assaad, Würzburg).
- Organization of the *"Mini-School on Tensor Network Methods",* Marburg (with Profs. Ö. Legeza, Budapest, and R.M. Noack, Marburg)
- U4 initiative for the Internationalization of Curricula (Universities Groningen (Netherlands), Ghent (Belgium), Uppsala (Sweden) and Göttingen): coordination of activities (e.g., workshops) and the collection of teaching material for the improvement and further development of the computer education in the physics curriculum.
- Organization of the *"Korrelationstage 2017"*, Dresden (with Prof. S. Eggert, U. Kaiserslautern, and Prof. A. Mackenzie, MPI Chem. Phys. of Solids, Dresden).
- *Reviewer* Group of the John von Neumann Institute for Computing Jülich (Germany, invited).
- *Reviewer* for grant proposals at the National Science Foundation (NSF, USA).
- Member of *the search committee* "W2-Professur Theoretische Biophysik", U. Göttingen.
- Mentor for scholarship holders of the *Friedrich-Ebert-Stiftung.*
- *Invited reviewer and exam committee*, PhD defense of L. Cevolani (Institut d'Optique Paris Orsay, France).
- *Invited Examiner* at the "Scuola Superiore di Catania", University of Catania (Italy).
- Member of various *PhD exam committees* (U. Göttingen 2016-2019).
- Organization of a *PI-Meeting* for the Helmholtz Virtual Institute "New States of Matter and their Excitations", Göttingen.
- Organization of the *Mini-Workshop* "Numerical Methods for Time Evolution", CRC 1073, U. Göttingen (2014).
- *Chairman* at various international meetings (e.g., at the International Institute of Physics, Natal, Brazil).
- 2009/10: Organization of *joint 'Journal Club'* of the CTMC and the Laboratory for Quantum Magnetism at EPFL.
- Referee for the following journals:
  Physical Review Letters, Physical Review A, B, & E, Europhysics Letters, New Journal of Physics, Journal of Statistical Mechanics: Theory and Experiment, Journal of Physics A: Mathematical and Theoretical,

Journal of Physics B: Atomic, Molecular & Optical Physics, Journal of Physics: Condensed Matter, SciPost, Quantum, Computer Physics Communications, Physica Scripta, European Physical Journal B, Physica Status Solidi B, and Annals of Physics.

- Member of the *American Physical Society* (APS), of the *German Physical Society* (DPG) and of the *"Deutscher Hochschulverband"* (DHV).

Teaching Experience

2023	Lecture *"Computergestütztes wissenschaftliches Rechnen"*
2023	Coordinator for the courses *"Analytische Mechanik"* (Prof. K.-H. Rehren) and *"Quantenmechanik I"* (Prof. S. Kehrein).
2022/23	Coordinator for the courses *"Statistische Mechanik"* (Prof. M. Krüger) and "*Klassische Feldtheorie"* (Prof. F. Heidrich-Meisner).
2022	Seminar *"Classical-Quantum Connections in Theoretical Physics*" (shared with Prof. P. Sollich).
2022	Coordinator for the courses *"Analytische Mechanik"* (Prof. L. Covi), *"Quantenmechanik I"* (Prof. M. Krüger), and *"Computergestütztes wissenschaftliches Rechnen"* (Prof. F. Heidrich-Meisner).
2021/22	Coordinator for the courses *"Statistische Mechanik"* (Prof. M. Krüger) and "*Klassische Feldtheorie"* (Prof. K.-H. Rehren).
2021	Lecture and seminar *"Quantum Simulators"* (U. Marburg). Lecture and hands-on-tutorial *"Computational Physics II"* (U. Marburg).
2020/21	Lecture and seminar *"Symmetries in Physics"* (U. Marburg). Lecture and hands-on-tutorial *"Computational Physics I"* (U. Marburg).
2020	Coordinator for the courses *"Analytische Mechanik"* (Prof. L. Covi), *"Quantenmechanik I"* (Prof. R. Kree), and *"Computergestütztes wissenschaftliches Rechnen"* (Prof. S. Klumpp).
2019/20	Lecture and seminar *"Symmetries in Physics"*.
2019/20	Coordinator for the courses *"Statistische Mechanik"* (Prof. P. Sollich) and "*Klassische Feldtheorie"* (Prof. S. Kehrein).
2019	Coordinator for the courses *"Analytische Mechanik"* (Prof. M. Müller), *"Quantenmechanik I"* (Prof. F. Heidrich-Meisner), and *"Computergestütztes wissenschaftliches Rechnen"* (Prof. S. Klumpp).
2018/19	Coordinator for the courses *"Statistische Mechanik"* (Prof. P. Sollich) and "*Klassische Feldtheorie"* (Prof. S. Kehrein).
2018	Coordinator for the courses *"Analytische Mechanik"* (Prof. S. Schumann), *"Quantenmechanik I"* (Prof. K.-H. Rehren), and *"Computergestütztes wissenschaftliches Rechnen"* (Prof. M. Müller).
2017/18	Lecture and seminar *"Advanced Algorithms for Computational Physics"* (U. Göttingen).
2017	Lecture and seminar *"Symmetries in Physics"* (U. Göttingen).
2016/17	Lecture *"Quantenmechanik II"* (U. Göttingen).
2016	Lecture *"Computergestütztes wissenschaftliches Rechnen"* (course lecture for 2nd year bachelor students, U. Göttingen).
2015/16	Lecture *"Quantum Phase Transitions"* (U. Göttingen).
2015	Lecture *"Advanced Solid State Theory"* and accompanying seminar (co-lecturer with Prof. T. Pruschke, U. Göttingen).
2014/15	Lecture *"Fortgeschrittene Algorithmen der numerischen Physik*" (U. Göttingen).
2014	Lecture *"Computergestütztes wissenschaftliches Rechnen II"* (course lecture for 1st year bachelor students, U. Göttingen).
2013/14	Main Assistant *Thermodynamik und statistische Mechanik* (Prof. T. Pruschke, U. Göttingen).
2013	Lecture and accompanying seminar Quantum Simulators (U. Göttingen).
2012/2013	Main Assistant *Analytische Mechanik* (Prof. K.-H. Rehren, U. Göttingen).
2012/2013	Substitute Lecturing *Solid State Theory* (Prof. T. Pruschke, U. Göttingen).

2009 – 2010 Co-supervision of the students' seminar on *Entanglement in Quantum Many Body Systems and Quantum Computing* (with Prof. F. Mila, EPFL).
2008 – 2010 Main Assistant *Physique numérique I* (Prof. L. Villard, EPFL).
2008 Teaching Assistant *Mécanique quantique II* (Prof. F. Mila, EPFL).
2007 Teaching Assistant *Physique des solides avancée I* (Dr. C. Mudry, PSI Villingen).
2006 Teaching Assistant *Theory of Phase Transitions II* (Prof. A. Muramatsu, Stuttgart).
2005 Teaching Assistant *Theory of Phase Transitions I* (Prof. A. Muramatsu, Stuttgart).
2005 Main Assistant *Simulationsmethoden in der Physik I* (Prof. L. Santos, Stuttgart).
2004 Teaching Assistant *Solid State Theory II* (Prof. A. Muramatsu, Stuttgart).
2004 Main Assistant and substitute lecturing *Simulationsmethoden in der Physik I* (PD J. Main, Stuttgart).
2003 Teaching Assistant *Physik auf dem Computer I* (PD J. Main, Stuttgart).
2001 Conception and realization of the *Computer Crash Course* (U. Göttingen).
2000 Teaching Assistant *Physikalisches Praktikum für Nebenfächler* (Prof. Lieb, Göttingen).

Supervision and Co-Supervision of Students

PhD theses:

- *Time-dependent spectral functions in quasi-2D systems (title preliminary)*, Karun Gadge, U. Göttingen, PhD thesis started March 2022.
- *Matrix Product State Approaches to Non-equilibrium Spectral Quantities of Strongly Correlated Fermions in One Dimension*, Constantin Meyer, U. Göttingen, April 2022.
- *Quench dynamics in ladder systems (title preliminary)*, Kristof Harms, U. Göttingen, PhD thesis starting Jan. 2017 (co-supervised with Prof. S. Kehrein).
- *Topological and Nonequilibrium Superconductivity in low-dimensional strongly correlated quantum systems*, Sebastian Paeckel, U. Göttingen, Feb. 2020 (*summa cum laude*).
  Born-Franck dissertation award of the Heraeus foundation and the Faculty for Physics.
- *Photoexcitations of Model Manganite Systems using Matrix-Product States*, Thomas Köhler, U. Göttingen, Jan. 2019.
- *Unconventional Phases in two-dimensional Hubbard and Kondo-Lattice Models by Variational Cluster Approaches*, Benjamin Lenz, U. Göttingen, Dec. 2016 (*summa cum laude*; main advisor T. Pruschke/ S.R.Manmana).
  Berliner-Ungewitter award for the best PhD in the term 2016/17.
- *Finite-temperature dynamics of low-dimensional quantum systems with DMRG methods*, Alexander C. Tiegel, U. Göttingen, July 2016 (main advisor A. Honecker/S.R. Manmana).
- *Transport in tilted Mott insulators and Soliton dynamics on optical lattices*, Chester P. Rubbo, JILA/U. Colorado Boulder, summer 2012 (main advisor A.M. Rey).

Master theses:

- *Time evolution of spectral functions in quasi-2D electronic systems (title preliminary)*, Manuel Buriks, U. Göttingen (started summer 2023).
- *Rate Functions and the Approach to Adiabaticity in Quantum Many Body Systems,* Vibhu Mishra, U. Göttingen, February 2023 (co-supervision, main supervisor Prof. S. Kehrein).
- *Matrix Product State Simulation of a Scanning Tunneling Microscope Tip Moving over a Hubbard Chain*, Tobias Blum, U. Marburg, March 2022 (shared supervision with Prof. R.M. Noack).
- *Study of Superconductivity Out of Equilibrium by Combining Matrix Product States with Mean Field Theory*, Svenja Marten, U. Göttingen, November 2021 (direct supervisor, in collaboration with A. Kantian, U. Uppsala, Sweden).
- *Groundstate Phase Diagrams of Variants of the Two-Leg t-J Ladder at Low Fillings*, Steffen Bollman, U. Göttingen, Oct. 2021

- *Dynamics in a Holstein exciton-phonon model for light harvesting*, Kevin Kessing, U. Göttingen, Nov. 2020 (shared supervision with J. Cao, MIT, Cambridge, USA).
- *Light-Induced Dynamics of Correlations in t-J Chains Using Matrix Product States*, Alexander Osterkorn, U. Göttingen, Aug. 2018;
  Berliner-Ungewitter award for an excellent Master degree.
- *The adaptive cross approximation for the dynamics of quantum many body systems using matrix product states*, Holger Thyen, U. Göttingen, Sep. 2017.
- *Model Study of Light Absorption in a Manganite*, Ole Schumann, U. Göttingen, Nov. 2016;
  Berliner-Ungewitter award for an excellent Master degree.
- *Andreev reflection in one-dimensional Hubbard systems*, Mirco Marahrens, U. Göttingen, Dec. 2014.
- *Dynamics of 1D quantum spin chains at finite temperatures*, Thomas Köhler, U. Göttingen, Dec. 2013 (main supervisors A. Honecker/T. Pruschke).

Bachelor theses:

- *Photocurrent in the ferroelectric phase? A study of the Falicov-Kimball model,*
  Samira Altpeter, U Göttingen, Oct. 2023.
- *Investigation of possible photocurrents when exciting the bond-ordered phase of the ionic Hubbard model,*
  Moritz Abel, U. Göttingen, Oct. 2023.
- *Modeling quantum systems with Matrix Product States on quantum computers,*
  Leonard Kappler, U. Göttingen, Oct. 2023.
- *Numerical treatment of spin-selective photoexcitations of ionic Hubbard chains using matrix product states*, Svenja Marten, U. Göttingen, Oct. 2019.
- *Classical Simulation of Instantaneous Quantum Computing using Matrix Product States*, Leander Thiessen, U. Göttingen, Aug. 2019.
- *Loschmidt amplitude in periodically driven many-body localized spin chains*, Francisco Castela Simão, U. Göttingen, Oct. 2017.
- *Evolution of correlations in low-dimensional t-J models after a quantum quench*, Ansgar Kühn, U. Göttingen, Oct. 2017.
- *Numerical investigation of spontaneous breaking of time translation symmetry*, Timo Mutas, U. Göttingen, Aug. 2017.
- *Finite-temperature behaviour of Green's-function based topological invariants*, Fabian Heimann, U. Göttingen, June 2017.
- *Real Time Dynamics of Pairs of Holes in Low-Dimensional t-J models*, Jurek Bauer, U. Göttingen, May 2017.
- *Lieb-Robinson-bounds in systems with long-range interactions*, Kossi Saka, U. Göttingen, Jan. 2015.
- *Kink and antikink excitations of the S=1/2 antiferromagnetic Heisenberg model on kagome stripes,* Marcel Möller, U. Göttingen, July 2013.

Internships:

- *Dynamics in low-dimensional quantum systems*, Vibhu Mishra, U. Göttingen (April – September 2021).
- *Superconductivity in frustrated low-dimensional t-J systems*, Friederike Horn, U. Göttingen (April-July 2019).
- *VCA and CPT study of 1D Hubbard Ladder Systems*, Rhishabh Khare (IISER Kolkata, internship April-June 2014).

Public Outreach

- XLAB (Göttingen), ISC Course Quantum Optics: Talk and discussion round "Quantum Phenomena" (August 2023).
- Science Slam: „Was ist ein Teilchen?", KHG Göttingen (June 2021, online).
- Public Talk: "Forschung und Erneuerbare Energien", Klima-Café des Schülerforschungszentrums Nordhessen (Feb. 2020, Kassel).
- Public Talk: "Forschung und Erneuerbare Energien", kath. Hochschulgemeinde Göttingen (KHG, Jan. 2020).
- Invited talk „Saturday Morning Science", jDPG Göttingen: "Quantenphänomene" (Nov. 2019).
- Public Talk: "Quantenphänomene – von den Grundlagen zur modernen Technologieanwendung" ("Quantum Phenomena – from the basics to modern technology"), *Nacht des Wissens* at U. Göttingen (Jan. 2019).
- Public Talk: "Weltbilder in der Physik" ("Worldviews in Physics"), KHG Göttingen (Jan. 2019).
- Public Talk: "Die Zeit in der Modernen Physik" ("Time in Modern Physics"), KHG Göttingen.
- Interview in the presentation of the Institute for Theoretical Physics (U. Göttingen) at APS TV 2015 (see https://www.youtube.com/watch?v=EgB874iiw3E).
- Academy for highly gifted scholars ("Deutsche Schülerakademie 2007"), Braunschweig: Concept and supervision of a course on "Light and Matter" (with C. Schneemann, Albert-Einstein-Institute Golm).
- Public Talk: The Physics of Star-Trek (U. Göttingen, summer 2001).

Further Qualifications and Activities

Computer Skills:

- Operating Systems: Unix/Linux
- Programming Languages: C/C++
- Scripting languages, CAS systems: Perl, Matlab, Mathematica
- Experience with Compute Clusters: IBM p690-cluster (JUMP, NIC Jülich); NEC-SX8 (HLR Stuttgart), Cray XE6 (ARSC), local Linux compute clusters at the Universities of Mainz, Göttingen, Marburg, Stuttgart, EPF Lausanne, and at JILA.

Language Skills:

- Fluent: German, Italian, English
- Intermediate: French, Latin
- Basics: Hungarian

Further activities:

2013 – 2018: 'Parish Council' of the catholic students organisation (KHG Göttingen, Germany).
Winter 2012: 'Schola Cantorum' (Choir at a local catholic church, Boulder, USA).
Autumn 2011: 'Engineers without Borders' (Boulder, USA).
Spring 2010: Jazz Choir of the EJMA (Lausanne, Switzerland).
Spring 2002: Speaker of the Students' Representatives (U. Göttingen).
2000 – 2002: Students' Choir "Unicante" (U. Göttingen).
1997 – 2002: Amnesty International 'Urgent Actions'.
1997 – 2002: Students' Representatives (U. Stuttgart and U. Göttingen); student member of the Faculty Council and in committees for the reform of the undergraduate studies.
1993 – 1996: Active Participant of the "Kepler-Seminar for Natural Sciences" (Bosch foundation, Stuttgart).
1993 – 1994: Engagement as Caroler ('Sternsinger') at the parish Dreieinigkeitskirche Ludwigsburg.
1989 – 1994: Acolyte at Dreieinigkeitskirche Ludwigsburg.

Publications

Researcher-ID: C-9822-2011
Number of citations (August 24th 2023): 3295/3503; h-index: 26/27 (Web of Science / SAO NASA-ADS)

Five most significant research articles:

1. S.R. Manmana, S. Wessel, R.M. Noack, and A. Muramatsu,
Strongly correlated fermions after a quantum quench,
Phys. Rev. Lett. **98**, 210405 (2007).

2. A.V. Gorshkov, S.R. Manmana, G. Chen, J. Ye, E. Demler, M.D. Lukin, and A.M. Rey,
Tunable Superfluidity and Quantum Magnetism with Ultracold Polar Molecules,
Phys. Rev. Lett. **107**, 115301 (2011); featured by Synopsis in Physics and as research highlight at JILA.
DARPA-OLE best theoretical paper award.

3. F.H.L. Essler, S. Kehrein, S.R. Manmana, and N.J. Robinson,
Quench Dynamics in a Model with Tuneable Integrability Breaking,
Phys. Rev. B **89**, 165104 (2014).

4. S.R. Manmana, A.M. Essin, R.M. Noack, and V. Gurarie,
Topological invariants and interacting one-dimensional fermionic systems,
Phys. Rev. B **86**, 205119 (2012) – Editors' Suggestion.

5. A.C. Tiegel, S.R. Manmana, T. Pruschke, and A. Honecker,
Matrix product state formulation of frequency-space dynamics at finite temperatures,
Phys. Rev. B (rapid communication) **90**, 060406(R) (2014).

Review Articles, Lecture Notes, and Method Development:

6. S. Paeckel, T. Köhler, A. Swoboda, S.R. Manmana, U. Schollwöck, and C. Hubig,
Time evolution methods for matrix-product states,
Annals of Physics **411**, 167998 (2019).

7. R.M. Noack, S.R. Manmana, S. Wessel, and A. Muramatsu,
Studying Time-Dependent Quantum Phenomena with the Density-Matrix Renormalization Group,
Conference Proceedings for the Heraeus summer school "Computational Many-Particle Physics" in Greifswald, Springer Lecture Notes in Physics **739**, 637–652 (2008).

8. R.M. Noack and S.R. Manmana,
Diagonalization- and Numerical Renormalization-Group-Based Methods for Interacting Quantum Systems,
Lecture Notes for the Conference Proceedings of the *"IX. Training Course in the Physics of Correlated Electron Systems and High-Tc Superconductors"* in Vietri sul Mare (Italy),
AIP Conference Proceedings **789**, 93 – 163 (2005).

9. S.R. Manmana, A. Muramatsu, and R.M. Noack,
Time Evolution of One-Dimensional Quantum Many Body Systems,
Conference Proceedings *"IX. Training Course in the Physics of Correlated Electron Systems and High-Tc Superconductors"*, in Vietri sul Mare (Italy)
AIP Conference Proceedings **789**, 269 – 278 (2005).

Preprints:

10. S. Marten, G. Bollmark, T. Köhler, S.R. Manmana, and A. Kantian,
Transient superconductivity in three-dimensional Hubbard systems by combining matrix product states and self-consistent mean-field theory,
arXiv:2207.09841, submitted to SciPost Physics.

11. C. Meyer and S.R. Manmana,
Photoinduced spinful excitons in Hubbard systems with magnetic superstructures,
arXiv:2109.07037, submitted to Phys. Rev. B.

12. M. Keunecke, D. Schmitt, M. Reutzel, M. Weber, C. Möller, G.S.M. Jansen, T.A. Mishra, A. Osterkorn, W. Bennecke, K. Pierz, H.W. Schumacher, D.M. Pakdehi, D. Steil, S.R. Manmana, S. Steil, S. Kehrein, H.C. Schneider, and Stefan Mathias,
Direct Access to Auger recombination in Graphene,
arXiv:2012.01256, submitted to Phys. Rev. Lett.

Further publications in Letter Journals, Rapid Communications, and Editors' Suggestions:

13. A. Osterkorn, C. Meyer, and S.R. Manmana,
In-Gap Band Formation in a Periodically Driven Charge Density Wave Insulator,
Nature Commun. Phys. **6**, 245 (2023); invited contribution to *Focus Collection on Floquet engineering of quantum materials*.

14. R. K. Kessing, P.-Y. Yang, S.R. Manmana, and J. Cao,
Long-range non-equilibrium coherent tunneling induced by fractional vibronic resonances,
J. Chem. Phys. Lett. 2022, 13, 29, 6831-6838.

15. M. Keunecke, M. Reutzel, D. Schmitt, A. Osterkorn, T.A. Mishra, C. Möller, W. Bennecke, G. S. M. Jansen, D. Steil, S.R. Manmana, S. Steil, S. Kehrein, and S. Mathias,
Electromagnetic dressing of the electron energy spectrum of Au(111) at high momenta,
Phys. Rev. B (rapid communication) **102**, 161403(R) (2020).

16. S. Paeckel, B. Fauseweh, A. Osterkorn, T. Köhler, D. Manske, and S.R. Manmana,
Detecting Superconductivity Out-of-Equilibrium,
Phys. Rev. B (rapid communication) **101**, 180507(R) (2020).

17. J. Becker, T. Köhler, A.C. Tiegel, S.R. Manmana, S. Wessel, and A. Honecker,
Finite-temperature dynamics and thermal intra-band magnon scattering in Haldane spin-one chains,
Phys. Rev. B (rapid communication) **96**, 060403(R) (2017).

18. E.S. Klyushina, A.C. Tiegel, B. Fauseweh, A.T.M.N. Islam, J. Park, B. Klemke, A. Honecker, G.S. Uhrig, S.R. Manmana, and B. Lake,
Magnetic excitations in the S=1/2 antiferromagnetic-ferromagnetic chain compound $Ba_2Cu_2V_2O_8$ at zero and finite temperature,
Phys. Rev. B (rapid communication) **93**, 241109(R) (2016).

19. B. Lenz, S.R. Manmana, T. Pruschke, F.A. Assaad, and M. Raczkowski,
Mott Quantum Criticality in the Anisotropic 2D Hubbard Model,
Phys. Rev. Lett. **116**, 086403 (2016).

20. J. Eisert, M. van den Worm, S.R. Manmana, and M. Kastner,
Breakdown of quasi-locality in long-range quantum lattice models,
Phys. Rev. Lett. **111**, 260401 (2013).

21. Y.H. Matsuda, N. Abe, S. Takeyama, H. Kageyama, P. Corboz, A. Honecker, S.R. Manmana, G.R. Foltin, K.P. Schmidt, and F. Mila,
Magnetization of $SrCu_2(BO_3)_2$ in ultrahigh magnetic fields up to 118 T,
Phys. Rev. Lett. **111**, 137204 (2013).

22. F. Michaud, S.R. Manmana, and F. Mila,
Realization of higher Wess-Zumino-Witten models in spin chains,
Phys. Rev. B (rapid communication) **87**, 140404(R) (2013) – Editors' Suggestion.

23. S.R. Manmana, E.M. Stoudenmire, K.R.A. Hazzard, A.M. Rey, and A.V. Gorshkov,
Topological phases in ultracold polar-molecule quantum magnets,
Phys. Rev. B (rapid communication) **87**, 081106(R) (2013).

24. K.R.A. Hazzard, S.R. Manmana, M. Foss-Feig, and A.M. Rey,
Far from equilibrium quantum magnetism with ultracold polar molecules,
Phys. Rev. Lett. **110**, 075301 (2013); research highlight at JILA.

25. L. Bonnes, K.R.A. Hazzard, S.R. Manmana, A.M. Rey, and S. Wessel,
Adiabatic loading of one-dimensional SU(N) alkaline earth fermions in optical lattices,
Phys. Rev. Lett. **109**, 205305 (2012); research highlight at JILA.

26. F. Michaud, F. Vernay, S.R. Manmana, and F. Mila,
Antiferromagnetic Spin-S Chains with Exactly Dimerized Ground States,
Phys. Rev. Lett. **108**, 127202 (2012).

27. S.R. Manmana, J.-D. Picon, K.P. Schmidt, and F. Mila,
Unconventional magnetization plateaus in a Shastry-Sutherland spin tube,
Europhysics Letters (EPL) **94**, 67004 (2011).

28. S.A. Zvyagin, E. Čižmár, M. Ozerov, J. Wosnitza, R. Feyerherm, S.R. Manmana, and F. Mila,
Field-Induced Gap in a Quantum Spin-1/2 Chain in a Strong Magnetic Field,
Phys. Rev. B (rapid communication) **83**, 060409(R) (2011).

29. F. Heidrich-Meisner, S.R. Manmana, M. Rigol, A. Muramatsu, A.E. Feiguin, and E. Dagotto,
Quantum distillation: dynamical generation of low-entropy states of strongly correlated fermions in an optical lattice,
Phys. Rev. A (rapid communication) **80**, 041603(R) (2009).

30. S.R. Manmana and F. Mila,
Torque anomalies at magnetization plateaux in quantum magnets with Dzyaloshinskii-Moriya interactions,
Europhysics Letters (EPL) **85**, 27010 (2009).

Further Regular Articles in Peer Reviewed Journals:

31. S. Bollmann, A. Osterkorn, E. König, and S.R. Manmana,
Lifshitz transition in the phase diagram of two-leg t-J ladder systems at low filling,
Phys. Rev. B **108**, 155148 (2023).

32. J. Stolpp, T. Köhler, S.R. Manmana, E. Jeckelmann, F. Heidrich-Meisner, and S. Paeckel,
Comparative Study of State-of-the-Art Matrix-Product-State Methods for Lattice Models with Large Local Hilbert Spaces,
Computer Physics Communications **269**, 108106 (2021).

33. T. Köhler, S. Paeckel, C. Meyer, and S.R. Manmana,
Formation of Spatial Patterns by Spin-selective Excitations of Interacting Fermions,
Phys. Rev. B **102**, 235166 (2020).

34. O. Schnaack, N. Bölter, S. Paeckel, S.R. Manmana, S. Kehrein, and M. Schmitt,
Tripartite information, scrambling, and the role of Hilbert space partitioning in quantum lattice models,
Phys. Rev. B **100**, 224302 (2019).

35. A. Kühn, L. Cevolani, and S.R. Manmana,
Suppression of the horizon effect in pairing correlation functions of t-J chains after a quantum quench,
Phys. Rev. A **98**, 013616 (2018).

36. T. Köhler, S. Rajpurohit, O. Schumann, S. Paeckel, F.R.A. Biebl, M. Sotoudeh, S.C. Kramer, P.E. Blöchl, S. Kehrein, and S.R. Manmana,
Relaxation of photoexcitations in polaron-induced magnetic microstructures,
Phys. Rev. B **97**, 235120 (2018).

37. G. Ehlers, B. Lenz, S.R. Manmana, and R.M. Noack,
Anisotropy crossover in the frustrated Hubbard model on four-chain cylinders,
Phys. Rev. B **97**, 035118 (2018).

38. S. Paeckel, T. Köhler, and S.R. Manmana,
Automated construction of U (1)-invariant matrix-product operators from graph representations,
SciPost Phys. **3**, 035 (2017).

39. B. Lenz, R. Gezzi, and S.R. Manmana,
Variational Cluster Approach to Superconductivity and Magnetism in the Kondo Lattice Model,
Phys. Rev. B **96**, 155119 (2017).

40. S.R. Manmana, M. Möller, R. Gezzi, and K.R.A. Hazzard,
Correlations and enlarged superconducting phase of t-J⊥ chains of ultracold molecules on optical lattices
Phys. Rev. A **96**, 043618 (2017); one figure selected for the Phys. Rev. A Kaleidoscope.

41. A.C. Tiegel, A. Honecker, T. Pruschke, A. Ponomaryov, S.A. Zvyagin, R. Feyerherm, and S.R. Manmana,
Dynamical properties of the sine-Gordon quantum spin magnet Cu-PM at zero and finite temperature,
Phys. Rev. B **93**, 104411 (2016); one figure selected for the Phys. Rev. B Kaleidoscope.

42. K.R.A. Hazzard, M. v. d. Worm, M. Foss-Feig, S.R. Manmana, E. Dalla Torre, T. Pfau, M. Kastner, and A.M. Rey,
Quantum correlations and entanglement in far-from-equilibrium spin systems,
Phys. Rev. A **90**, 063622 (2014).

43. G.R. Foltin, S.R. Manmana, and K.P. Schmidt,
Exotic magnetization plateaus in a quasi-two-dimensional Shastry-Sutherland model,
Phys. Rev. B **90**, 104404 (2014).

44. S. Mandt, A.E. Feiguin, and S.R. Manmana,
Relaxation towards negative temperatures in bosonic systems: Generalized Gibbs ensembles and beyond integrability,
Phys. Rev. A **88**, 043643 (2013).

45. S. Li, S.R. Manmana, A.M. Rey, R. Hipolito, A. Reinhard, J.-F. Riou, L.A. Zundel, and D.S. Weiss,
Self-trapping dynamics in a 2D optical lattice,
Phys. Rev. A **88**, 023419 (2013).

46. J. Carrasquilla, S.R. Manmana, and M. Rigol,
Scaling of the gap, fidelity susceptibility, and Bloch oscillations across the superfluid to Mott insulator transition in the one-dimensional Bose-Hubbard model,
Phys. Rev. A **87**, 043606 (2013).

47. C.P. Rubbo, I.I. Satija, W.P. Reinhardt, R. Balakrishnan, A.M. Rey, and S.R. Manmana,
Quantum dynamics of solitons in strongly interacting systems on optical lattices,
Phys. Rev. A **85**, 053617 (2012); one figure selected for the Phys. Rev. A Kaleidoscope.

48. S.R. Manmana, K.R.A. Hazzard, G. Chen, A.E. Feiguin, and A.M. Rey,
SU(N) magnetism in chains of ultracold alkaline-earth-metal atoms: Mott transitions and quantum correlations,
Phys. Rev. A **84**, 043601 (2011); referred to in research highlight at JILA.

49. C.P. Rubbo, S.R. Manmana, B.M. Peden, M.J. Holland, and A.M. Rey,
Resonantly Enhanced Tunneling and Transport of Ultracold Atoms on Tilted Optical Lattices,
Phys. Rev. A **84**, 033638 (2011).

50. A.V. Gorshkov, S.R. Manmana, G. Chen, E. Demler, M.D. Lukin, and A.M. Rey,
Quantum magnetism with polar alkali-metal dimers,
Phys. Rev. A **84**, 033619 (2011); featured by Synopsis in Physics and as research highlight at JILA.

51. S.R. Manmana, A.M. Läuchli, F.H.L. Essler, and F. Mila,
Phase diagram and continuous pair-unbinding transition of the bilinear-biquadratic S = 1 Heisenberg chain in a magnetic field,
Phys. Rev. B **83**, 184433 (2011).

52. A. Moreno, A. Muramatsu, and S.R. Manmana,
Ground-State Phase Diagram of the 1D t-J model,
Phys. Rev. B **83**, 205113 (2011).

53. F. Michaud, T. Coletta, S.R. Manmana, J.-D. Picon, and F. Mila,
Frustration induced plateaux in S ≥ 1/2 Heisenberg spin ladder systems,
Phys. Rev. B **81**, 014407 (2010).

54. I. Rousochatzakis, S.R. Manmana, A.M. Läuchli, B. Normand, and F. Mila,
Dzyaloshinskii-Moriya anisotropy and non-magnetic impurities in the s=1/2 kagome system $ZnCu_3(OH)_6Cl_2$,
Phys. Rev. B **79**, 214415 (2009).

55. S.R. Manmana, S. Wessel, R.M. Noack, and A. Muramatsu,
Time evolution of correlations in strongly interacting fermions after a quantum quench,
Phys. Rev. B **79**, 155104 (2009).

56. S. Miyahara, J.-B. Fouet, S.R. Manmana, R.M. Noack, H. Mayaffre, I. Sheikin, C. Berthier, and F. Mila,
Uniform and staggered magnetizations induced by Dzyaloshinskii-Moriya interactions in isolated and coupled spin-1/2 dimers in a magnetic field,
Phys. Rev. B **75**, 184402 (2007).

57. The ALPS collaboration (A.F. Albuquerque, et al.)
The ALPS project release 1.3: open source software for strongly correlated systems,
Proceedings of the 17th International Conference on Magnetism,
J. Magn. Mag. Mat. **310**, 1187 (2007).

58. K. Rodriguez, S.R. Manmana, M. Rigol, R.M. Noack, and A. Muramatsu,
Coherent matter waves emerging from Mott-insulators,
New J. Phys. **8**, 169 (2006).
Invited paper to the focus issue "Cold Atoms in Optical Lattices".

59. M. Rigol, S.R. Manmana, A. Muramatsu, R.T. Scalettar, R.R.P. Singh, and S. Wessel,
Comment on *"Novel Superfluidity in a Trapped Gas of Fermi Atoms with Repulsive Interaction Loaded on an Optical Lattice"*,
Phys. Rev. Lett. **95**, 218901 (2005).

60. The ALPS collaboration (F. Alet, et al.)
The ALPS Project: Open Source Software for Strongly Correlated Systems,
J. Phys. Soc. Jpn. Suppl. **74**, 30 (2005).

61. S.R. Manmana, V. Meden, R.M. Noack, and K. Schönhammer,
Quantum Critical Behavior of the One-Dimensional Ionic Hubbard Model,
Phys. Rev. B **70**, 155115 (2004).

Conference Proceedings:

62. M. Ozerov, J.Wosnitza, E. Čižmár, R. Feyerherm, S.R. Manmana, F. Mila, and S.A. Zvyagin,
Field-Induced Gap in the Spin-1/2 Heisenberg Chain Compound Cu-Pyrimidine Dinitrate: ESR Studies in Magnetic Fields up to 63 T,
Journal of Low Temperature Physics **170**, 268-273 (2013).

63. A. Moreno, A. Muramatsu, and S.R. Manmana,
Phase diagram of the 1D t-J model,
Springer "High Performance Computing in Science and Engineering 2011"
Transactions of the HLRS 2011, 153–165 (2012).

64. S.R. Manmana, K. Rodriguez, S. Wessel, and A. Muramatsu,
Simulations of strongly correlated quantum systems out of equilibrium,
Springer "High Performance Computing in Science and Engineering 2007"
Transactions of the HLRS 2007, 71–81 (2008).

65. C. Lavalle, S.R. Manmana, S. Wessel, and A. Muramatsu,
Monte Carlo Simulations of Strongly Correlated and Frustrated Quantum Systems,
Springer "High Performance Computing in Science and Engineering 2006"
Transactions of the HLRS 2006, 137–151 (2007).

66. S.R. Manmana, A. Muramatsu, and R.M. Noack,
Collapse and Revival Starting from a Luttinger Liquid,
Conference Proceedings, ESF Exploratory Workshop "Effective Models for Low-Dimensional Strongly Correlated Systems",
AIP Conference Proceedings **816**, 198 – 203 (2006).

Invited Presentations for Grants and Faculty Positions

- 2019: Professorship "Theoretical Physics of Condensed Matter", U. Osnabrück:
  Dynamics of Nonequilibrium Quantum Many-Body Systems
- 2018: Professorship "Theoretical Physics (focus molecular materials)", U. Erlangen-Nürnberg:
  Dynamics of Nonequilibrium Quantum Many-Body Systems
- 2017: Professorship "Condensed Matter Theory", Inst. for Theoretical Physics, U. Göttingen:
  Dynamical Response and Relaxation of Excitations in Strongly Correlated Quantum Systems
- 2016: Professorship "Physique Théorique de Basse Energie", Univ. de Cergy-Pontoise (France):
  Etats non conventionnels dans les systèmes quantiques fortement corrélés
- 2016: Professorship „Théorie des Systèmes Complexes", U. Toulouse III Paul Sabatier, Toulouse (France):
  Etats non conventionnels dans les systèmes quantiques fortement corrélés
- 2012: Junior Professorship "Theory of Condensed Matter Systems", Johannes Gutenberg-University Mainz:
  Quantenvielteilchenzustände und Nichtgleichgewichtsdynamik in Systemen ultrakalter Gase und stark korrelierter Materialien
- 2011: Emmy-Noether Junior Research Group (Germany):
  Numerical Simulation of Quantum Many-Body States and Non-Equilibrium Dynamics in Systems of Ultracold Gases and Strongly Correlated Materials
- 2007: Junior Professorship "Nonequilibrium Phenomena of Nanosystems", Ludwig-Maximilians-University Munich:
  Nonequilibrium Dynamics of Quantum Many-Body Systems

Invited Presentations at Conferences and Workshops

2022:

- Invited participation in the long-term program "Tensor Networks: Mathematical Structures and Novel Algorithms", Erwin-Schrödinger Institute for Mathematics and Physics, Vienna.
- 7th workshop on "Entanglement in Strongly Correlated Systems", Benasque (Spain)
  i) Application of Matrix-Product States: an introduction (overview talk on the methods)
  ii) Emergent behavior from studying time-dependent spectral functions with MPS

2021:

- Nonequilibrium Quantum Workshop, Krvavec (Slovenia)
  Photoinduced spinful excitons in Hubbard systems with magnetic superstructures
- 2021 School on Tensor Network based approaches to Quantum Many-Body Systems by the European Tensor Network, Barcelona (Spain)
  Lecture and hands-on course "Application of Matrix-Product States to Condensed Matter and Ultracold Gases"
- 2nd Colombian Meeting on "Many-Body Quantum Simulation" at Universidad del Valle (Cali, Colombia, participation online)
  Keynote talk: Time-Evolution Methods for Matrix-Product States
  Course lectures: Quantum Simulators with Cold Gases
- Discussion Workshop "Maschinelles Lernen in der Forschung – Vernetzung und Integration in den Wissenschaftsbetrieb", University of Marburg
  Computers in the physics studies

2019:

- Discussion Workshop of the CRC 1242 “Non-Equilibrium Dynamics of Condensed Matter in the Time Domain”, University of Duisburg-Essen
  Detecting Superconductivity Out-of-Equilibrium
- EPFL – ETHZ Summer School on Quantum Magnetism (Lausanne, Switzerland)
  Density Matrix Renormalization Group (DMRG): Matrix Product States and Tensor Networks
- Conference on “Quantum and Classical Systems with Long-Range Interactions” at the International Institute of Physics Natal (Brazil)

2018:

- Workshop on “Nonequilibrium Quantum Dynamics and Relaxation Phenomena in Many Body Systems” by the Jožef Stefan Institute Ljubljana in Krvavec (Slovenia)
  Formation of spatial structures by spin-selective excitations
- 2nd MCnet Scientific Computing School, Mariaspring (Germany)
  Introduction to and supervision of the programming project: “Quantum Dynamics”
- Workshop on “Transport in Strongly Correlated Quantum Systems” at the International Institute of Physics Natal (Brazil)
  Emergent structures in driven and excited systems out-of-equilibrium
- 1st Colombian Meeting on “Ultracold Matter in Optical Lattices” at Universidad del Valle (Cali, Colombia – participation via video-conference)
  Quantum simulation of superfluidity and quantum magnetism via ultracold polar molecules
- 673th WE-Heraeus Seminar “Trends in Quantum Magnetism”, Physikzentrum Bad Honnef (Germany)
  Emergent structures in magnetic systems out-of-equilibrium
- Winter school on Numerical Methods for Strongly Correlated Quantum Systems of the Research Unit FOR1807, Marburg (Germany)
  Matrix Product States for Nonequilibrium Dynamics and Finite Temperatures

2016:

- Workshop "Quantum Many-Body Methods in Condensed Matter Systems", RWTH Aachen (Germany)
  Recent progress in dynamical response functions with matrix product states
- Workshop "Recent progress in low-dimensional quantum magnetism", EPF Lausanne (Switzerland)
  Recent progress in dynamical response functions with matrix product states
- International Summer School “Computational Approaches for Quantum Many Body Systems”, UCAS Beijing (China)
  Dynamics with matrix product states: from quantum quenches to structure factors at finite temperatures
- Memorial Symposium for Thomas Pruschke, U. Göttingen (Germany)
  Dynamical Response Functions with Matrix Product States
- Workshop on “Quantum Non-Equilibrium Phenomena” at the International Institute of Physics Natal (Brazil):
  Quantum correlations and entanglement in far-from-equilibrium spin systems

2015:

- Symposium on “Recent developments in numerical study for strongly correlated quantum systems” at the “1st Conference on Condensed Matter Physics” at Tsinghua University (Beijing, China):
  Quench dynamics with the time-dependent DMRG
- Tutorial Talk at the Third Annual Workshop of the Helmholtz Virtual Institute “New States of Matter and their Excitations” (Berlin, Germany):
  Numerical Matrix Product States Methods
- 20th Mardi Gras Conference, Louisiana State University (Baton Rouge, USA):
  Matrix product state formulation of frequency-space dynamics at finite temperatures
- International Conference of the FOR1807 “Advanced Numerical Algorithms for Strongly Correlated Quantum Systems”, (Würzburg, Germany):
  Matrix product state formulation of frequency-space dynamics at finite temperatures

2014:

- “Mini-conference Quantum Magnetism”, Université de Cergy-Pontoise (Paris, France):
  Quantum magnetism with ultracold polar molecules
- “New States of Matter and Their Excitations”, Max-Planck-Institute for the Physics of Complex Systems (Dresden, Germany):
  Matrix product state formulation of frequency-space dynamics at finite temperatures
- “Quantum Phenomena in Strongly Correlated Electrons”, Jagellonian University Krakow (Poland):
  Matrix product state formulation of frequency-space dynamics at finite temperatures
- “Quantum dynamics in systems with many coupled degrees of freedom: challenges for theory”, CFEL/DESY (Hamburg, Germany):
  Nonequilibrium Dynamics with the Time-Dependent DMRG

2010:

- “New Trends in Theory of Correlated Materials (NTTCM)”, Chiba (Japan): *Wigner crystallization of triplon bound states in a Shastry-Sutherland spin tube*

Invited Colloquia

2017:

- Colloquium of the physics department at the University of Braunschweig:
  Entanglement and topological phases in low-dimensional quantum magnets

2015:

- Colloquium of the Max-Planck-Institute for Dynamics and Self-Organization Göttingen (Prof. E. Bodenschatz):
  Nonequilibrium Dynamics of Quantum Many-Body Systems

2013:

- “Göttinger Physikalisches Kolloquium” (presentation for the habilitation procedure):
  Nichtgleichgewichtsdynamik und exotische Quantenzustände in Quantenvielteilchensystemen

Invited Seminars

(*International: > 30, highlighted; national: >30)*

2022:

1. Seminar at the Max-Planck-Institute for Solid State Research Stuttgart (Germany):
   Photoinduced spinful excitons in Hubbard systems with magnetic superstructures

2021:

2. Quantum Matter Seminar (online), **Northeastern University Boston (USA)**:
   Photoinduced spinful excitons in Hubbard systems with magnetic superstructures
3. Seminar on Quantum Science&Technology and Condensed Matter Physics, **EPF Lausanne (Switzerland):**
   Detecting Superconductivity Out-of-Equilibrium

2020:

4. Seminar of the group Prof. M. Münzenberg, Greifswald University (Germany):
   TBA – postponed due to Covid19
5. Condensed Matter Seminar, RWTH Aachen (Germany):
   Detecting Superconductivity Out-of-Equilibrium

2018:

4. Condensed Matter Theory Seminar U. Bielefeld (Germany):
   Finite-temperature dynamics using matrix product states

2017:

5. Seminar at the ICMM/ITP (group Prof. M. Thoss), FAU. Erlangen-Nürnberg (Germany):
   Photoexcitation and Superconductivity in Correlated Quantum Systems
6. Seminar at the Max-Planck-Institute for Solid State Research Stuttgart (Germany):
   Nonequilibrium Dynamics of Quantum Simulators for Superconductivity and of Photoexcitations in a Model Manganite
7. Seminar at the Institute for Functional Matter and Quantum Technologies, U. Stuttgart (Germany):
   Finite-temperature dynamics using matrix product states
8. Séminaire du LPTMS **(U. Paris Orsay, France)**:
   Finite-temperature dynamics in low-dimensional quantum magnets
9. Cold gases seminar, group M. Zwierlein, **MIT Boston (USA)**:
   Photoexcitation and Superconductivity in Correlated Quantum Systems
10. Condensed Matter Theory Seminar, Department of Physics, **Northeastern University Boston (USA)**:
    Photoexcitations in a 1D manganite model: from quasiclassical light absorption to quasiparticle relaxations
11. Condensed Matter Theory Seminar, TU Munich (Germany):
    Photoexcitations in a 1D manganite model: from quasiclassical light absorption to quasiparticle relaxations

2016:

12. Seminar at the "Centre Interdisciplinaire de Nanoscience de Marseille" **(CINaM Marseille, France)**:
    Studying Excitations with Matrix Product States: Dynamical Response Functions and Photoexcitations
13. Seminar of the Beijing Computational Science Research Center **(CSRC Beijing, China)**:
    Topological Phases and Superconductivity with Ultracold Polar Molecules

14. Condensed Matter Theory Seminar, Department of Physics, **Northeastern University Boston (USA)**:
Mott Quantum Criticality in the Anisotropic 2D Hubbard Model

15. Seminar Theoretical Physics, University of Hannover (Germany):
Mott Quantum Criticality in the Anisotropic 2D Hubbard Model

16. Seminar Theory of Condensed Matter: Hard Condensed Matter, Johannes Gutenberg-University Mainz (Germany):
Mott Quantum Criticality in the Anisotropic 2D Hubbard Model

2015:

17. Seminar Theoretical Physics at the University of Osnabrück (Germany):
Effect of dimerization and spin-orbit coupling in the frequency-space dynamics of spin-1/2 chains

18. Seminar at the Wigner Research Centre for Physics **(Budapest, Hungary)**:
Recent developments for finite-temperature dynamics with matrix product state approaches

19. Seminar of the Departm. of Theoretical Physics, Budapest University of Technology and Economics **(Budapest, Hungary)**:
Controlling Integrability Breaking and Equilibration Dynamics in low-dimensional Quantum Many-Body Systems

20. Seminar at the LPTM **(Université de Cergy-Pontoise, France)**:
Mott Quantum Criticality in the Anisotropic 2D Hubbard Model

21. Seminar in the group of Prof. G. Falci, **(University of Catania Italy)**:
Tutorial on DMRG (postponed due to illness)

22. Seminar at the Max-Planck-Institute for Solid State Research Stuttgart (Germany):
Topological Phases and Superconductivity with Ultracold Polar Molecules

23. Seminar "Topical Issues of Theoretical Physics", University of Stuttgart (Germany):
Controlling Integrability Breaking and Equilibration Dynamics in low-dimensional Quantum Many-Body Systems

24. AMO seminar at Rice University **(Houston, Texas, USA)**:
Relaxation of Correlated Quantum Systems: Thermalization, Quantum Distillation and Freezing Effects

2014:

25. Seminar of the 'Laboratoire de Physique Théorique' at the Université Paul Sabatier **(Toulouse, France)**:
Far from equilibrium quantum magnetism with ultracold polar molecules

26. Seminar Theory of Condensed Matter: Hard Condensed Matter, Johannes Gutenberg-University Mainz (Germany):
Far from equilibrium quantum magnetism with ultracold polar molecules

27. 'Seminario di fisica' at the 'Scuola Normale Superiore' **(Pisa, Italy)**:
Far from equilibrium quantum magnetism with ultracold polar molecules

28. Seminar on Many-Body Problems, Physics Department, Philipps-University Marburg (Germany):
Relaxation behavior of isolated quantum many body systems: controlling the breaking of integrability, and possible realizations of absolute negative temperatures

29. AMO Seminar, JILA **(Boulder, CO, USA)**:
Quench Dynamics in a Model with Tuneable Integrability Breaking

30. Seminar on Many-Body Problems, Physics Department, Philipps-University Marburg (Germany):
Matrix product state formulation of frequency-space dynamics at finite temperatures

2013:

31. Institute for Quantum Optics and Quantum Information **(IQOQI Innsbruck, Austria)**:
Far-From-Equilibrium Quantum Magnetism with Ultracold Polar Molecules

32. Princeton Center for Theoretical Science / Condensed Matter Seminar, Princeton University **(Princeton, NJ, USA)**:
Far-From-Equilibrium Quantum Magnetism with Ultracold Polar Molecules

33. Seminar on Many-Body Problems, Physics Department, Philipps-University Marburg (Germany):
Symmetry Protected Topological Phases with Ultracold Polar Molecules

34. Seminar Theoretical Physics, University of Hannover (Germany):
Probing Quantum Magnetism with Polar Molecules on Optical Lattices via Interaction Induced Dephasing

2012:

35. Seminar 'Theoretical Problems in Condensed Matter', Technical University Dortmund (Germany):
Topological phases in ultracold polar-molecule quantum magnets

36. Group seminar Condensed Matter Theory **(UC Irvine, CA, USA)**:
Quantum Magnetism and Superfluidity with Ultracold Polar Molecules on quasi-1D Optical Lattices

37. Theory Colloquium, Faculty for Physics, University of Kaiserslautern (Germany):
Quantum Magnetism and Superfluidity with Ultracold Polar Molecules on quasi-1D Optical Lattices

38. "Kid's seminar" of the CMT group **(Harvard University, Boston, USA)**:
Quantum Magnetism and Superfluidity with Ultracold Polar Molecules on quasi-1D Optical Lattices

2011:

39. Group seminar Institute for Theoretical Physics I, Technical University Dortmund (Germany):
Tunable Superfluidity and Quantum Magnetism with Ultracold Polar Molecules

40. Seminar on Many-Body Problems, Physics Department, Philipps-University Marburg (Germany):
Tunable Superfluidity and Quantum Magnetism with Ultracold Polar Molecules

41. 'Correlations Cafe' at RWTH Aachen (Germany):
Tunable Superfluidity and Quantum Magnetism with Ultracold Polar Molecules

42. 'Condensed Matter Seminar' at the University of California **(Davis, CA, USA)**:
Emulating Quantum Magnetism and t-J-Models in Systems of ultracold Polar Molecules

43. Joint Seminar of the 'Institute for Quantum Information' and the 'Institute for Condensed Matter Physics' **(Caltech, Pasadena, USA)**:
Emulating Quantum Magnetism and t-J-Models in Systems of ultracold Polar Molecules

44. Seminar of I. Bloch's Group at Ludwig-Maximilians-University Munich (Germany):
Emulating Quantum Magnetism and t-J-Models in Systems of ultracold Polar Molecules

45. CTMC-Seminar at the 'Institute of Theoretical Physics' **(EPF Lausanne, Switzerland)**:
Emulating Quantum Magnetism and t-J-Models in Systems of ultracold Polar Molecules

46. Seminar 'Strongly Correlated Systems', Institute of Theoretical Physics III, University of Stuttgart (Germany):
Phase diagram and continuous pair-unbinding transition of the bilinear-biquadratic S=1 Heisenberg chain in a magnetic field

47. Seminar on Many-Body Problems, Physics Department, Philipps-University Marburg (Germany):
Unconventional magnetization plateaus in a Shastry-Sutherland spin tube

48. Seminar ’Theoretical Problems in Condensed Matter’, Technical University Dortmund (Germany):
Phase diagram and continuous pair-unbinding transition of the bilinear-biquadratic S=1 Heisenberg chain in a magnetic field

49. Condensed Matter Theory Seminar, University of Cologne (Germany):
Phase diagram and continuous pair-unbinding transition of the bilinear-biquadratic S=1 Heisenberg chain in a magnetic field

2010:

50. Condensed Matter Seminar **(University of Colorado, Boulder, USA)**:
Transitions between Luttinger Liquid Phases in the Bilinear-Biquadratic S = 1 Heisenberg Chain in a Magnetic field

51. Seminar on Many-Body Problems, Physics Department at the Philipps-University Marburg (Germany):
Transitions between Luttinger Liquid Phases in the Bilinear-Biquadratic S = 1 Heisenberg Chain in a Magnetic Field

52. Seminar of the Institute for Theoretical Condensed Matter Physics at the University of Karlsruhe (Germany):
S = 1/2 ladders, Shastry-Sutherland spin-tubes and kagome antiferromagnets with Dzyaloshinskii-Moriya interactions: torque anomalies and frustration relief

2009:

53. ’Low-Energy Physics Seminar’ at the University of Arizona **(Tucson, AZ, USA)**:
Time Evolution of Interacting Fermions: Quantum Distillation, Relaxation and Horizon Effect

54. MCBT Seminar at the Institut Néel, **(Grenoble, France)**:
S=1/2 ladder and kagome antiferromagnets with Dzyaloshinskii-Moriya interactions: torque anomalies and frustration relief

55. Seminar ’Current Problems in Statistical Physics’ at the University of Augsburg (Germany):
Time Evolution of Interacting Fermions: Quantum Distillation, Relaxation and Horizon Effect

56. Seminar ’Current Problems in Theoretical Physics’ at the University of Greifswald (Germany):
Time Evolution of Interacting Quantum Particles Released from a Confining Trap

57. ’Seminario di fisica’ at the ’Scuola Normale Superiore’ **(Pisa, Italy)**:
Time Evolution of Correlations in Strongly Interacting Fermions and Bosons

58. Seminar at the Abdus Salam International Centre for Theoretical Physics **(ICTP Trieste, Italy)**:
Time Evolution of Correlations in Strongly Interacting Fermions and Bosons

59. ‘Séminaire de physique théorique’ **(University of Fribourg, Switzerland)**:
Time Evolution of Correlations in Strongly Interacting Fermions and Bosons

2008:

60. Seminar ‘Strongly Correlated Systems’, Institute of Theoretical Physics III, University of Stuttgart (Germany):
Effect of Dzyaloshinskii-Moriya Interactions in Heisenberg Spin-1/2 Systems

2007:

61. Seminar Many-Body Problems, Physics Department Philipps-University Marburg (Germany):
Frustrated Spin-Systems with Dzyaloshinskii-Moriya Anisotropy: Possible Models for “Cu(Hp)Cl” and Azurite

2006:

62. Seminar at the ’Institute of Theoretical Physics’, **(EPF Lausanne, Switzerland)**:
Atom Lasers and Relaxation: Quantum Many-Body Systems Out of Equilibrium

Further Presentations at Conferences, Workshops and Schools

(International meetings: >40, highlighted; national: > 30)

2023:

1. International Workshop "Current topics in the nonequilibrium physics of quantum many-body systems", Göttingen (forthcoming)
   Talk: *A Villain-like in-gap mode in a periodically driven charge density wave insulator*
2. "Korrelationstage 2023", Dresden (forthcoming)
   Talk: *In-Gap Band Formation in a Periodically Driven Charge Density Wave Insulator*
3. Spring Meeting of the German Physical Society, Dresden
   Talk: *Photoinduced spinful excitons in Hubbard systems with magnetic superstructures*

2021:

4. "Korrelationstage 2021", Dresden (Virtual Workshop, Germany)
   Poster: *„Shadow-band" formation and recombination of optical excitations in a correlated band-insulator*

2020:

5. Winter Conference 2020 "Quantum Matter: Computation Meets Experiment", Aspen Center for Physics, **(Aspen, CO, USA** – not attended due to illness**)**
   Poster: *Detecting Superconductivity Out-of-Equilibrium*
6. Spring Meeting of the German Physical Society, Dresden (cancelled due to Covid19)
   Talk: *Suppression of the horizon effect in pairing correlation functions of t-J chains after a quantum quench*
7. March Meeting of the APS **(Denver, CO, USA** – cancelled due to Covid19**)**
   Talk: *Tripartite information, scrambling, and the role of Hilbert space partitioning in quantum lattice models*

2019:

8. "Korrelationstage 2019", Dresden (Germany)
   Talk: *Detecting Superconductivity Out-of-Equilibrium*
9. International Workshop on "Correlated Dynamics in Energy Conversion" (IWCE 2019, Göttingen)
   Talk: *Detecting Superconductivity Out-of-Equilibrium*

2018:

10. Spring Meeting of the German Physical Society, Berlin (Germany)
    Talk: *Emergent CDW order in a 1D correlated electron system with underlying magnetic microstructure*

2017:

11. Internal Meeting of the DFG research unit FOR1807 in Würzburg (Germany)
    Presentation on the current status of the project.
12. March Meeting of the APS **(New Orleans, LA, USA)**
    Talk: *Time evolution of two holes in t-J chains with anisotropic couplings*
13. Spring Meeting of the German Physical Society, Dresden (Germany)
    Talk: *Time evolution of two holes in t-J chains with anisotropic couplings*

2016:

14. March Meeting of the APS **(Baltimore, MD, USA)**
    Talk: *Finite temperature dynamics of spin-1/2 chains with symmetry breaking interactions*

15. Spring Meeting of the German Physical Society, Regensburg (Germany)
    Talk: *Finite temperature dynamics of spin-1/2 chains with symmetry breaking interactions*
    Talk: *Finite-temperature dynamics of Spin-1 Heisenberg chains via Matrix Product States*

16. Workshop on "Entanglement in strongly correlated systems", Centro de Ciencias de Benasque Pedro Pascual, **(Benasque, Spain)**
    Talk: *Quantum correlations and entanglement in far-from-equilibrium spin systems*

17. Internal PI-Meeting of the CRC 1073 for preparing the 2nd funding period (Drübeck, Germany)
    Talk: *Developments in the project B03 "Relaxation, Thermalization, Transport and Condensation in Highly Excited Solids"*

2015:

15. PI Meeting of the Helmholtz Virtual Institute "New States of Matter and Their Excitations", Göttingen (Germany)
    Talk *(Status report on the ongoing project P6 "Thermodynamics and dynamics of highly frustrated magnets")*

16. "Korrelationstage 2015", Dresden (Germany)
    Talk: *Recent developments for finite-temperature dynamics with matrix product state approaches*

17. Workshop on "Quantum Many-Body Systems far from Equilibrium: Quench Dynamics, Thermalisation, and Cold-Atom Experiments", **(Stellenbosch, South Africa)**
    Talk: *Quench dynamics in a model with tuneable integrability breaking*

18. Spring Meeting of the German Physical Society, Berlin (Germany)
    Talk: *Quantum freezing effect in 1D SU(N) Hubbard systems*
    Talk: *Exotic magnetization plateaus in a quasi-two-dimensional Shastry-Sutherland model*

2014:

19. 3-week program "Numerical and analytical methods for strongly correlated systems", Centro de Ciencias de Benasque Pedro Pascual, **(Benasque, Spain)**
    Talk: *Matrix product state formulation of frequency-space dynamics at finite temperatures*

20. March Meeting of the APS **(Denver, CO, USA)**
    Talk: *Matrix product state formulation of frequency-space dynamics at finite temperatures*

21. Spring Meeting of the German Physical Society, Dresden (Germany)
    Talk: *Relaxation towards negative temperatures in bosonic systems: generalized Gibbs ensembles and beyond integrability*
    Talk: *Quench Dynamics in a Model with Tuneable Integrability Breaking*

22. Internal Meeting of the CRC 1073 (Germerode, Germany)
    Talk: *Status of project B03 "Relaxation, Thermalization, Transport and Condensation in Highly Excited Solids"*

2013:

23. 3-week program "Quantum Many-Body Systems Out of Equilibrium" at the Max-Planck-Institute for the Physics of Complex Systems, Dresden (Germany)
    Talk: *Far-From-Equilibrium Quantum Magnetism with Ultracold Polar Molecules*
    Poster: *Can non-equilibrium dynamics be used to detect phase transitions?*

24. Kick-off workshop of the Virtual Institute "New states of matter and their excitations" of the Helmholtz Association, Berlin (Germany)
Poster: *Topological phases in ultracold polar-molecule quantum magnets*

25. March Meeting of the APS **(Baltimore, MD, USA)**
Talk: *Symmetry Protected Topological Phases in Polar Molecule Spin Ladder Systems*

26. Spring Meeting of the German Physical Society, Regensburg (Germany)
Talk: *Topological Phases in Ultracold Polar-Molecule Quantum Magnets*
Talk: *Tunable Superconductivity with Ultracold Polar Molecules and Enhanced Superconducting Phases in dipolar t-$J_\perp$ Chains*

2012:

27. Program "Quantum Dynamics in Far from Equilibrium Thermally Isolated Systems" at the Kavli Institute for Theoretical Physics **(KITP Santa Barbara, CA, USA)**
Talk: *Probing Quantum Magnetism with Polar Molecules via Interaction Induced Dephasing*

28. Conference "Exotic Phases of Frustrated Magnets" at the Kavli Institute for Theoretical Physics **(KITP Santa Barbara, CA, USA)**
Poster: *Exotic Magnetization Plateaux in a Quasi-2D Shastry-Sutherland System*

29. Conference "Dynamics and Thermodynamics in Isolated Quantum Systems" at the Kavli Institute for Theoretical Physics **(KITP Santa Barbara, CA, USA)**
Poster: *Probing Quantum Magnetism with Polar Molecules via Interaction Induced Dephasing*

30. Annual Meeting of the APS Division of Atomic, Molecular, and Optical Physics (DAMOP, **Orange County, CA, USA)**
Talk: *Probing Quantum Magnetism with Polar Molecules via Interaction Induced Dephasing*
Poster: *Adiabatic loading and cooling of SU(N) alkaline earth atoms in optical lattices*

31. DARPA Optical Lattice Emulator (OLE) Review Meeting **(Chicago, IL, USA)**
Poster: *Adiabatic loading and cooling of SU(N) alkaline earth atoms in optical lattices*

32. March Meeting of the APS in **(Boston, MA, USA)**
Talk: *Tunable Superfluidity with Ultracold Polar Molecules on quasi-1D Optical Lattices*

33. Winter Conference 2012 "New Directions in Ultracold Atoms", Aspen Center for Physics, **(Aspen, CO, USA)**
Poster: *Tunable Superfluidity and Quantum Magnetism with Ultracold Polar Molecules: Detection and d-wave Superfluidity*

2011:

34. DARPA Optical Lattice Emulator (OLE)/AFOSR Quantum Simulation MURI Review Meeting, **(Fort Lauderdale, FL, USA)**
Poster: *Tunable Superfluidity and Quantum Magnetism with Ultracold Polar Molecules: Detection and d-wave Superfluidity*

35. DARPA Optical Lattice Emulator (OLE) Program Review Meeting **(Vail, CO, USA)**
Poster: *Emulating Quantum Magnetism and t–J Models in Systems of Ultracold Polar Molecules*
Poster: *Resonantly Enhanced Tunneling and Transport of Ultracold Atoms on Tilted Optical Lattices*

36. Annual Meeting of the APS Division of Atomic, Molecular, and Optical Physics (DAMOP, **Atlanta, Georgia, USA)**
Talk: *1D SU(N) spin physics with ultracold alkaline earth atoms*
Poster: *Emulating Quantum Magnetism and t–J Models in Systems of Ultracold Polar Molecules*

37. "Korrelationstage 2011", Dresden (Germany)
Poster: *Emulating Quantum Magnetism and t-J-Models in Systems of ultracold Polar Molecules*

2010:

38. DARPA Optical Lattice Emulator (OLE)/AFOSR Quantum Simulation MURI Review, **(Hollywood, Florida, USA)**
Poster: *Quantum Magnetism and t–J-models with polar molecules*
Poster: *1D SU(N) spin physics with ultracold alkaline earth atoms*

39. "International Workshop on Density Matrix Renormalization Group and Other Advances on Numerical Renormalization Group Methods" **(Beijing, China)**
Talk: *Wigner Crystallization of Triplon Bound States in a Shastry-Sutherland Spin Tube*

40. Workshop 'New Trends in Quantum Magnetism', **(Orsay, France)**
Talk: *Unconventional magnetization plateaus in a Shastry-Sutherland spin tube*

41. Workshop on 'Time-dependent dynamics and non-equilibrium quantum systems', **(Budapest, Hungary)**
Poster: *Time evolution of correlations in strongly interacting fermions after a quantum quench*

42. Workshop 'Perspectives in Highly Frustrated Magnetism', Dresden (Germany)
Talk: *Unconventional magnetization plateau in Shastry-Sutherland tubes in a magnetic field*

43. March Meeting of the APS in **(Portland, Oregon, USA)**
Talk: *Quantum distillation: dynamical generation of low-entropy states of strongly correlated fermions in an optical lattice*
Talk: *Shastry-Sutherland tube in a magnetic field*

2009:

44. Swiss Workshop on Materials with Novel Electronic Properties (MaNEP, **Les Diablerets, Switzerland**)
Poster: *Transitions between Luttinger Liquid Phases in the Bilinear-Biquadratic S = 1 Heisenberg Chain in a Magnetic Field*

45. Meeting "Strongly Correlated Systems" **(Geneva, Switzerland)**
Talk: *Transitions between Luttinger Liquid Phases in the Bilinear-Biquadratic S = 1 Heisenberg Chain in a Magnetic Field*

46. "Joint European Japanese Conference: Frustration in Condensed Matter" **(Lyon, France)**
Poster: *Shastry-Sutherland tube in a magnetic field*

47. Spring Meeting of the German Physical Society, Dresden (Germany)
Talk: *Torque anomalies at magnetization plateaux in quantum magnets with Dzyaloshinskii- Moriya interactions*
Talk: *Time evolution of correlations in strongly interacting fermions after a quantum quench*
Talk: *Effects of Dzyaloshinskii-Moriya interactions and nonmagnetic impurities on the S = 1/2 kagome antiferromagnet*

48. "Korrelationstage 2009", Dresden (Germany)
Talk: *Time Evolution of Correlations in Strongly Interacting Fermions after a Quantum Quench*

49. MaNEP internal workshop **(Neuchatel, Switzerland)**
Talk (substituting F. Mila): *Torque anomalies at magnetization plateaux in quantum magnets with Dzyaloshinskii-Moriya interactions*

2008:

50. International Conference on "Highly Frustrated Magnetism 2008", Braunschweig (Germany)
Poster: *Quadrupolar and Magnetic Properties of Heisenberg S = 1 Chains and Ladders with Bilinear-Biquadratic Interactions in a Magnetic Field*
Poster: *Dzyaloshinskii-Moriya Anisotropy and Frustration Relief in the S = 1/2 Kagomé Antiferromagnet* $ZnCu_3(OH)_6Cl_2$

51. ESF Workshop ”Entanglement in Spin and Orbital Systems” **(Cracow, Poland)**
Poster: *Quadrupolar and Magnetic Properties of Heisenberg S = 1 Chains and Ladders with Bilinear-Biquadratic Interactions in a Magnetic Field*

52. Spring Meeting of the Swiss Physical Society **(Geneva, Switzerland)**
Poster: *Heisenberg Spin-1 Chains with Bilinear-Biquadratic Interactions in a Magnetic Field*

53. Spring Meeting of the German Physical Society, Berlin (Germany)
Talk: *Heisenberg Spin-1 Chains with Bilinear-Biquadratic Interactions in a Magnetic Field*
Talk: *Evolution of Correlation Functions in a System of Strongly Correlated Fermions after a Quantum Quench*

2007:

54. International Joint Conference SFB/TR21 and IFRAF on “Control of Quantum Correlations in Tailored Matter”, Reisensburg Castle (Ulm, Germany)
Poster: *Strongly Correlated Fermions after a Quantum Quench*

55. Swiss Workshop on Materials with Novel Electronic Properties (MaNEP, **Les Diablerets, Switzerland**)
Poster: *Uniform and Staggered Magnetizations induced by Dzyaloshinskii-Moriya Interactions in Frustrated Heisenberg Spin-1/2 Ladders in a Magnetic Field*

56. School on “Highly Frustrated Magnets and Strongly Correlated Systems: From Non-Perturbative Approaches to Experiments”, **(ICTP Trieste, Italy)**
Poster: *Uniform and Staggered Magnetizations induced by Dzyaloshinskii-Moriya Interactions in Frustrated Heisenberg Spin-1/2 Ladders in a Magnetic Field*

57. Spring Meeting of the German Physical Society, Regensburg (Germany)
Talk: *Strongly Correlated Fermions after a Quantum Quench*
Talk: *Uniform and Staggered Magnetizations Induced by Dzyaloshinskii-Moriya Interactions in Isolated and Coupled Spin 1/2 Dimers in a Magnetic Field*
Talk: *Coherent Matter Waves Emerging from Mott-Insulators*

58. “Korrelationstage 2007”, Dresden (Germany)
Poster: *Strongly Correlated Fermions after a Quantum Quench*

59. Annual Meeting of the Swiss Physical Society, **(Zurich, Switzerland)**
Talk: *Strongly Correlated Fermions after a Quantum Quench*

60. “382. Wilhelm and Else Heraeus-Seminar: Thermal Transport and Relaxation: Foundations and Perspectives”, Bad Honnef (Germany)
Poster: *Strongly Correlated Fermions after a Quantum Quench*

2006:

61. HLRS Review Workshop, Stuttgart (Germany)
Poster: *Relaxation through a metal-insulator transition via a quantum quench*

62. Yearly Workshop of the SFB/TR21, Freudenstadt-Lauterbad (Germany)
Talk: *Relaxation through a Metal-Insulator Transition via a Quantum Quench*

63. ASC Workshop “Nonequilibrium Phenomena in Classical and Quantum Systems”, Munich (Germany)
Poster: *Relaxation through a metal-insulator transition via a quantum quench*

64. Closing Colloquium of the SFB 382 “Verfahren und Algorithmen zur Simulation physikalischer Prozesse auf Höchstleistungsrechnern”, Stuttgart (Germany)
Poster: *Relaxation through a Metal-Insulator Transition via a Quantum Quench*

65. International Workshop and Seminar “Non-Equilibrium Dynamics in Interacting Systems”, Dresden (Germany)
Poster: *Quantum and Classical Time Evolution of Luttinger Liquids*

66. Evaluation Workshop of the European Graduate College Electron-Electron Interactions in Solids, **(Ráckeve, Hungary)**
Poster: *Quantum and Classical Time Evolution of Luttinger Liquids*

2005:

67. ESF ExploratoryWorkshop "Effective Models for Low-Dimensional Strongly Correlated Systems", **(Peyresq, France)**
Talk: *Collapse and Revival Starting from a Luttinger Liquid*

68. Seminar of the European Graduate College Electron-Electron Interactions in Solids, **(Riezlern, Austria)**
Talk: *Collapse and Revival of a Luttinger Liquid?*

69. "353. Wilhelm and Else Heraeus-Seminar: Control of Quantum Correlations in Tailored Matter", Freudenstadt (Germany)
Talk: *Collapse and Revival of Coherence in a One-Dimensional Correlated Fermionic Gas*

70. "Korrelationstage 2005", Dresden (Germany)
Poster: *Adaptive Time-Evolution with DMRG for Low-Dimensional Correlated Systems*

71. Spring Meeting of the German Physical Society, Berlin
Talk: *Adaptive Time-Evolution with DMRG for Low-Dimensional Correlated Systems*

2004:

72. Autumn School "IX. Training Course in the Physics of Correlated Electron Systems and High-Tc Superconductors" **(Vietri sul Mare, Italy)**
Talk: *Time Evolution of One-Dimensional Many-Body Quantum Systems*

73. First ALPS Users' Workshop, **(Lugano, Switzerland)** Tutoring of the participants;
Talk: *Time Evolution with DMRG: a Krylov-space Approach*

74. Seminar of the European Graduate College Electron-Electron Interactions in Solids **(Ráckeve Hungary)**
Talk: *Time Evolution of One-Dimensional Many-Body Quantum Systems*

75. Workshop "Recent Progress and Prospects in Density-Matrix Renormalization" **(Leiden, The Netherlands)**
Presentation of the ALPS Project together with R.M. Noack (U. Marburg) and I. McCulloch (RWTH Aachen)

76. ALPS Developers' Workshop **(Zurich, Switzerland)**
Talk: *Integrating DMRG into ALPS*

77. Spring Meeting of the German Physical Society, Regensburg (Germany)
Poster: *The Strong Coupling Phase of the Ionic Hubbard Model*

2003:

78. Seminar of the European Graduate College Electron-Electron Interactions in Solids, **(Riezlern, Austria)**
Talk: *Quantum Critical Behavior of the Ionic Hubbard Model: a DMRG study*

79. Competing Phases in Novel Condensed Matter Systems (COMPHAS), Würzburg (Germany)
Poster: *Phase Diagram of the Ionic Hubbard Model*

80. Spring Meeting of the German Physical Society, Dresden
Talk and Poster Presentation: *Phase Diagram of the Ionic Hubbard Model*

Research Visits

In the following I list shorter as well as extended stays for scientific exchange or collaborations:

2017:

- Institute for Functional Matter and Quantum Technologies, University of Stuttgart (Germany)

2015:

- Program "Many Body Physics with Light" (Dec. 2015), Kavli Institute for Theoretical Physics **(KITP Santa Barbara, CA, USA)**
- Wigner Research Centre for Physics **(Budapest, Hungary)**
- Invited CNRS guest scientist at the 'Laboratoire de Physique Théorique et Modélisation' **(Université de Cergy-Pontoise, France)**
- Helmholtz-Zentrum Berlin für Materialien und Energie (Berlin, Germany)

2014:

- JILA/University of Colorado **(Boulder, CO, USA)**

2013:

- Princeton Center for Theoretical Sciences, Princeton University **(Princeton, NJ, USA)**.

2012:

- Institute for Theoretical Physics I, Technical University of Dortmund (Germany).
- Program "Quantum Dynamics in Far from Equilibrium Thermally Isolated Systems", Kavli Institute for Theoretical Physics **(KITP Santa Barbara, CA, USA)**.

2011:

- Institute for Quantum Information **(Caltech Pasadena, CA, USA)**.
- CTMC, Institute for Theoretical Physics, **(EPF Lausanne, Switzerland)**.
- Institute for Theoretical Physics I, Technical University of Dortmund (Germany).
- Many-Body Numerics Group at the Philipps-University Marburg (Germany).
- Institute for Theoretical Physics, University of Cologne (Germany).

2010:

- Physics Department, University of Wyoming **(Laramie, USA)**.
- Many-Body Numerics Group at the Philipps-University Marburg (Germany).
- Max-Planck-Institute for the Physics of Complex Systems, Dresden (Germany).

2009:

- Physics Department at the University of Arizona **(Tucson, AZ, USA)**.

2008:

- IRSAMC at the Université Paul Sabatier in **(Toulouse, France)**.
- Institute for Theoretical Physics III, University of Stuttgart (Germany).

2007:

- Many-Body Numerics Group at the Philipps-University Marburg (Germany).

Participation at further Conferences, Workshops and Schools

2015:

- "Festkörpertag Südniedersachsen 2015" (Göttingen, Germany)
- Internal Meeting of the SFB/CRC 1073 (Kloster Drübeck, Germany)

2014:

- "Festkörpertag Südniedersachsen 2014" (Hannover, Germany)

2013:

- "Korrelationstage 2013" (Dresden, Germany – presentations cancelled due to sickness)
- Workshop "Frontiers of quantum condensed matter physics: light, matter and unusual devices out of equilibrium" at CUNY (New York, USA)

2010:

- Boulder School on "Computational and Conceptual Approaches to Quantum Many-Body Systems" (local participant), Boulder (Colorado, USA)
- Meeting "Strongly Correlated Systems", Fribourg (Switzerland)
- CECAM workshop 'Tensor network methods for quantum chemistry', ETH Zürich (Switzerland)

2009:

- User day of the Swiss National Supercomputing Centre, Luzern (Switzerland)

2007:

- ALPS Developers' Workshop, Zürich (Switzerland)
- Meeting "Strongly Correlated Systems", Fribourg (Switzerland)

2006:

- Boltzmann-Symposium, Munich (Germany)

2005:

- ALPS Developers' Workshop in Aachen (Germany)
- Workshop on "Quantum Magnetism" of the European Graduate College Electron-Electron Interactions in Solids, Ráckeve (Hungary)

2004:

- Workshop on "Dynamics at Surfaces and Interfaces" of the European Graduate College Electron-Electron Interactions in Solids, Marburg (Germany)

2003:

- ALPS Developers' Workshop in Riezlern (Austria)
- First ALPS Developers' Workshop in Guarda (Switzerland)