

Publications of the SFB/TR49 according to projects, 2007 - 2014

A03

A. Sotnikov and W. Hofstetter

Magnetic Ordering of Three-Component Ultracold Fermionic Mixtures in Optical Lattices
Phys. Rev. A **89**, 063601 (2014) [abstract, arXiv:1402.3397]

I. Vidanovic, D. Cocks, and W. Hofstetter

Dissipation through localised loss in bosonic systems with long-range interactions
Phys. Rev. A **89**, 053614 (2014) [abstract, arXiv:1402.0011]

U. Bissbort, D. Cocks, A. Negretti, Z. Idziaszek, T. Calarco, F. Schmidt-Kaler, W. Hofstetter, R. Gerritsma

Emulating Solid-State Physics with a Hybrid System of Ultracold Ions and Atoms
Phys. Rev. Lett. **111**, 080501 (2013). [abstract, arXiv:1304.4972]

see also accompanying Physics Synopsis and Press Release

Peter P. Orth, Daniel Cocks, Stephan Rachel, Michael Buchhold, Karyn Le Hur, and Walter Hofstetter

Correlated Topological Phases and Exotic Magnetism with Ultracold Fermions
J. Phys. B: At. Mol. Opt. Phys. **46** (2013) 134004. [abstract, arXiv:1212.5607]

see also LabTalk - When a topological insulator becomes interacting - IOP Science

A. Sotnikov, M. Snoek, and W. Hofstetter

Magnetic phases of mass- and population-imbalanced ultracold fermionic mixtures in optical lattices

Phys. Rev. A **87**, 053602 (2013). [abstract, arXiv:1301.1691]

J. Pohlmann, A. Privitera, I. Titvinidze, and W. Hofstetter

Trion and dimer formation of three-color fermions

Phys. Rev. A **87**, 023617 (2013). [abstract, arXiv:1211.3598]

B. Schmidt, R. Bakhtiari, I. Titvinidze, U. Schneider, M. Snoek, and W. Hofstetter

Dynamical Arrest of Ultracold Lattice Fermions

Phys. Rev. Lett. **110**, 075302 (2013). [abstract , arXiv:1205.4031]

D. Cocks, P. Orth, S. Rachel, M. Buchhold, K. Le Hur, and W. Hofstetter

Time-Reversal-Invariant Hofstadter-Hubbard Model with Ultracold Fermions

Phys. Rev. Lett. **109**, 205303 (2012). [abstract, arXiv:1204.4171]

L. He, Y.-Q. Li, E. Altman, and W. Hofstetter

Quantum phases of Bose-Bose mixtures on a triangular lattice

Phys. Rev. A **86**, 043620 (2012). [abstract, arXiv:1205.1806]

A. Sotnikov, D. Cocks, and W. Hofstetter

Advantages of mass-imbalanced ultracold fermionic mixtures for approaching quantum magnetism in optical lattices

Phys. Rev. Lett. **109**, 065301 (2012). [abstract, arXiv:1203.4658]

- S. Backes, I. Titvinidze, A. Privitera, and W. Hofstetter
Monte Carlo study of fermionic trions in a square lattice with harmonic confinement
 Phys. Rev. A **86**, 013633 (2012). [abstract, arXiv:1202.4021]
- Y. Li, R. Bakhtiari, L. He, and W. Hofstetter
Pomeranchuk effect and spin-gradient cooling of Bose-Bose mixtures in an optical lattice
 Phys. Rev. A **85**, 023624 (2012). [abstract, arXiv:1109.0568]
- Y. Li, R. Bakhtiari, L. He, and W. Hofstetter
Tunable anisotropic magnetism in trapped two-component Bose gases
 Phys. Rev. B **84**, 144411 (2011). [abstract, arXiv:1105.4886]
- A. Privitera, I. Titvinidze, S.-Y. Chang, S. Diehl, A.J. Daley, and W. Hofstetter
Loss-induced phase separation and pairing for 3-species atomic lattice fermions
 Phys. Rev. A **84**, 021601(R) (2011). [abstract, arXiv:1010.0114]
- U. Bissbort, Y. Li, S. Götze, J. Heinze, J. S. Krauser, M. Weinberg, C. Becker, K. Sengstock, W. Hofstetter
Detecting the Amplitude Mode of Strongly Interacting Lattice Bosons by Bragg Scattering
 Phys. Rev. Lett. **106**, 205303 (2011). [abstract, arXiv:1010.2205]
- Michiel Snoek, Irakli Titvinidze, Immanuel Bloch, and Walter Hofstetter
Effect of interactions on harmonically confined Bose-Fermi mixtures in optical lattices
 Phys. Rev. Lett. **106**, 155301 (2011). [abstract, arXiv:1010.5333]
- I. Titvinidze, A. Privitera, S.-Y. Chang, S. Diehl, M. Baranov, A.J. Daley, and W. Hofstetter
Magnetism and domain formation in $SU(3)$ symmetric multi-species mixtures
 New J. Phys. **13** (2011) 035013. [abstract, arXiv:1012.4499]
- Michiel Snoek, Irakli Titvinidze and Walter Hofstetter
Canted Antiferromagnetic Order of Imbalanced Fermi-Fermi Mixtures in Optical Lattices by Dynamical Mean-Field Theory
 Phys. Rev. B **83**, 054419 (2011). [abstract, arXiv:1007.5457]
- A. Privitera and W. Hofstetter
Polaronic slowing of fermionic impurities in lattice Bose-Fermi mixtures
 Phys. Rev. A **82**, 063614 (2010). [abstract, arXiv:1009.0675]
- Michiel Snoek and Walter Hofstetter
Bosonic Dynamical Mean-Field Theory
 Chapter in "Quantum Gases: Finite Temperature and Non-Equilibrium Dynamics" (Vol. 1 Cold Atoms Series).
- N.P. Proukakis, S.A. Gardiner, M.J. Davis and M.H. Szymanska, eds. (Imperial College Press, London, 2013).
 See <http://www.icpress.co.uk/physics/p817.html> [arXiv:1007.5223]
- E. Gorelik, N. Blümer, I. Titvinidze and W. Hofstetter
Néel transition of fermionic atoms in an optical trap: real-space DMFT study
 Phys. Rev. Lett. **105**, 065301 (2010).

- I. Titvinidze, M. Snoek, and W. Hofstetter
Generalized Dynamical Mean-Field Theory for Bose-Fermi Mixtures in Optical Lattices
 Phys. Rev. B **79**, 144506 (2009).
- A. Kantian, M. Dalmonte, S. Diehl, W. Hofstetter, P. Zoller, A. J. Daley
An atomic colour superfluid via three-body loss
 Phys. Rev. Lett. **103**, 240401 (2009).
- A. Hubener, M. Snoek, and W. Hofstetter
Dynamical Mean-Field Analysis of the Multispecies Bose-Hubbard Model
 Phys. Rev. B **80**, 245109 (2009).
- Akos Rapp, Walter Hofstetter, and Gergely Zarand
Trionic phase of ultracold fermions in an optical lattice: A variational study
 Phys. Rev. B **77**, 144520 (2008).
- I. Titvinidze, M. Snoek, and W. Hofstetter
Supersolid Bose-Fermi Mixtures in Optical Lattices
 Phys. Rev. Lett. **100**, 100401 (2008).
- M. Snoek, I. Titvinidze, C. Toke, K. Byczuk, and W. Hofstetter
Antiferromagnetic Order of Strongly Interacting Fermions in a Trap: Real-Space Dynamical Mean-Field Analysis
 New J. Phys. **10**, 093008 (2008).
- Akos Rapp, Gergely Zarand, Carsten Honerkamp, and Walter Hofstetter
Color superfluidity and “baryon” formation in ultracold fermions
 Phys. Rev. Lett. **98**, 160405 (2007).
- A05**
- R. G. Unanyan and M. Fleischhauer
Entanglement Dynamics in Harmonic Oscillator Chains
 Phys. Rev. A **90**, 062330 (2014)
- M. Hoening, W. Abdussalam, M. Fleischhauer and T. Pohl
Antiferromagnetic long-range order in dissipative Rydberg lattices
 Phys. Rev. A **90**, 021603(R) (2014)
- Fabian Grusdt, Fabian Letscher, Mohammad Hafezi and Michael Fleischhauer
Topological growing of Laughlin states in synthetic gauge fields
 Phys. Rev. Lett. **113**, 155301 (2014)
- Fabian Grusdt and Michael Hoening
Realization of Fractional Chern Insulators in the Thin-Torus-Limit with Ultracold Bosons
 Accepted for publication in Phys. Rev. A arxiv:1409.2256
- T.M. Weber, M.Hoening, T. Niederpruem, T. Manthey, O. Thomas, V. Guarrera, M. Fleischhauer, G. Barontini, and H. Ott
Creation, excitation and ionization of a mesoscopic superatom

arxiv:1407.3611

Aditya Shashi, Fabian Grusdt, Dmitry A. Abanin, Eugene Demler
Radio frequency spectroscopy of polarons in ultracold Bose gases
Phys. Rev. A **89**, 053617 (2014)

Fabian Grusdt, Aditya Shashi, Dmitry Abanin and Eugene Demler
Bloch oscillations of bosonic lattice polarons
[arxiv:1410.1513](https://arxiv.org/abs/1410.1513)

Fabian Grusdt, Yulia E. Shchadilova, Alexey N. Rubtsov and Eugene Demler
Renormalization group approach to the Fröhlich polaron model: application to impurity-BEC problem
[arxiv:1410.2203](https://arxiv.org/abs/1410.2203)

Yulia E. Shchadilova, Fabian Grusdt, Alexey N. Rubtsov and Eugene Demler
Polaronic mass renormalization of impurities in BEC: correlated Gaussian wavefunction approach
[arxiv:1410.5691](https://arxiv.org/abs/1410.5691)

M. Hoening, D. Muth, D. Petrosyan, M. Fleischhauer
Steady-state crystallization of Rydberg excitations in an optically driven lattice gas
Phys. Rev. A **87**, 023401 (2013)

D. Petrosyan, M. Hoening, M. Fleischhauer
Spatial correlations of Rydberg excitations in optically driven atomic ensembles
Phys. Rev. A **87**, 053414 (2013)

J. Otterbach, M. Moos, D. Muth, M. Fleischhauer
Wigner Crystallization of Single Photons in Cold Rydberg Ensembles
Phys. Rev. Lett. **111** 113001 (2013)

M. Hoening, M. Moos, and M. Fleischhauer
Critical exponents of flux-equilibrium phase transitions in fermionic lattice models
Phys. Rev. A **86**, 013606 (2012)

A. Lauer, D. Muth and M. Fleischhauer
Transport-induced melting of crystals of Rydberg dressed atoms in a one-dimensional lattice
New J. Phys. **14** 095009 (2012)

M. J. Edmonds, J. Otterbach, R. G. Unanyan, M. Fleischhauer, M. Titov, P. Öhberg
From Anderson to anomalous localization in cold atomic gases with effective spin-orbit coupling
New J. Phys. **14** 073056 (2012)

V. Guarrera, D. Muth, R. Labouvie, A. Vogler, G. Barontini, M. Fleischhauer, H. Ott
Spatiotemporal fermionization of strongly interacting one-dimensional bosons
Phys. Rev. A **86**, 021601(R) (2012)

Muth, D.; Petrosyan, D. & Fleischhauer, M.
Dynamics and evaporation of defects in Mott-insulating clusters of boson pairs
Phys. Rev. A, American Physical Society, 2012, **85**, 013615

- D. Petrosyan, J. Otterbach, and M. Fleischhauer
Electromagnetically Induced Transparency with Rydberg Atoms
 Phys. Rev. Lett. **107**, 213601 (2011)
- A. Mering and M. Fleischhauer
Multiband and nonlinear hopping corrections to the three-dimensional Bose-Fermi-Hubbard model
 Phys. Rev. A **83**, 063630 (2011)
- Dominik Muth and Michael Fleischhauer,
Dynamics of Pair Correlations in the Attractive Lieb-Liniger Gas
 Phys. Rev. Lett. **105**, 150403 (2010)
- Dominik Muth, Michael Fleischhauer, Bernd Schmidt
Discretized vs. continuous models of p-wave interacting fermions in 1D
 Phys. Rev. A **82**, 013602 (2010).
- Razmik G. Unanyan, Dominik Muth, Michael Fleischhauer
Short-time vs. long-time dynamics of entanglement in quantum lattice models
 Phys. Rev. A **81**, 022110 (2010).
- Dominik Muth, Bernd Schmidt, Michael Fleischhauer
Fermionization dynamics of a strongly interacting 1D Bose gas after an interaction quench
 arXiv:0910.1749, New J. of Physics (2010) (accepted).
- X.-F. Zhang, Y.-C. Wen, and S. Eggert
Impurities in a supersolid
 arxiv:1004.0002 submitted (2010).
- Michael Bortz, Sebastian Eggert, and Joachim Stolze
Spectrum and screening cloud in the central spin model
 Phys. Rev. B **81**, 035315 (2010)
- D. Muth and M. Fleischhauer
Dynamics of pair correlations in the attractive Lieb-Liniger gas
 arXiv:1006.5312 (submitted).
- S.A. Söffing, M. Bortz, I. Schneider, A. Struck, M. Fleischhauer, and S. Eggert
Wigner crystal vs. Friedel oscillations in the 1D Hubbard model
 Phys. Rev. B **79**, 195114 (2009).
- Bernd Schmidt, Michael Bortz, Sebastian Eggert, Michael Fleischhauer, and David Petrosyan
Attractively bound pairs of atoms in the Bose-Hubbard model and antiferromagnetism
 Phys. Rev. A **79**, 063634 (2009)
- Alexander Mering, Michael Fleischhauer, Peter A. Ivanov, and Kilian Singer
Analytic approximations to the phase diagram of the Jaynes-Cummings-Hubbard model with application to ion chains
 Phys. Rev. A **80**, 053821 (2009).

Alexander Mering, Michael Fleischhauer:

One dimensional Bose-Fermi-Hubbard model in the heavy-fermion limit
Phys. Rev. A **77**, 023601 (2008)

D. Muth, A. Mering, and M. Fleischhauer:

Ultracold bosons in disordered superlattices: Mott insulators induced by tunneling
Phys. Rev. A **77**, 043618 (2008)

Imke Schneider, Alexander Struck, Michael Bortz, and Sebastian Eggert

Local Density of States for Individual Energy Levels in finite Quantum Wires
Phys. Rev. Lett. **101**, 206401 (2008).

B. Schmidt, M. Fleischhauer

Exact numerical simulations of a one-dimensional, trapped Bose gas
Phys. Rev. A **75**, 021601(R) (2007).

D. Petrosyan, B. Schmidt, J. R. Anglin, M. Fleischhauer

Quantum liquid of repulsively bound pairs of particles in a lattice
Phys. Rev. A **76**, 033606 (2007).

A06

E. V. Gorelik, I. Titvinidze, M. Snoek, W. Hofstetter, and N. Blümer

Néel transition of lattice fermions in a harmonic trap: a real-space dynamical mean-field study
Phys. Rev. Lett. **105**, 065301 (2010)

N. Blümer and E. V. Gorelik

Quantum Monte Carlo simulations of antiferromagnetism in ultracold fermions on optical lattices within real-space dynamical mean-field theory
accepted for publication in Comp. Phys. Comm., doi:10.1016/j.cpc.2010.07.011

E. Jakobi, N. Blümer, and P. van Dongen

Orbital-selective Mott transitions in a doped two-band Hubbard model
Phys. Rev. B **80**, 115109 (2009).

E. V. Gorelik and N. Blümer

Mott transitions in ternary flavor mixtures of ultracold fermions on optical lattices
Phys. Rev. A **80**, 051602(R) (2009)

N. Blümer:

Numerically exact Green functions from Hirsch-Fye quantum Monte Carlo simulations
Preprint arXiv:0712.1290

N. Blümer:

Multigrid Hirsch-Fye quantum Monte Carlo method for dynamical mean-field theory
Preprint arXiv:0801.1222

A07

V.I. Vasyuchka, A.V. Chumak, B. Hillebrands, G.A. Melkov, V.A. Moiseienko, and A.N. Slavin

Non-resonant wave front reversal of spin waves used for microwave signal processing
 J. Phys. D: Appl. Phys. **43**, 325001 (2010)

A.A. Serga, A.V. Chumak, and B. Hillebrands

YIG magnonics
 (invited review), J. Phys. D: Appl. Phys. **43**, 264002 (2010).

C.W. Sandweg, M.B. Jungeisch, V.I. Vasyuchka, A.A. Serga, P. Clausen, H. Schultheiss, B. Hillebrands, A. Kreisel, and P. Kopietz

Wide-range wavevector selectivity of magnon gases in Brillouin light scattering spectroscopy
 Rev. Sci. Instrum. **81**, 073902 (2010)

A.V. Chumak, A.A. Serga, G.A. Melkov, A.N. Slavin, V. Tiberkevich, and B. Hillebrands

Parametrically stimulated recovery of a microwave signal using standing spin-wave modes of a magnetic film
 Phys. Rev. B **79**, 014405 (2009)

T. Neumann, T. Schneider, A.A. Serga, and B. Hillebrands

An electro-optic modulator-assisted wavevector-resolving Brillouin light scattering setup
 Rev. Sci. Instrum. **80**, 053905 (2009)

T. Neumann, A.A. Serga, V.I. Vasyuchka, and B. Hillebrands

Field-induced transition from parallel to perpendicular parametric pumping for a microstrip transducer
 Appl. Phys. Lett. **94**, 192502 (2009)

Thomas Schneider, Alexander Serga, Burkard Hillebrands, and Mikhail Kostylev:

Spin-Wave Ferromagnetic Film Combiner as a NOT Logic Gate
 J. Nanoelectron. Optoelectron. **3**, 69–71 (2008)

A.A. Serga, M.P. Kostylev, and B. Hillebrands

Formation of guided spin-wave bullets in ferrimagnetic film stripes
 Phys. Rev. Lett. **101** 137204 (2008)

S. Schäfer, A.V. Chumak, A.A. Serga, G.A. Melkov, and B. Hillebrands

Microwave spectral analysis by means of non-resonant parametric recovery of spinwave signals in a thin magnetic film
 Appl. Phys. Lett. **92**, 162514 (2008)

T. Neumann, A.A. Serga, and B. Hillebrands

Probing of a parametrically pumped magnon gas with a nonresonant packet of traveling spin waves
 Appl. Phys. Lett. **93**, 252501 (2008)

A.A. Serga, A.V. Chumak, A. Andre, G.A. Melkov, A.N. Slavin, S.O. Demokritov, and B. Hillebrands

Parametrically stimulated recovery of microwave signal stored in standing spinwave modes of a magnetic film
 Phys. Rev. Lett. **99**, 227202 (2007)

A08

Andreas Rückriegel, Peter Kopietz, Dmytro A. Bozhko, Olexandr A. Serga, and Burkard Hillebrands
Magneto-elastic modes and lifetime of magnons in thin yttrium-iron garnet films
 Phys. Rev. B **89**, 184413 (2014)

Andreas Kreisel, Michael Peter, and Peter Kopietz
Singular spin-wave theory and scattering continua in the cone state of Cs_2CuCl_4
 Phys. Rev. B **90**, 075130 (2014)

Kira Riedl, Casper Drukier, Peter Zalom, and Peter Kopietz
Spontaneous ferromagnetism in the spinor Bose gas with Rashba spin-orbit coupling
 Phys. Rev. A **87**, 063626 (2013)

Tim Herfurth, Simon Streib, and Peter Kopietz
Majorana spin liquid and dimensional reduction in Cs_2CuCl_4
editors suggestion
 Phys. Rev. B **88**, 174404 (2013)

Philipp Lange, Peter Kopietz, and Andreas Kreisel
Damping of phase fluctuations in superfluid Bose gases
 Eur. Phys. J. B **85**, 370 (2012)

A. A. Serga, C. W. Sandweg, V. I. Vasyuchka, M. B. Jungfleisch, B. Hillebrands, A. Kreisel, P. Kopietz, and M. P. Kostylev
Brillouin light scattering spectroscopy of parametrically excited dipole-exchange magnons
editors suggestion
 Phys. Rev. B **86**, 134403 (2012)

Andreas Rückriegel, Andreas Kreisel, and Peter Kopietz
Time-dependent spin-wave theory
 Phys. Rev. B **85**, 054422 (2012)

Johannes Hick, Thomas Kloss, and Peter Kopietz
Thermalization of magnons in yttrium-iron garnet: nonequilibrium functional renormalization group approach
 Phys. Rev. B **86**, 184417 (2012)

Thomas Kloss and Peter Kopietz
Non-equilibrium time evolution of bosons from the functional renormalization group
 Phys. Rev. B **83**, 205118 (2011)

Andreas Kreisel, Peter Kopietz, Pham Thanh Cong, Bernd Wolf, and Michael Lang
Elastic constants and ultrasonic attenuation in the cone state of the frustrated antiferromagnet Cs_2CuCl_4

Phys. Rev. B **84**, 024414 (2011)

Peter Kopietz, Lorenz Bartosch, and Florian Schütz
Introduction to the Functional Renormalization Group
 (Springer, Berlin, 2010), ISBN 978-3-642-05093-0.

Thomas Kloss, Andreas Kreisel, and Peter Kopietz
Parametric pumping of kinetics of magnons in dipolar ferromagnets
 Physical Review B **81**, 104308 (2010).

Christian Sandweg, Matthias Jungeisch, Vitaliy Vasyucka, Alexander Serga, Peter Clausen, Helmut Schultheiss, Burkard Hillebrands, Andreas Kreisel, and Peter Kopietz
Wide-range wavevector selectivity of magnon gas in Brillouin light scattering spectroscopy
 arXiv:1005.5084 [physics.ins-det], angenommen zur Veröffentlichung in Review of Scientific Instruments (2010).

Andreas Sinner, Nils Hasselmann, and Peter Kopietz
Spectral function and quasi-particle damping of interacting bosons in two dimensions
 Physical Review Letters **102**, 120601 (2009).

Andreas Kreisel, Francesca Sauli, Lorenz Bartosch, and Peter Kopietz
Microscopic spin-wave theory for yttrium-iron garnet films
 European Physical Journal B **71**, 59 (2009).

Lorenz Bartosch, Peter Kopietz, and Alvaro Ferraz
Renormalization of the BCS-BEC crossover by order parameter fluctuations
 Physical Review B **80**, 104514 (2009).

A.A. Serga, M.P. Kostylev, and B. Hillebrands
Formation of guided spin-wave bullets in ferrimagnetic film stripes
 Phys. Rev. Lett. **101** 137204 (2008)

S. Schäfer, A.V. Chumak, A.A. Serga, G.A. Melkov, and B. Hillebrands
Microwave spectral analysis by means of non-resonant parametric recovery of spinwave signals in a thin magnetic film
 Appl. Phys. Lett. **92**, 162514 (2008)

T. Neumann, A.A. Serga, and B. Hillebrands
Probing of a parametrically pumped magnon gas with a nonresonant packet of traveling spin waves
 Appl. Phys. Lett. **93**, 252501 (2008)

Nils Lerch, Lorenz Bartosch, and Peter Kopietz
Absence of fermionic quasi-particles in the superfluid state of the attractive Fermi gas
 Physical Review Letters **100**, 050403 (2008).

Andreas Kreisel, Francesca Sauli, Nils Hasselmann, and Peter Kopietz
Quantum Heisenberg antiferromagnets in a uniform magnetic field: non-analytic magnetic field dependence of the magnon spectrum
 Physical Review B **78**, 035127 (2008).

A09

P. Würtz, T. Gericke, A. Vogler, F. Etzold, and H. Ott
Image formation in scanning electron microscopy of ultracold atoms
Appl. Phys. B 98, 641 (2010).

P. Würtz, T. Langen, T. Gericke, A. Koglbauer, and H. Ott
Experimental Demonstration of Single-Site Addressability in a Two-Dimensional Optical Lattice
Phys. Rev. Lett. 103, 080404 (2009).

V. A. Brazhnyi, V. V. Konotop, V. M. Perez-Garcia, and H. Ott
Dissipation-induced coherent structures in Bose-Einstein condensates
Phys. Rev. Lett. 102, 144101 (2009).

T. Gericke, P. Würtz, D. Reitz, T. Langen, and H. Ott
High resolution scanning electron microscopy of an ultracold quantum gas
Nature Physics 4, 949 (2008).

P. Würtz, T. Gericke, T. Langen, A. Koglbauer, H. Ott
Probing Bose-Einstein Condensates by Electron Impact Ionization
J. Phys.: Conf. Ser. 141 012020 (2008).

T. Gericke, C. Utfeld, N. Hommerstad, H. Ott
A scanning electron microscope for ultracold atoms
Laser Phys. Lett. 3, 415 (2006).

H. Ott, E. de Mirandes, F. Ferlaino, G. Roati, V. Treck, G. Modugno, and M. Inguscio
Radio Frequency Selective Addressing of Localized Atoms in a Periodic Potential
Phys. Rev. Lett. 93, 120407 (2004).

A10

A. Lemmer, C. Cormick, C. T. Schmiegelow, F. Schmidt-Kaler, M. B. Plenio,
Two-dimensional spectroscopy for the study of ion Coulomb crystals
arXiv:1407.1071 , (2014).

A. Negretti, R. Gerritsma, Z. Idziaszek, F. Schmidt-Kaler, T. Calarco,
Generalised Kronig-Penney model for ultracold atomic quantum systems
arxiv.org:1406.6969 , (2014). accepted for Publication in PRB

F. Schmidt-Kaler,
Quantum physics: Feel the force
Nature **510**, 349 (2014).

U. Bissbort, D. Cocks, A. Negretti, Z. Idziaszek, T. Calarco, F. Schmidt-Kaler, W. Hofstetter,
R. Gerritsma,
Emulating solid-state physics with a hybrid system of ultracold ions and atoms

Physical Review Letters **111**, 080501 (2013).

S. Ulm, J. Roßnagel, G. Jacob, C. Degünther, S. T. Dawkins, U. G. Poschinger, R. Nigmatullin, A. Retzker, M. B. Plenio, F. Schmidt-Kaler, K. Singer,
Observation of the Kibble-Zurek scaling law for defect formation in ion crystals
Nature Communications **4**, 2290 (2013).

P. A. Ivanov, D. Porras, S. S. Ivanov, F. Schmidt-Kaler,
Simulation of the Jahn-Teller-Dicke magnetic structural phase transition with trapped ions
Journal of Physics B **46**, 104003 (2013).

H. Kaufmann, S. Ulm, G. Jacob, U. G. Poschinger, H. Landa, A. Retzker, M.B. Plenio, F. Schmidt-Kaler,
Precise experimental investigation of eigenmodes in a planar ion crystal
Physical Review Letters **109**, 263003 (2012).

H. Kaufmann, S. Ulm, G. Jacob, U. G. Poschinger, H. Landa, A. Retzker, M.B. Plenio, F. Schmidt-Kaler,
Precise experimental investigation of eigenmodes in a planar ion crystal
Physical Review Letters **109**, 263003 (2012).

A. Bermudez, J. Almeida, K. Ott, H. Kaufmann, S. Ulm, U. G. Poschinger, F. Schmidt-Kaler, A. Retzker, M. B. Plenio,
Quantum Magnetism of Spin-Ladder Compounds with Trapped-Ion Crystals
New Journal of Physics **14**, 093042 (2012).

F. Schmidt-Kaler, R. Gerritsma,
Entangled states of trapped ions allow measuring the magnetic field gradient of a single atomic spin
Europhysics Letters **99**, 53001 (2012).

R. Gerritsma, A. Negretti, H. Deork, Z. Idziaszek, T. Calarco, F. Schmidt-Kaler,
Bosonic Josephson Junction Controlled by a Single Trapped Ion
Physical Review Letters **109**, 080402 (2012)

D. Porras, P. A. Ivanov, F. Schmidt-Kaler,
Quantum Simulation of the Cooperative Jahn-Teller Transition in 1D Ion Crystals
Physical Review Letters **108**, 235701 (2012).

M. Hellwig, A. Bautista-Salvador, K. Singer, G. Werth, F. Schmidt-Kaler
Fabrication of a segmented micro Penning trap and numerical investigations of versatile ion positioning protocols
New J. Phys. **12**, 065019 (2010).

G. Huber, F. Ziesel, U. Poschinger, K. Singer, F. Schmidt-Kaler
A trapped-ion local field probe
Appl. Phys. B in press, arXiv:1003.3735 (2010).

W. Schnitzler, N. M. Linke, R. Fickler, J. Meijer, F. Schmidt-Kaler, and K. Singer
Deterministic Ultracold Ion Source targeting the Heisenberg Limit
Phys. Rev. Lett. **102**, 070501 (2009).

H. Wunderlich, C. Wunderlich, K. Singer, F. Schmidt-Kaler
Two-dimensional cluster-state preparation with linear ion traps
Phys. Rev. A 79, 052324 (2009).

P. A. Ivanov, S. S. Ivanov, N. V. Vitanov, A. Mering, M. Fleischhauer, K. Singer
Simulation of a quantum phase transition of polaritons with trapped ions
Phys. Rev. A 80, 060301R (2009).

Gerhard Huber, Ferdinand Schmidt-Kaler, Sebastian Deffner, Eric Lutz
Employing trapped cold ions to verify the quantum Jarzynski equality
Phys. Rev. Lett 101, 070403 (2008).

M. Riebe, H. Häffner, C. F. Roos, W. Hänsel, J. Benhelm, G. P. T. Lancaster, T. W. Körber,
C. Becher, F. Schmidt-Kaler, D. F. V. James and R. Blatt
Deterministic quantum teleportation with atoms
Nature 429, 734 (2004).

F. Schmidt-Kaler, H. Häffner, M. Riebe, S. Gulde, G. P. T. Lancaster, T. Deuschle, C.
Becher, C. F. Roos, J. Eschner, and R. Blatt
Realization of the Cirac-Zoller controlled-NOT quantum gate
Nature 422, 408 (2003).

A11

N. Zafar Ali, J. Sirker, J. Nuss, P. Horsch and M. Jansen
Spin exchange dominated by charge fluctuations of the Wigner lattice in the newly
synthesized chain cuprate Na₅Cu₃O₆
Phys. Rev. B 84, 035113 (2011)

N. Sedlmayr, S. Eggert and J. Sirker
Electron scattering from domain walls in ferromagnetic Luttinger liquids
Phys. Rev. B 84, 024424 (2011)

A. Herzog, A.M. Oles, P. Horsch and J. Sirker
Magnetic excitations in one-dimensional spin-orbital models
Phys. Rev. B 83, 245130 (2011)

J. Sirker, R. G. Pereira and I. Affleck
Conservation laws, integrability and transport in one-dimensional quantum systems
Phys. Rev. B 83, 035115 (2011)

N. Sedlmayr, S. Eggert and J. Sirker
Non-Collinear Ferromagnetic Luttinger Liquids
J. Phys.: Conf. Ser. 303, 012107 (2011)

J. Sirker and N. Laflorencie
NMR Response in quasi one-dimensional Spin-1/2 Antiferromagnets
EPL 86, 57004 (2009).

J. Sirker, R.G. Pereira, and I. Affleck
 Diffusion and ballistic transport in clean one-dimensional conductors
 Phys. Rev. Lett. 103, 216602 (2009).

J. Sirker, N. Laflorencie, S. Fujimoto, S. Eggert, and I. Affleck
 Chain breaks and the susceptibility of $\text{Sr}_2\text{Cu}_{1-x}\text{Pd}_x\text{O}_{3+\delta}$ and other doped quasi one-dimensional antiferromagnets
 Phys. Rev. Lett. 98, 137205 (2007).

J. Sirker
 Spin diffusion and the anisotropic spin-1/2 Heisenberg chain
 Phys. Rev. B 73, 224424 (2006).

R. G. Pereira, J. Sirker, J.-S. Caux, R. Hagemans, J. M. Maillet, S. R. White, and I. Affleck
 The dynamical spin structure factor for the anisotropic spin-1/2 Heisenberg chain
 Phys. Rev. Lett. 96, 257202 (2006).

J. Sirker and A. Klümper
 Real-time dynamics at finite temperature by DMRG: A path-integral approach
 Phys. Rev. B 71, 241101(R) (2005).

B01

N. van Well, K. Foyevtsova, S. Gottlieb-Schönmeyer, F. Ritter, B. Wolf, M. Meven, C. Pfleiderer, M. Lang, W. Assmus, R. Valentí, C. Krellner
Low-temperature structural investigations of the frustrated quantum antiferromagnets $\text{Cs}_2\text{Cu}(\text{Cl}_{4-x}\text{Br}_x)$
 Submitted

S. Streib, P. Kopietz, P.T. Cong, B. Wolf, M. Lang, N. van Well, F. Ritter, W. Assmus
Elastic constants and ultrasound attenuation in the spin-liquid phase of Cs_2CuCl_4
 Submitted, arXiv: 1409.3039

B. Wolf, A. Honecker, W. Hofstetter, U. Tutsch, M. Lang
Cooling through quantum criticality and many-body effects in condensed matter and cold gases
 Int. J. Mod Phys B, accepted (2014)

Y.B. Borozdina, E. Mostovich, V. Enkelmann, B. Wolf, P.T. Cong, U. Tutsch, M. Lang, M. Baumgarten
Interacting Networks of Purely Organic Spin-1/2 Dimers
 J. Mater. Chem. C 2, 6618 (2014)

P.T. Cong, B. Wolf, N. van Well, A.A. Haghighirad, F. Ritter, W. Assmus, C. Krellner, M. Lang
Structural variations and magnetic properties of the quantum antiferromagnets $\text{Cs}_2\text{CuCl}_{4-x}\text{Br}_x$
 IEEE Trans. Magn. 6, 2700204 (2014), arXiv: 1311.3351

P.T. Cong, B. Wolf, R.S. Manna, U. Tutsch, M. de Souza, A. Brühl, M. Lang
Magnetoelastic couplings in the distorted diamond-chain compound azurite
 Phys. Rev. B 89, 174427 (2014)

U. Tutsch, B. Wolf, L. Postulka, Y. Tsui, S. Wessel, H. Jeschke, I. Opahle, T. Saha-Dasgupta, R. Valenti, A. Brühl, K. Remović-Langer, T. Kretz, H.-W. Lerner, M. Wagner, M. Lang
Field-induced Berezinskii-Kosterlitz-Thouless scenario in a 2-dimensional spin-dimer system
Nat. Commun., doi: 10.1038/ncomms6169 (2014)

P.T. Cong, B. Wolf, R.S. Manna, A. Brühl, S. Köhler and M. Lang
Critical Phenomena at the Antiferromagnetic Phase Transition of Azurite
J. Korean Phys. Soc. 62, 2193 (2013)

M. Lang, B. Wolf, A. Honecker, L. Balents, U. Tutsch, P.T. Cong, G. Hofmann, N. Krüger, F. Ritter, W. Assmus, A. Prokofiev
Field-induced quantum criticality – application to magnetic cooling (invited paper)
Phys. Status Solidi B, 250, 3, 457, DOI: 10.1002/pssb.201200794 (2013)

B. Wolf, P.T. Cong, N. Krüger, F. Ritter, W. Assmus and M. Lang
Pulsed-field ultrasonic experiments in the quasi-2D antiferromagnet Cs₂CuBr₄
J. Low Temp. Phys. 170, 236 (2013)

M. Lang, B. Wolf, A. Honecker, Y. Tsui, D. Jaiswal-Nagar, U. Tutsch, G. Hofmann, A. Prokofiev, P.T. Cong, N. Krüger, F. Ritter, W. Assmus
Magnetic cooling through quantum criticality
J. Phys.: Conf. Ser. 400, 032043 (2012)

N. H. Phan, I. Halasz, I. Opahle, E. Alig, L. Fink, J. W. Bats, P.T. Cong, H.W. Lerner, B. Sarkar, B. Wolf, H. O. Jeschke, M. Lang, R. Valenti, R. Dinnebier and M. Wagner
Thermally-induced crystal-to-crystal transformations accompanied by changes in the magnetic properties of a CuII-p-Hydroquinonate Polymer
Cryst. Eng. Commun. 13, 391 (2011)

H. Jeschke, I. Opahle, H. Kandpal, R. Valenti, H. Das, T. Saha-Dasgupta, O. Jansen, H. Rosner, A. Brühl, B. Wolf, M. Lang, J. Richter, S. Hu, X. Wang, R. Peters, T. Pruschke, and A. Honecker
Multi-step approach to microscopic models for frustrated quantum magnets - the case of the natural mineral azurite
Phys. Rev. Lett. 106, 217201 (2011)

A. Kreisel, P. Kopietz, P.T. Cong, B. Wolf and M. Lang
Elastic constants and ultrasonic attenuation in the cone state of the frustrated antiferromagnet Cs₂CuCl₄
Phys. Rev. B 84, 024414 (2011)

P.T. Cong, B. Wolf, M. de Souza, N. Krüger, A.A. Haghighirad, S. Gottlieb-Schoenmeyer, F. Ritter, W. Assmus, I. Opahle, K. Foyevtsova, H.O. Jeschke, R. Valenti, L. Wiehl and M. Lang
Distinct magnetic regimes through site-selective atom substitution in the frustrated quantum antiferromagnet Cs₂CuCl_{4-x}Br_x
Phys. Rev. B 83, 064425 (2011)

B. Wolf, Y. Tsui, D. Jaiswal-Nagar, U. Tutsch, A. Honecker, K. Remović-Langer, G. Hofmann, A. Prokofiev, W. Assmus, G. Donath, and M. Lang

Magnetocaloric effect and magnetic cooling near a field-induced quantum-critical point
Proc. Natl. Acad. Sci. USA 108(17), 6862 (2011)

E. A. Mostovich, V. Enkelmann, K. Removic-Langer, B. Wolf, M. Lang, M. Baumgarten
Planar Biphenyl-Bridged Biradicals as Building Blocks for the Design of Quantum Magnets
Cryst. Growth and Des. 12 (1), 54 (2011)

B. Wolf, Y. Tsui, D. Jaiswal-Nagar, U. Tutsch, A. Honecker, K. Remović-Langer, G. Hofmann, A. Prokofiev, W. Aßmus, G. Donath, and M. Lang
Magnetocaloric effect and magnetic cooling near a field-induced quantum-critical point
Proc. Natl Acad. Sci. USA, **108**(17), 6862 (2011)

A. Kreisel, P. Kopietz, P.T. Cong, B. Wolf and M. Lang
Elastic constants and ultrasonic attenuation in the cone state of the frustrated antiferromagnet Cs_2CuCl_4
Phys. Rev. B **84**, 024414 (2011)

M.C.R. Gibson, K.C. Rule, A.U.B. Wolter, J.-U. Hoffmann, O. Prokhnenko, D.A. Tennant, S. Gerischer, M. Kraken, F.J. Litterst, S. Süllow, J. Scheuer, H. Luetkens, A. Brühl, B. Wolf, M. Lang
Magnetoelastic and structural properties of azurite $Cu_3(CO_3)_2(OH)_2$
Phys. Rev. B **81**, 140406(R) (2010)

P.T. Cong, B. Wolf, U. Tutsch, K. Removic-Langer, J. Schreuer, S. Süllow, M. Lang
Ultrasonic Investigation on the Distorted Diamond Chain Compound Azurite
J. Phys. Conf. Ser. **200**, 012226 (2010)

B. Wolf, P.T. Cong, K. Removic-Langer, Y.D. Borozdina, E. Mostovich, M. Baumgarten, M. Lang
Coupled spin $S = 1/2$ dimer systems based on nitronyl-nitroxide biradicals
J. Phys. Conf. Ser. **200**, 012225 (2010)

M. Lang, Y. Tsui, B. Wolf, D. Jaiswal-Nagar, U. Tutsch, A. Honeker, K. Removic-Langer, A. Prokofiev, W. Assmus, G. Donath
Large magnetocaloric effect at the saturation field of an $S = 1/2$ antiferromagnetic Heisenberg chain
J. Low Temp. Phys. **159** 88 (2010)

K. Removic-Langer, E. Haussühl, L. Wiehl, B. Wolf, F. Sauli, N. Hasselmann, P. Kopietz, M. Lang
Magnetic properties of a novel quasi-2D Cu(II)-trimer system
J. Phys.: Condens. Matter **21**, 185013 (2009)

K.C. Rule, D.A. Tennant, A.U.B. Wolter, S. Süllow, A. Brühl, S. Köhler, B. Wolf, M. Lang, J. Schreuer
Nature of the spin dynamics and $1/3$ magnetisation plateau in azurite
Phys. Rev. Lett. **100**, 117202 (2008)

K. Removic-Langer, L. Wiehl, V. Pashchenko, B. Wolf, J. Schreuer, M. Lang
Magneto-structural correlations in a new oxalato-bridged Cu(II) alternating exchange spin-chain compound

J. Phys.: Condens. Matter **20**, 015221 (2008)

B. Wolf, A. Brühl, V. Pashchenko, K. Removic-Langer, T. Kretz, J.W. Bats, H.-W. Lerner, M. Wagner, A. Salguero, T. Saha-Dasgupta, B. Rahaman, R. Valenti, M. Lang
Modified 1,4-hydroquinone ligands bridging CuII ions building blocks for a new class of quantum magnets
Comptes Rendue Chimie **10**, 109-115 (2007)

A.V. Prokofiev, W. Assmus, K. Removic-Langer, V. Pashchenko, Y. Tsui, B. Wolf, M. Lang
Crystal growth and magnetic properties of the copper coordination polymer [Cu(μ -C₂O₄)(4-aminopyridine)₂(H₂O)]_n
Cryst. Res. Technol. **42**, 394-399 (2007)

B02

I. I. Mazin, Harald O. Jeschke, Frank Lechermann, Hunpyo Lee, Mario Fink, Ronny Thomale, Roser Valentí,
Theoretical prediction of a strongly correlated Dirac metal
Nature Communications **5**, 4261 (2014)

Simon A.J. Kimber, Ashkan Salamat, Shaun R. Evans, Harald O. Jeschke, Kaliappan Muthukumar, Milan Tomic, Francesc Salvat-Pujol, Roser Valentí, Maria V. Kaisheva, Ivo Zizak, Tapan Chatterji,
Origin of the giant pressure-induced volume collapse in MnS₂
Proc. Natl. Acad. Sci. **111**, 5106 (2014)

Luca F. Tocchio, Claudius Gros, Roser Valentí, Federico Becca,
One-dimensional spin liquid, collinear, and spiral phases from uncoupled chains to the triangular lattice
Phys. Rev. B **89**, 235107 (2014)

Francesc Salvat-Pujol, Harald O. Jeschke, and Roser Valentí,
Determination of magnetic form factors for organic charge transfer salts: a first principles investigation
Phys. Rev B **90**, 041101(R) (2014)

Robert Rueger, Luca F. Tocchio, Roser Valentí, Claudius Gros,
Phase diagram of the square lattice bilayer Hubbard model: A variational Monte Carlo study
New Jour. Phys. **16**, 033010 (2014)

Simon A. J. Kimber, I. I. Mazin, Juan Shen, Harald O. Jeschke, Sergey V. Streltsov, Dimitri N. Argyriou, Roser Valentí, Daniel I. Khomskii,
A valence bond liquid on the honeycomb lattice
Phys. Rev. B **89**, 081408(R) (2014)

H. J. Silverstein, K. Fritsch, F. Flicker, A.M. Hallas, J.S. Gardner, Y. Qiu, G. Ehlers, A.T. Savici, Z. Yamani, K.A. Ross, B.D. Gaulin, M.J.P. Gingras, J.A.M. Paddison, K. Foyevtsova, R. Valentí, F. Hawthorne, C.R. Wiebe, H.D. Zhou,

Novel liquid-like correlations in single crystalline $Y_2Mo_2O_7$: an unconventional spin glass
Phys. Rev. B **89**, 054433 (2014)

A.C. Jacko, Luca F. Tocchio, Harald O. Jeschke, Roser Valentí,
Importance of anisotropy in the spin-liquid candidate $Me_3EtSb[Pd(dmit)_2]_2$
Phys. Rev. B **88**, 155139 (2013)

Kateryna Foyevtsova, Harald O. Jeschke, I. I. Mazin, D. I. Khomskii, Roser Valentí,
Ab initio analysis of the tight-binding parameters and magnetic interactions in Na_2IrO_3
Phys. Rev. B **88**, 035107 (2013)

Harald O. Jeschke, Francesc Salvat-Pujol, Roser Valentí,
*First-principles determination of Heisenberg Hamiltonian parameters for the spin-1/2
kagome antiferromagnet $ZnCu_3(OH)_6Cl_2$*
Phys. Rev. B **88**, 075106 (2013)

A. C. Jacko, H. Feldner, E. Rose, F. Lissner, M. Dressel, Roser Valentí, Harald O. Jeschke,
*Electronic properties of Fabre charge-transfer salts under various temperature and pressure
conditions*
Phys. Rev. B **87**, 155139 (2013)

Luca Tocchio, Hélène Feldner, Federico Becca, Roser Valentí, Claudius Gros,
Spin-liquid versus spiral-order phases in the anisotropic triangular lattice
Phys. Rev. B **87**, 035143 (2013)

Luca F. Tocchio, Hunpyo Lee, Harald O. Jeschke, Roser Valentí, Claudius Gros,
*Mott correlated states in the underdoped two-dimensional Hubbard model: variational Monte
Carlo versus a dynamical cluster approximation*
Phys. Rev. B **87**, 045111 (2013)

Robert Rueger, Roser Valentí,
Pattern formation in the dipolar Ising model on a two-dimensional honeycomb lattice
Phys. Rev. B **86**, 024431 (2012)

I. I. Mazin, H. O. Jeschke, K. Foyevtsova, R. Valentí, D. I. Khomskii,
 Na_2IrO_3 as a molecular crystal
Phys. Rev. Lett. **109**, 197201 (2012)

H. O. Jeschke, H. C. Kandpal, I. Opahle, Y.-Z. Zhang, R. Valentí
First principles determination of the model parameters in κ -(ET) $_2$ Cu $_2$ (CN) $_3$
Physica B **405**, S224 (2010)

Y.-Z. Zhang, I. Opahle, H. O. Jeschke, R. Valentí
Pressure-driven phase transitions in correlated systems
J. Phys.: Condens. Matter **22**, 164208 (2010)

Y.-Z. Zhang, K. Foyevtsova, H. O. Jeschke, M. U. Schmidt, R. Valentí
Can the Mott Insulator $TiOCl$ be Metallized by Doping? A First-Principles Study
Phys. Rev. Lett. **104**, 146402 (2010)

- S. Glawion, M. R. Scholz, Y.-Z. Zhang, R. Valentí, T. Saha-Dasgupta, M. Klemm, J. Hemberger, S. Horn, M. Sing, R. Claessen,
Electronic structure of the two-dimensional Heisenberg antiferromagnet VOCl: a multi-orbital Mott insulator
Phys. Rev. B **80**, 155119 (2009)
- S. Sarkar, T. Maitra, Roser Valentí, T. Saha-Dasgupta,
Proposed Orbital Ordering in MnV₂O₄ from First-principles Calculations
Phys. Rev. Lett. **102**, 216405 (2009)
- H.C. Kandpal, I. Opahle, Y.-Z. Zhang, H. O. Jeschke, R. Valentí
Revision of model parameters for kappa-type charge transfer salts: an ab initio study
Phys. Rev. Lett. **103**, 067007 (2009)
- K. Foyevtsova, Y. Z. Zhang, H. O. Jeschke, and R. Valentí
First principles perspective on the microscopic model for Cs₂CuCl₄ and Cs₂CuBr₄
J. Phys.: Conf. Ser. **145**, 012038 (2009)
- S. A. J. Kimber, A. Kreyssig, Y. Z. Zhang, H. O. Jeschke, R. Valentí, F. Yokaichiya, E. Colombier, J. Yan, T. C. Hansen, T. Chatterji, R. J. McQueeney, P. C. Canfield, A. I. Goldman, D. N. Argyriou
Similarities between structural distortions under pressure and chemical doping in superconducting BaFe₂As₂
Nature Materials **8**, 471 (2009)
- J. Fink, S. Thirupathaiah, R. Ovsyannikov, H.A. Duerr, R. Follath, Y. Huang, S. de Jong, M. S. Golden, Y.-Z. Zhang, H. O. Jeschke, R. Valentí, C. Felser, S. Dastjani Farahani, M. Rotter, D. Johrendt
Electronic structure studies of BaFe₂As₂ by angle-resolved photoemission spectroscopy
Phys. Rev. B **79**, 155118 (2009)
- S. Sarkar, T. Maitra, R. Valentí, T. Saha-Dasgupta
Proposed Orbital Ordering in MnV₂O₄ from First-principles Calculations
Phys. Rev. Lett. **102**, 216405 (2009)
- K. Foyevtsova, R. Valentí, P. J. Hirschfeld
Effect of dopant atoms on local superexchange in cuprate superconductors: a perturbative treatment
Phys. Rev. B **79**, 144424 (2009)
- I. Opahle, H. C. Kandpal, Y. Zhang, C. Gros, R. Valentí
Proximity of LaOFeAs to a magnetic instability
Phys. Rev. B **79**, 024509 (2009)
- Yu-Zhong Zhang, Harald O. Jeschke, Roser Valenti
Microscopic model for transitions from Mott to spin-Peierls insulator in TiOCl
Phys. Rev. B **78**, 205104 (2008)

- Hena Das, T. Saha-Dasgupta, Claudius Gros, Roser Valenti
Proposed low energy model Hamiltonian for spin-gapped system CuTe_2O_5
 Phys. Rev. B **77**, 224437 (2008)
- O. Zaharko, J. Mesot, L. A. Salguero, R. Valenti, M. Zbiri, M. Johnson, Y. Filinchuk, B. Klemke, K. Kiefer, M. Mys'kiv, T. Strassle, H. Mutka
Tetrahedra system $\text{Cu}_4\text{OCl}_6\text{daca}_4$: magnetic exchange against molecular vibrations
 Phys. Rev. B **77**, 224408 (2008)
- Y. Z. Zhang, H. O. Jeschke, and R. Valentí
Microscopic model for transitions from Mott to spin-Peierls insulator in TiOCl
 Phys. Rev. B **78**, 205104 (2008)
- O. Zaharko, J. L. Gavilano, Th. Straessle, C. F. Miclea, A. C. Mota, Y. Filinchuk, D. Chernyshov, P. P. Deen, B. Rahaman, T. Saha-Dasgupta, R. Valentí, Y. Matsushita, A. Doenni, H. Kitazawa
New structural and magnetic aspects of the nanotube system $\text{Na}_2\text{V}_3\text{O}_7$
 Phys. Rev. B **78**, 214426 (2008)
- Y.-Z. Zhang, H. O. Jeschke, R. Valentí
Two pressure-induced transitions in TiOCl : Mott insulator to anisotropic metal
 Phys. Rev. Lett. **101**, 136406 (2008).
- H. O. Jeschke, L. A. Salguero, B. Rahaman, C. Buchsbaum, V. Pashchenko, M. U. Schmidt, T. Saha-Dasgupta, R. Valenti
Microscopic modeling of a spin crossover transition
 New J. Phys. **9**, 448 (2007) [arXiv:0711.1053]
- L. Pisani, R. Valenti, B. Montanari, N. M. Harrison
Density functional study of the electronic and vibrational properties of TiOCl
 Phys. Rev. B **76**, 235126 (2007)
- T. Saha-Dasgupta, A. Lichtenstein, M. Hoinkis, S. Glawion, M. Sing, R. Claessen, R. Valenti
Cluster dynamical mean-field calculations for TiOCl
 New. J. Phys. **9**, 380 (2007)
- T. Maitra, R. Valentí
Orbital order in ZnV_2O_4
 Phys. Rev. Lett. **99**, 126401 (2007)
- B03**
- Michael Bortz, Sebastian Eggert, and Joachim Stolze
Spectrum and screening cloud in the central spin model
 Phys. Rev. B **81**, 035315 (2010)
- Xue-Feng Zhang, Yu-Chuan Wen, and Sebastian Eggert
Impurities in a supersolid
 Preprint arXiv:1004.0002 (submitted 2010)

Michael Bortz, Sebastian Eggert, Christian Schneider, Robert Stübner, and Joachim Stolze
Dynamics and decoherence in the central spin model using exact methods
 Preprint arXiv: arXiv:1005:0001 (submitted 2010).

Michael Bortz, Michael Karbach, Imke Schneider, and Sebastian Eggert
Lattice vs. continuum theory of the periodic Heisenberg chain
 Phys. Rev. B **79**, 245414 (2009).

Bernd Schmidt, Michael Bortz, Sebastian Eggert, Michael Fleischhauer and David Petrosyan:
Attractively bound pairs of atoms in the Bose-Hubbard model and antiferromagnetism
 Phys. Rev. A **79**, 063634 (2009)

J. Sirker, S. Fujimoto, N. Laflorencie, S. Eggert, and I. Affleck
Thermodynamics of impurities in the anisotropic Heisenberg spin-1/2 chain
 J. Stat. Mech., **P02015** (2008).

Markus Andres, Imke Schneider, and Sebastian Eggert
Highest weight state description of the isotropic spin-1 chain
 Phys. Rev. B **77**, 014429 (2008).

Sebastian Eggert, Olav F. Syljuåsen, Fabrizio Anfuso, and Markus Andres
Universal alternating order around impurities in antiferromagnets
 Phys. Rev. Lett. **99**, 097204 (2007).

J. Sirker, N. Laflorencie, S. Fujimoto, S. Eggert, and I. Affleck
Chain breaks and the susceptibility of $Sr_2Cu_{1-x}Pd_xO_{3+\delta}$ and other doped quasi-1D antiferromagnets
 Phys. Rev. Lett. **98**, 137205 (2007).

B04

P. T. Cong, B. Wolf, N. van Well, A. A. Haghighirad, F. Ritter, W. Assmus, C. Krellner, M. Lang,
Structural Variations and Magnetic Properties of the Quantum Antiferromagnets $Cs_2CuCl_{4-x}Br_x$, IEEE Transactions on Magnetics 50, 2700204 (2014).

N. van Well, C. Klein, F. Ritter, W. Assmus, C. Krellner and M. Bolte,
Two crown-ether-coordinated caesium halogen salts,
 Acta Cryst. C **70**, 455 (2014).

M. A. Fayzullin, R. M. Eremina, M. V. Eremin, A. Dittl, N. van Well, F. Ritter, W. Assmus, J. Deisenhofer, H.-A. Krug von Nidda, and A. Loidl,
Spin correlations and Dzyaloshinskii-Moriya interaction in Cs_2CuCl_4 ,
 Phys. Rev. B **88** 174421 (2013).

Steppeke, R. Kuchler, S. Lausberg, E. Lengyel, L. Steinke, R. Borth, T. Lühmann, C. Krellner, M. Nicklas, C. Geibel, F. Steglich, M. Brando,
Ferromagnetic Quantum Critical Point in the Heavy-Fermion Metal $YbNi_4(P_{1-x}As_x)_2$,
 Science **339**, 933 (2013).

M. Lang, B. Wolf, A. Honecker, L. Balents, U. Tutsch, P. T. Cong, G. Hofmann, N. Krüger, F. Ritter, W. Assmus, and A. Prokofiev,
Field-induced quantum criticality - application to magnetic cooling,
Phys. Status Solidi B 250, 457 (2013).

Wolf, P. T. Cong, N. Krüger, F. Ritter, W. Assmus, M. Lang,
Pulsed-Field Ultrasonic Experiments in the Quasi-2D Antiferromagnet Cs₂CuBr₄,
J. Low. Temp. Phys. 170, 236 (2013).

H. Pfau, S. Hartmann, U. Stockert, P. Sun, S. Lausberg, M. Brando, S. Friedemann, C. Krellner, C. Geibel, S. Wirth, S. Kirchner, E. Abrahams, Q. Si, and F. Steglich,
Thermal and Electrical Transport across a magnetic Quantum Critical Point,
Nature 484, 493 (2012).

P. T. Cong, B. Wolf, M. de Souza, N. Krüger, A. A. Haghighirad, S. Gottlieb-Schoenmeyer, F. Ritter, W. Assmus, I. Opahle, K. Foyevtsova, H. O. Jeschke, R. Valenti, L. Wiehl, M. Lang,
Distinct magnetic regimes through site-selective atom substitution in the frustrated quantum antiferromagnet Cs₂CuCl_{4-x}Br_x,
Phys. Rev. B 83, 064425 (2011).

Wolf, Y. Tsui, D. Jaiswal-Nagar, U. Tutsch, A. Honecker, K. Removic-Langer, G. Hofmann, A. Prokofiev, W. Assmus, G. Donath, M. Lang,
Magnetocaloric effect and magnetic cooling near a field-induced quantum-critical point,
PNAS 108, 6862 (2011).

N. Krüger, S. Belz, F. Schossau, A. A. Haghighirad, P. T. Cong, B. Wolf, S. Gottlieb-Schoenmeyer, F. Ritter, and W. Assmus,
Stable Phases of the Cs₂CuCl_{4-x}Br_x Mixed Systems,
Crystal Growth and Design 10, 4456 (2010).

M. Lang, Y. Tsui, B. Wolf, D. Jaiswal-Nagar, U. Tutsch, A. Honecker, K. Removic-Langer, A. Prokofiev, W. Assmus, G. Donath
Large magnetocaloric effect at the saturation field of an S = 1/2 antiferromagnetic Heisenberg chain
J. Low Temp. Phys. **159**, 88 (2010).

N. Krüger, S. Belz, F. Schossau, A.A. Haghighirad, P. T. Cong, B. Wolf, S. Gottlieb-Schoenmeyer, F. Ritter, W. Assmus
The stable phases of the Cs₂CuCl_{4-x}Br_x mixed systems
(2010), Crystal Growth and Design, (in print).

A.V. Prokofiev, W. Assmus, K. Removic-Langer, V. Pashchenko, Y. Tsui, B. Wolf, M. Lang
Crystal growth and magnetic properties of the copper coordination polymer [Cu(μ -C₂O₄)(4-aminopyridine)₂(H₂O)]_n
Cryst. Res. Technol. **42**, 394-399 (2007).

B05

C. Reus, S. Weidlich, M. Bolte, H.-W. Lerner, M. Wagner
C-Functionalized, Air- and Water-Stable 9,10-Dihydro-9,10-diboraanthracenes: Efficient Blue to Red Emitting Luminophores
J. Am. Chem. Soc. **2013**, *135*, 12892–12907

F. Blasberg, M. Bolte, H.-W. Lerner, M. Wagner
Mononuclear (O,O' or N,N') and Heterodinuclear (O,O' or N,N') Transition-Metal Complexes of ortho-Quinoid Bis(pyrazol-1-yl)methane Ligands
Organometallics 2012, **31**, 3213–3221

F. Blasberg, M. Bolte, M. Wagner, H.-W. Lerner
Chemical behavior of ortho-hydroquinone-based bis(pyrazol-1-yl)methane ligands in the presence of palladium(II) chloride
J. Organomet. Chem. 2011, **696**, 3593–3600

S. Scheuermann, T. Kretz, H. Vitze, J. W. Bats, M. Bolte, H.-W. Lerner, M. Wagner
Redox-Active p-Quinone-Based Bis(pyrazol-1-yl)methane Ligands: Synthesis and Coordination Behaviour
Chem. Eur. J. **14**, 2590-2601 (2008).

S. Scheuermann, B. Sarkar, M. Bolte, J. W. Bats, H.-W. Lerner, M. Wagner
Single-Electron Transfer in Palladium Complexes of 1,4-Naphthoquinone-Containing Bis(pyrazol-1-yl)methane Ligands
Inorg. Chem. **48**, 9385-9392, (2009).

F. Blasberg, J. W. Bats, M. Bolte, H.-W. Lerner, M. Wagner
Para-Quinone-Containing Bis(pyrazol-1-yl)methane Ligands: Coordination Behavior Toward CoII and a C-H Activation Reaction with CeIV
Inorg. Chem. **49**, 7435-7445 (2010).

J. Romanova, T. Miteva, A. Ivanova, A. Tadjer, M. Baumgarten
An in-depth theoretical approach to the design of Cu(II) hybrid-spin magnets
Phys. Chem. Chem. Phys. **11**, 9545-9555 (2009).

C. Trein, L. Norel, M. Baumgarten
Organic radicals, a promising route towards original molecule-based magnetic material
Coord. Chem. Rev. **253**, 2342-2351 (2009).

T. Miteva, J. Romanova, A. Ivanova, A. Tadjer, M. Baumgarten
Theoretical Study on the Structural Aspects of Cu(II) Hybrid-Spin Complexes
Eur. J. Inorg. Chem. 379-390 (2010).

B. Wolf, C. T. Pham, K. Removic-Langer, Y. B. Borozdina, E. A. Mostovich, M. Baumgarten, M. Lang
Coupled spin $S = 1/2$ dimer systems based on nitronyl-nitroxide biradicals
J. Phys. Conf. Ser. **200**, 012225 (2010).

B06

S. Diehl, T. Methfessel, J. Müller, M. Lang, M. Huth, M. Jourdan, H.J. Elmers
Disorder-induced gap in the normal density of states of the organic superconductor κ -(BEDT-TTF)₂Cu[N(CN)₂]Br
 Submitted

K. Medjanik, M. de Souza, D. Kutnyakhov, A. Gloskovskii, J. Müller, M. Lang, J.P. Pouget, P. Foury-Leylekian, A. Moradpour, H.J. Elmers, G. Schönhense
Hard X-ray Photoemission Study of the Fabre Salts (TMTTF)₂X (X=SbF₆ and PF₆)
 Submitted to Eur. J. Phys. (2014)

P. Lunkenheimer, B. Hartmann, M. Lang, J. Müller, D. Schweitzer, S. Krohns, A. Loidl
Electronic relaxor ferroelectricity in charge-ordered α -(BEDT-TTF)₂I₃
 Submitted, arXiv: 1407.0339

R.S. Manna, P. Das, M. de Souza, M. Lang, J. Müller, S. von Molnar, Z. Fisk
Lattice strain accompanying the colossal magnetoresistance effect in EuB₆
 Phys. Rev. Lett. **113**, 067202 (2014)

M. Lang, P. Lunkenheimer, J. Müller, A. Loidl, B. Hartmann, N.H. Hoang, E. Gati, H. Schubert, J. A. Schlueter
Multiferroicity in the Mott insulating charge-transfer salt κ -(BEDT-TTF)₂Cu[N(CN)₂]Cl
 IEEE Trans. Magn. **6**, 2700107 (2014), arXiv: 1311.2715

M. Sanchez-Andujar, L.C. Gomez-Aguirre, B. Pato-Doldan, S. Yanez-Vilar, R. Artiaga, A. Llamas-Saiz, R.S. Manna, F. Schnelle, M. Lang, F. Ritter, A.A. Haghighirad, M. Senaris-Rodriguez
On the first-order structural transition in the multiferroic hybrid organic-inorganic perovskite-like formate [(CH₃)₂NH₂][Mn(HCOO)₃]
 Cryst. Eng. Comm. **16**, 3558 (2014)

R.S. Manna, M. de Souza, R. Kato, M. Lang
Lattice effects in the quasi-two-dimensional valence-bond-solid Mott insulator EtMe₃P[Pd(dmit)₂]₂
 Phys. Rev. B **89**, 045113 (2014)

P. Foury-Leylekian, S. Petit, I. Mirebeau, G. Andre, M. de Souza, M. Lang, E. Ressouche, A. Moradpour, J.-P. Pouget
Low temperature structural effects in the (TMTSF)₂PF₆ and AsF₆ Bechgaard salts
 Phys. Rev. B **88**, 024105 (2013)

M. Kraken, J. Engelke, S. Süllow, F. J. Litterst, M. Lang, C. Baines, H. Luetkens
Long range magnetic order in azurite from μ SR
 J. Phys.: Conf. Ser. **391**, 012145 (2012)

S. Süllow, A.U.B. Wolter, J. Müller, M. Lang, J.E. Daniels, V. Honkimäki, T. Buslaps
The crystal structure of polycrystalline powder κ -(BEDT-TTF)₂Cu[N(CN)₂]Br studied by high energy x-ray diffraction
 J. Phys.: Conf. Ser. **391**, 012118 (2012)

- R.S. Manna, M. de Souza, J.A. Schlueter, M. Lang
Field-induced length changes in the spin-liquid candidate κ -(BEDT-TTF) $_2$ Cu $_2$ (CN) $_3$
Phys. Status Solidi C **9**, 5, 1180 (2012)
- R.S. Manna, B. Wolf, M. de Souza and M. Lang
High-resolution thermal expansion measurements under Helium-gas pressure
Rev. Sci. Instrum. **83**, 085111 (2012)
- M. de Souza, A. Brühl, C. Strack, D. Schweitzer and M. Lang
Magnetic Field-Induced Lattice Effects in a Quasi-2D Organic Conductor Close to the Mott Metal-Insulator Transition
Phys. Rev. B **86**, 085130 (2012)
- H.O. Jeschke, M. de Souza, R. Valenti, R.S. Manna, M. Lang, J. Schlueter
Temperature dependence of structural and electronic properties of the spin-liquid candidate κ -(BEDT-TTF) $_2$ Cu $_2$ (CN) $_3$
Phys. Rev. B **85**, 035125 (2012)
- P. Lunkenheimer, J. Müller, S. Krohns, F. Schrettle, A. Loidl, B. Hartmann, R. Rommel, M. de Souza, C. Hotta, J.A. Schlueter, M. Lang
Multiferroicity in an organic charge-transfer salt that is suggestive of electric-dipole-driven magnetism
Nature Materials **11**, 755 (2012)
- K.C. Rule, M. Reehuis, M.C.R. Gibson, B. Ouladdiaf, M.J. Gutmann, J.-U. Hoffmann, S. Gerischer, D.A. Tennant, S. Süllo, M. Lang
Magnetic and crystal structure of azurite $\text{Cu}_3(\text{CO}_3)_2(\text{OH})_2$ as determined by neutron diffraction
Phys. Rev. B **83**, 104401 (2011)
- F. Schödel, U. Tutsch, F. Isselbacher, D. Schweitzer, I. Sängler, M. Bolte, J.W. Bats, J. Müller, M. Lang, M. Wagner, and H.-W. Lerner
Structural and Electronic Characteristics of a Novel BEDT-TTF Derivative: [BEDT-TTF] $_2$ [Cu $_2$ Br $_3$]
Europ. J. Inorg. Chem. 2011, **1205** (2011)
- K.C. Rule, D.A. Tennant, J.-S. Caux, M.C.R. Gibson, M.T.F. Telling, S. Gerischer, S. Süllo and M. Lang
Dynamics of azurite $\text{Cu}_3(\text{CO}_3)_2(\text{OH})_2$ in a magnetic field as determined by neutron scattering
Phys. Rev. B **84**, 184419 (2011)
- H. Jeschke, I. Opahle, H. Kandpal, R. Valentí, H. Das, T. Saha-Dasgupta, O. Jansen, H. Rosner, A. Brühl, B. Wolf, M. Lang, J. Richter, S. Hu, X. Wang, R. Peters, T. Pruschke, and A. Honecker
Multi-step approach to microscopic models for frustrated quantum magnets - the case of the natural mineral azurite
Phys. Rev. Lett. **106**, 217201 (2011)

F. Schödel, U. Tutsch, F. Isselbacher, D. Schweitzer, I. Sanger, M. Bolte, J.W. Bats, J. Muller, M. Lang, M. Wagner, H.-W. Lerner

Structural and electronic characteristics of a novel BEDT-TTF derivative: [BEDT-TTF]₂[Cu₂Br₃]

Eur. J. Inorg. Chem. **1205-1211** (2011)

M. de Souza, A. Bruhl, Ch. Strack, B. Wolf, D. Schweitzer and M. Lang

Anomalous Lattice Response at the Mott Transition in a Quasi-2D Organic Conductor

Phys. Rev. Lett. **99**, 0370031 (2007)

M. Lang, M. de Souza, A. Bruhl, C. Strack, B. Wolf, D. Schweitzer

Lattice Effects and Entropy Change at the Mott Transition of a Quasi-2D Organic Conductor

Physica B **403**, 1384-1386 (2008)

L. Bartosch, M. de Souza, and M. Lang

Scaling Theory of the Mott Transition and Breakdown of Gruneisen Scaling near a Finite Temperature Critical end Point

Phys. Rev. Lett. **104**, 245701 (2010)

R. S. Manna, M. de Souza, A. Bruhl, J. A. Schlueter, and M. Lang

Lattice Effects and Entropy Release at the Low-Temperature Phase Transition in the Spin-Liquid Candidate κ -(BEDT-TTF)₂Cu₂(CN)₃

Phys. Rev. Lett. **104**, 016403 (2010)

M. Lang, R.S. Manna, M. de Souza, A. Bruhl, J.A. Schlueter

Phase Transition and Lattice Distortion in the Proposed Spin-Liquid System

κ -(BEDT-TTF)₂Cu₂(CN)₃

(invited paper), Physica B **405**, S182 (2010)

M. de Souza, P. Foury-Leylekian, A. Moradpour, J.-P. Pouget and M. Lang

Evidence for Lattice Effects at the Charge-Ordering Transition in (TMTTF)₂X

Phys. Rev. Lett. **101**, 216403 (2008)

M. de Souza, A. Bruhl, J. Muller, P. Foury-Leylekian, A. Moradpour, J.-P. Pouget, M. Lang

Thermodynamic Studies at the Charge-Ordering and Spin-Peierls Transitions in (TMTTF)₂X

(invited paper) Physica B: Condens. Matter **404**, 494-498 (2009)

M. de Souza, D. Hofmann, P. Foury-Leylekian, A. Moradpour, J.-P. Pouget, M. Lang

Exploring the Charge-Ordering Transition in (TMTTF)₂X via Thermal Expansion

Measurements

Physica B **405**, S92 (2010)

B07

L.F. Tocchio, F. Becca and C. Gros

Backflow correlations in the Hubbard model: An efficient tool for the study of the metal-insulator transition and the large-U limit

Phys. Rev. B **83**, 195138 (2011)

A. Di Ciolo, L.F. Tocchio and C. Gros
Tunneling matrix elements with antiferromagnetic Gutzwiller wavefunctions
 Phys. Rev. B **83**, 165116 (2011)

L.F. Tocchio, F. Becca, C. Gros
Interaction induced Fermi-surface renormalization in the $t1t2$ Hubbard model close to the Mott-Hubbard transition
 Phys. Rev. B **81**, 205109 (2010)

L.F. Tocchio, A. Parola, C. Gros, F. Becca
Spin-liquid and magnetic phases in the anisotropic triangular lattice: the case of κ -(ET) $_2$ X
 Phys. Rev. B **80**, 064419 (2009)

B08

I. Sarkar, M. Laux, J. Demokritova, A. Ruffing, S. Mathias, J. Wei, V. Solovyeva, M. Rudloff, S.S. Naghavi, C. Felser, M. Huth, and M. Aeschlimann
Evaporation temperature tuned physical vapor deposition growth engineering of one dimensional non-Fermi liquid TTF-TCNQ thin films
 Appl. Phys. Lett., **97**, 1 (2010) (accepted)

K. Medjanik, D. Kutnyakhov, S. A. Nepijko, G. Schönhense, S. Naghavi, V. Alijani, C. Felser, N. Koch, R. Rieger, M. Baumgarten, and K. Müllen
Electronic structure of large disc-type donors and acceptors
 Phys. Chem. Chem. Phys., **12**, 7184, (2010)

S. Naghavi, V. Alijani, G. H. Fecher, C. Felser, K. Medjanik, D. Kutnyakhov, S. A. Nepijko, G. Schönhense, R. Rieger, M. Baumgarten, and K. Müllen
Theoretical Study of Electron Binding Energy in Molecular Nanographene-Based Acceptors and Donors
 submitted to The Journal of Physical Chemistry

K. Medjanik, S. Perkert, S. Naghavi, M. Rudloff, V. Solovyeva, M. Huth, S. A. Nepijko, T. Methfessel, C. Felser, M. Baumgarten, K. Müllen, H.J. Elmers and G. Schönhense
A new charge-transfer complex in UHV co-deposited tetramethoxypyrene (TMP) and tetracyanoquinodimethane (TCNQ)
 Preprint arXiv:1008.4722 (submitted 2010)

K. Medyanyk, G. Schönhense, S.A. Nepijko, P. Nagel, S. Schuppler, D. Cerca, M. Baumgarten and K. Müllen
Charge-transfer compounds of pyrene-derived donors and the acceptor TCNQ – a NEXAFS study
 to be submitted

S. Naghavi, T. Gruhn, V. Alijani, G. H. Fecher, C. Felser, K. Medjanik, D. Kutnyakhov, S. A. Nepijko, G. Schönhense, R. Rieger, M. Baumgarten, and K. Müllen
Theoretical Study of Charge Transfer Complexes Based on Polycyclic Aromatic Hydrocarbons
 to be submitted

S. Mathias, S. V. Ereemeev, E. V. Chulkov, M. Aeschlimann, M. Bauer
Quantum oscillations in coupled two-dimensional electron systems
 Phys. Rev. Lett. 103, 026802 (2009)

S. Mathias, A. Ruffing, F. Deicke, M. Wiesenmayer, I. Sarkar, G. Bihlmayer, E. Chulkov, Yu. M. Koroteev, P. M. Echenique, M. Bauer, M. Aeschlimann
Quantum-Well-Induced Giant Spin-Orbit Splitting
 Phys. Rev. Lett. **104**, 066802 (2010)

Viktor V. Poltavets, Martha Greenblatt, Gerhard H. Fecher and Claudia Felser:
Electronic Properties, Band Structure, and Fermi Surface Instabilities of Ni^{1+}/Ni^{2+} Nickelate $La_3Ni_2O_6$, Isoelectronic with Superconducting Cuprates
 Phys. Rev. Lett. **102**, 046405 (2009) [4 pages]

Jürgen Winterlik, Gerhard H. Fecher, Claudia Felser:
Electronic and structural properties of palladium-based Heusler superconductors
 2007

B09

M. Huth, A. Rippert, R. Sachser, L. Keller
Probing near-interface ferroelectricity by conductance modulation of a nano-granular metal
 Mater. Res. Expr. 1, 046303 (2014)

M. Huth, F. Kolb, H. Plank
Dielectric sensing by charging energy modulation in a nano-granular metal
 Appl. Phys. A (2014); DOI 10.1007/s00339-014-8631-9

V. Solvoyeva, K. Keller, M. Huth
Organic charge-transfer phase formation at the interface of donor-acceptor bilayer thin film
 Thin Solid Films **517**, 6671 (2009).

O. Foyevtsov, H. Reith, M. Huth
Transport measurements on microcrystals of oriented $CeIn_3$ and $CeCoIn_5$ thin films
 Thin Solid Films, in print (2010).

I. Sarkar, M. Laux, J. Demokritova, A. Ruffing, S. Mathias, J. Wei, V. Solovyeva, M. Rudloff, S. S. Naghavi, C. Felser, M. Huth, M. Aeschlimann
Evaporation temperature-tuned physical vapor deposition growth engineering of one dimensional non-Fermi liquid TTF-TCNQ thin films
 Appl. Phys. Lett., in print (2010).

M. Huth, D. Klingenberg, Ch. Grimm, F. Porrati, R. Sachser
Conductance regimes of W-based granular metals prepared by electron beam induced deposition
 New J. Phys. 11, 033032 (2009).

Phillip E. Russell, Ivo Utke, Stanislav Moshkalev (eds.)
Structure-property relationships in electronic transport of FEBID structures in Nanofabrication using focused ion and electron beams: principles and applications

Oxford University Press, M. Huth, in print (2010).

B10

R. Rieger, M. Kastler, V. Enkelmann and K. Müllen

Entry to coronene chemistry - Making large electron donors and acceptors

Chemistry-A Eur. J. **14**, 6322-6325 (2008)

P. Gao, D. Beckmann, H. N. Tsao, X. L. Feng, V. Enkelmann, W. Pisula and K. Müllen
Benzo[1,2-b:4,5-b']bis[b]benzothiophene as solution processible organic semiconductor for field-effect transistors

Chem. Commun. **13**, 1548-1550 (2008)

P. Gao, X. L. Feng, X. Y. Yang, V. Enkelmann, M. Baumgarten and K. Müllen

Conjugated Ladder-Type Heteroacenes Bearing Pyrrole and Thiophene Ring Units: Facile Synthesis and Characterization

J. Org. Chem. **73**, 9207-9213 (2008)

P. Gao, D. Beckmann, H. N. Tsao, X. L. Feng, V. Enkelmann, M. Baumgarten, W. Pisula and K. Müllen

[4] Dithieno[2,3-d;2',3'-d']benzo[1,2-b;4,5-b']dithiophene (DTBDT) as Semiconductor for High-Performance, Solution-Processed Organic Field-Effect Transistors

Adv. Mater. **21**, 213-216 (2009)

X.L. Feng, V. Marcon, W. Pisula, M. R. Hansen, J. Kirkpatrick, F. Grozema, D. Andrienko, K. Kremer and K. Müllen

Towards high charge-carrier mobilities by rational design of the shape and periphery of discotics

Nature Mater. **8**, 421-426 (2009).

H.N. Tsao, D. Cho, J. W. Andreasen, A. Rouhanipour, D. W. Breiby, W. Pisula and K. Müllen

The Influence of Morphology on High-Performance Polymer Field-Effect Transistors

Adv. Mater. **21**, 209-212 (2009).

B. Schmaltz, T. Weil and K. Müllen

Polyphenylene-Based Materials: Control of the Electronic Function by Molecular and Supramolecular Complexity

Adv. Mater. **21**, 1067-1078 (2009).

K. Medjanik, D. Kutnyakhov, S. A. Nepijko, G. Schönhense, S. Naghavi, V. Alijani, C. Felser, N. Koch, R. Rieger, M. Baumgarten, K. Müllen

Electronic Structure of Large Disc-Type Donors and Acceptors

Phys. Chem. Chem. Phys. **12**, 7184 (2010).

B11

J. Brandenburg, J. Müller, S. Wirth, J.A. Schlueter, D. Schweitzer
Strongly enhanced 1/f-noise level in κ -(BEDT-TTF)₂X salts
 Physica B, **405**, S141 (2010)

J. Müller, J. Brandenburg, J.A. Schlueter, G.L. Gard
1/f noise in the quasi-two-dimensional organic superconductor
 β -(BEDTTTF)₂SF₅CH₂CF₂SO₃
 J. Phys.: Conf. Ser. **200**, 012133 (2010)

M. de Souza, A. Brühl, J. Müller, P. Foury-Leykian, A. Moradpour, J.-P. Pouget, M. Lang
Thermodynamic Studies at the Charge-Ordering and Spin-Peierls Transitions in (TMTTF)₂X
 (invited paper) Physica B: Condens. Matter **404**, 494-498 (2009).

J. Müller, J. Brandenburg, J.A. Schlueter
Magnetic-field induced crossover of superconducting percolation regimes in the layered organic Mott system κ -(BEDT-TTF)₂Cu[N(CN)₂]Cl
 Phys. Rev. Lett. **102**, 047004 (2009)

J. Müller, J. Brandenburg, J.A. Schlueter
1/f noise in the quasi-two-dimensional organic conductor κ -(BEDT-TTF)₂Cu[N(CN)₂]Cl
 Phys. Rev. B **79**, 214521 (2009)

M. Lang, M. de Souza, A. Brühl, Ch. Strack, B. Wolf, J.A. Schlueter, J. Müller, D. Schweitzer
Comparative transport and thermal expansion studies on quasi-2D organic superconductors close to the metal-to-insulator transition
 Physica C, **460 - 462**, 129 (2007)

J. Müller, M. Lang, F. Steglich, J. A. Schlueter, A. M. Kini, T. Sasaki
Evidence for structural and electronic instabilities at intermediate temperatures in κ -(BEDT-TTF)₂X for X= Cu[N(CN)₂]Cl, Cu[N(CN)₂]Br and Cu(NCS)₂: Implications for the phase diagram of these quasi-2D organic superconductors
 Phys. Rev. B **65**, 144521 (2002)

B12

K. Medjanik, S. Perkert, S. Naghavi, M. Rudloff, V. Solovyeva, M. Huth, S. Nepijko, T. Methfessel, C. Felser, M. Baumgarten, K. Müllen, H.J. Elmers and G. Schönhense
A new charge-transfer complex in UHV co-deposited tetramethoxyppyrene (TMP) and tetracyanoquinodimethane (TCNQ)
 Preprint arXiv:1008.4722 (submitted 2010)

T. Methfessel and H.J. Elmers
Morphology and electronic structure of bcc Co(110) and fcc/hcp Co(111) on Fe(110) investigated by STM and STS
 Surf. Sci. **603**, 2009, 462

A. Kukunin, J. Prokop, and H. J. Elmers

Temperature-driven spin reorientation transition in Fe/Mo(110) nanostructures
Phys. Rev. B **76**, 134414 (2007)

T. Methfessel and H. J. Elmers

Reconstructed bcc Co films on the Cr(110)/W(110) surface
Surf. Sci. **601**, 2007, 5026

J. Prokop, A. Kukunin, H. J. Elmers

Magnetic Anisotropies and Coupling Mechanisms in Fe/Mo(110) Nanostripes
Phys. Rev. Lett. **95**, 187202 (2005)