

## 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**
- Daniel Sellmann, Xue-Feng Zhang, Sebastian Eggert  
*The phase diagram of the antiferromagnetic XXZ model on the triangular lattice*  
 arXiv:1403.0008 preprint (2014).  
<http://www.physik.uni-kl.de/eggert/papers/triangular-xxz.pdf>
- Luca F. Tocchio, Claudius Gros, Xue-Feng Zhang, Sebastian Eggert  
*Phase diagram of the triangular extended Hubbard model*  
 arXiv:1402.3160 Phys. Rev. Lett. in press (2014).  
<http://www.physik.uni-kl.de/eggert/papers/triangular-xxz.pdf>
- Tao Wang, Xue-Feng Zhang, Francisco Ednilson Alves dos Santos, Sebastian Eggert, Axel Pelster  
*Tuning the Quantum Phase Transition of Bosons in Optical Lattices via Periodic Modulation of the s-Wave Scattering Length*  
 Phys. Rev. A **90**, 013633 (2014).  
<http://www.physik.uni-kl.de/eggert/papers/driven.pdf>
- 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

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

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

Xue-Feng Zhang, Qing Sun, Yu-Chuan Wen, Wu-Ming Liu, Sebastian Eggert, An-Chun Ji

*Rydberg Polaritons in a Cavity: A Superradiant Solid*

Phys. Rev. Lett. 110, 090402 (2013).

<http://www.physik.uni-kl.de/eggert/papers/rydberg.pdf>

Stefan A. Soeffing, Imke Schneider, and S. Eggert

*Low-energy local density of states of the 1D Hubbard model*

Europhys. Lett. 101, 56006 (2013).

<http://www.physik.uni-kl.de/eggert/papers/hubbard-dos.pdf>

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

Stefan A. Soeffing, Michael Bortz, and S. Eggert

*Density profile of interacting Fermions in a one-dimensional optical trap*

Phys. Rev. A **84**, 021602(R) (2011).

<http://www.physik.uni-kl.de/eggert/papers/harmonic.pdf>

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 and N. Blümer,  
*Tunable nanomagnetism in moderately cold fermions on optical lattices*,  
Phys. Rev. A **89**, 063622 (2014).

N. Blümer and E. V. Gorelik,  
*Mott transitions in the half-filled  $SU(2M)$  symmetric Hubbard model*,  
Phys. Rev. B **87**, 085115 (2013).

E. Jakobi, N. Blümer, and P.G.J. van Dongen,  
*Orbital-selective Mott transitions in a doped two-band Hubbard model with crystal field splitting*,  
Phys. Rev. B **87**, 205135 (2013).

C.-C. Chang, R. T. Scalettar, E. V. Gorelik, and N. Blümer,  
*Discriminating antiferromagnetic signatures in ultracold fermions by tunable geometric frustration*,  
Phys. Rev. B **88**, 195121 (2013).

D. Rost, E. V. Gorelik, F. Assaad, and N. Blümer,  
*Momentum-dependent pseudogaps in the half-filled two-dimensional Hubbard model*,  
Phys. Rev. B **86**, 155109 (2012).

E. V. Gorelik, D. Rost, T. Paiva, R. Scalettar, A. Klümper, and  
N. Blümer,  
*Universal probes for antiferromagnetic correlations and entropy in cold fermions on optical lattices*,  
Phys. Rev. A **85**, 061602(R) (2012).

Elena V. Gorelik and Nils Blümer,  
*Antiferromagnetism of Lattice Fermions in an Optical Trap: the Dynamical Mean-Field Perspective*,  
J. Low Temp. Phys. **165**, 195 (2011).

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

T. Brächer, P. Pirro, F. Heussner, A. A. Serga, and B. Hillebrands,  
*Localized parallel parametric generation of spin waves in a Ni81Fe19 waveguide by spatial variation of the pumping field,*  
Appl. Phys. Lett. 104, 092418 (2014).

A.A. Serga, V.S. Tiberkevich, C.W. Sandweg, V.I. Vasyuchka, D.A. Bozhko, A.V. Chumak, T. Neumann, B. Obry, G.A. Melkov, A.N. Slavin, and B. Hillebrands,  
*Bose-Einstein condensation in an ultra-hot gas of pumped magnons,*  
Nature Commun. 5, 4452 (2014).

A. Rückriegel, P. Kopietz, D. A. Bozhko, A. A. Serga, and B. Hillebrands,  
*Magnetoelastic modes and lifetime of magnons in thin yttrium iron garnet films,*  
Phys. Rev. B 89, 184413 (2014).

T. Brächer, P. Pirro, T. Meyer, F. Heussner, B. Lägel, A. A. Serga, and B. Hillebrands,  
*Parallel parametric amplification of coherently excited propagating spin waves in a microscopic Ni81Fe19 waveguide,*  
Appl. Phys. Lett. 104, 202408 (2014).

T. Brächer, F. Heussner, P. Pirro, T. Fischer, M. Geilen, B. Heinz, B. Lägel, A.A. Serga, and B. Hillebrands,  
*Time- and power-dependent operation of a parametric spin-wave amplifier,*  
Applied Physics Letters (2014).

T. Brächer, P. Pirro, A. A. Serga, and B. Hillebrands,  
*Localized parametric generation of spin waves in a longitudinally magnetized Ni81Fe19 waveguide,*  
Appl. Phys. Lett. 103, 142415 (2013).

V.I. Vasyuchka, A.A. Serga, C.W. Sandweg, D.V. Slobodianiuk, G.A. Melkov, and B. Hillebrands,  
*Explosive electromagnetic radiation by the relaxation of a multi-mode magnon system,*  
Phys. Rev. Lett. 111, 187206 (2013).

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,*  
Phys. Rev. B 86, 134403 (2012).



S. Schäfer, V. Kegel, A.A. Serga, B. Hillebrands, and M.P. Kostylev,  
*Variable damping and coherence in a high-density magnon gas,*  
Phys. Rev. B **83**, 184407 (2011).

M.P. Kostylev, A.A. Serga, and B. Hillebrands,  
*Radiation of caustic beams from a collapsing bullet,*  
Phys. Rev. Lett. **106**, 134101 (2011).

C.W. Sandweg, Y. Kajiwara, A.V. Chumak, A.A. Serga, V.I. Vasyuchka, M.B. Jungfleisch, E. Saitoh, and B. Hillebrands,  
*Spin pumping by parametrically excited exchange magnons,*  
Phys. Rev. Lett. **106**, 216601 (2011).

T. Brächer, P. Pirro, B. Obry, B. Leven, A.A. Serga, and B. Hillebrands,  
*Mode selective parametric excitation of spin waves in a Ni81Fe19 microstripe,*  
Appl. Phys. Lett. **99**, 162501 (2011).

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. Jungfleisch, 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  
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

R. Labouvie, B. Santra, S. Heun, S. Wimberger, and H. Ott,

*Negative differential conductivity in an interacting quantum gas*

arXiv:1411.5632 (2014)

T.M. Weber, M. Hönig, T. Niederprüm, T. Manthey, O. Thomas, V. Guarrera, M. Fleischhauer, G. Barontini, and H. Ott,

*Creation, excitation and ionization of a mesoscopic superatom*

arXiv: 1407.3611 (2014).

A. Vogler, R. Labouvie, G. Barontini, S. Eggert, V. Guarrera, and H. Ott

*Dimensional Phase Transition from an Array of 1D Luttinger Liquids to a 3D Bose-Einstein Condensate*

Phys. Rev. Lett. **113**, 215301 (2014).

T. Manthey, T. M. Weber, T. Niederprüm, P. Langer, V. Guarrera, G. Barontini and H. Ott

*Scanning electron microscopy of Rydberg-excited bose-Einstein condensates*

New J. Phys. **16**, 083034 (2014)

A. Vogler, R. Labouvie, F. Stubenrauch, G. Barontini, V. Guarrera, and H. Ott,

*Thermodynamics of strongly correlated one-dimensional Bose gases*

Phys. Rev. A **88**, 031603 (2013)

V. Guarrera, D. Muth, R. Labouvie, A. Vogler, G. Barontini, M. Fleischhauer, and H. Ott,

*Spatiotemporal fermionization of strongly interacting one-dimensional bosons*

Phys. Rev. A **86**, 021601(R) (2012).

T. M. Weber, T. Niederprüm, T. Manthey, P. Langer, V. Guarrera, G. Barontini, and H. Ott,

*Continuous coupling of ultracold atoms to an ionic plasma via Rydberg excitation*

Phys. Rev. A **86**, 020702(R) (2012).

V. Guarrera, P. Würtz, A. Ewerbeck, A. Vogler, G. Barontini, and H. Ott,

*Observation of local temporal correlations in trapped quantum gases*

Phys. Rev. Lett. **107**, 160403 (2011).

V. Guarrera and H. Ott

*Electron microscopy of ultracold gases*  
Adv. Imag. Electron Phys. 169, 75 (2011).

A. Koglbauer, P. Würtz, T. Gericke, and H. Ott

*A laser system for the excitation of rubidium Rydberg states using second harmonic generation in a PPLN waveguide crystal*  
Appl. Phys. B 104, 557 (2011).

F. Markert, P. Würtz, A. Koglbauer, T. Gericke, A. Vogler, and H. Ott

*ac-Stark shift and photoionization of Rydberg atoms in an optical dipole trap*  
New J. Phys. 12, 113003 (2010).

P. Würtz, T. Gericke, A. Vogler and H. Ott

*Ultracold atoms as a target: absolute scattering cross-section measurement*  
New J. Phys. 12, 065033 (2010).

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. Trck, 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**

C. Karrasch, R. G. Pereira, J. Sirker  
*Low temperature dynamics of nonlinear Luttinger liquids*  
arXiv:1410.2226 (2014)

F. Andraschko, T. Enss, J. Sirker  
*Purification and many-body localization in cold atomic gases*  
Phys. Rev. Lett. 113, 217201 (2014)

J. Sirker, M. Maiti, N.P. Konstantinidis, N. Sedlmayr  
*Boundary Fidelity and Entanglement in the symmetry protected topological phase of the SSH model*  
J. Stat. Mech. P10032 (2014)

- R. G. Pereira, V. Pasquier, J. Sirker, I. Affleck  
*Exactly conserved quasilocal operators for the XXZ spin chain*  
J. Stat. Mech. P09037 (2014)
- J. Sirker, N.P. Konstantinidis, F. Andraschko, N. Sedlmayr  
*Locality and Thermalization in Closed Quantum Systems*  
Phys. Rev. A 89, 042104 (2014)
- F. Andraschko, J. Sirker  
*Dynamical quantum phase transitions and the Loschmidt echo: A transfer matrix approach*  
Phys. Rev. B 89, 125120 (2014)
- N. Sedlmayr, D. Morath, J. Sirker, S. Eggert, I. Affleck  
*Conducting fixed points for inhomogeneous quantum wires: a conformally invariant boundary theory*  
Phys. Rev. B 89, 045133 (2014)
- N. Sedlmayr, P. Korell, J. Sirker  
*Two-Band Luttinger Liquid with Spin-Orbit Coupling: Applications to Monatomic Chains on Surfaces*  
Phys. Rev. B 88, 195113 (2013)
- N. Sedlmayr, J. Ren, F. Gebhard, J. Sirker  
*Closed and Open System Dynamics in a Fermionic Chain with a Microscopically Specified Bath: Relaxation and Thermalization*  
Phys. Rev. Lett. 110, 100406 (2013)
- N. Sedlmayr, P. Adam, J. Sirker  
*Theory of the conductance of interacting quantum wires with good contacts and applications to carbon nanotubes*  
Phys. Rev. B 87, 035439 (2013)
- J. Sirker  
*Entanglement measures and the quantum to classical mapping*  
J. Stat. Mech. P12012 (2012)
- N. Sedlmayr, J. Ohst, I. Affleck, J. Sirker, S. Eggert  
*Transport and scattering in inhomogeneous quantum wires*  
Phys. Rev. B 86, 121302(R) (2012)
- J. Ren and J. Sirker  
*Spinons and helimagnons in the frustrated Heisenberg chain*  
Phys. Rev. B 85, 140410(R) (2012)
- F. Gebhard, K. zu Muenster, J. Ren, N. Sedlmayr, J. Sirker, B. Ziebarth  
*Particle injection into a chain: decoherence versus relaxation for Hermitian and non-Hermitian dynamics*  
Ann. Phys. 524, 286 (2012)
- J. Sirker  
*The Luttinger liquid and integrable models*  
Int. J. Mod. Phys. B, 26, 1244009 (2012)
- T. Enss and J. Sirker  
*Lightcone renormalization and quantum quenches in one-dimensional Hubbard models*  
New J. Phys. 14, 023008 (2012)



- A. Herzog, A.M. Oles, P. Horsch and J. Sirker  
*The dimerized ferromagnetic Heisenberg chain*  
 Phys. Rev. B 84, 134428 (2011)
- J. Sirker, V. Y. Krivnov, D. V. Dmitriev, A. Herzog, O. Janson, S. Nishimoto, S.-L. Drechsler, J. Richter  
*The J1-J2 Heisenberg model at and close to its  $z=4$  quantum critical point*  
 Phys. Rev. B 84, 144403 (2011)
- 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  $\text{Na}_5\text{Cu}_3\text{O}_6$*   
 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).

## A12

M. Bauer, P. Franzreb, N. Spethmann, A. Widera,  
*Reliable low-vibration piezo-mechanical shutter*  
Rev. Sci. Instrum. 85, 096101 (2014)

N. Spethmann, F. Kindermann, S. John, C. Weber, D. Meschede, A. Widera,  
*Inserting Single Cs atoms into an ultracold gas,*  
Appl. Phys. B 106, 513 (2012).

N. Spethmann, F. Kindermann, S. John, C. Weber, D. Meschede, A. Widera,  
*Dynamics of Single Neutral Impurity Atoms Immersed in an Ultracold Gas,*  
Phys. Rev. Lett. 109, 235301 (2012).

C. Weber, S. John, N. Spethmann, D. Meschede, A. Widera,  
*Single Cs Atoms as Collisional Probes in a large Rb Magneto-Optical Trap,*  
Phys. Rev. A 82, 042722 (2010).

## 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  $Cs_2Cu$   
( $Cl_{4-x}Br_x$ )*  
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  $Cs_2CuCl_{4-x}Br_x$*   
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 Cs<sub>2</sub>CuBr<sub>4</sub>*  
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. 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)

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<sub>2</sub>CuCl<sub>4</sub>*  
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. Valentí, L. Wiehl and M. Lang  
*Distinct magnetic regimes through site-selective atom substitution in the frustrated quantum antiferromagnet Cs<sub>2</sub>CuCl<sub>4-x</sub>Br<sub>x</sub>*  
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( $\mu$ -C<sub>2</sub>O<sub>4</sub>)(4-aminopyridine)<sub>2</sub>(H<sub>2</sub>O)]<sub>n</sub>*  
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 MnS<sub>2</sub>*  
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, H el ene Feldner, Federico Becca, Roser Valent ı, 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 Valent ı, 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 Valent ı,  
*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. Valent ı, 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. Valent ı  
*First principles determination of the model parameters in  $\kappa$ -( $ET$ ) $_2$  $Cu_2(CN)_3$*   
Physica B **405**, S224 (2010)

Y.-Z. Zhang, I. Opahle, H. O. Jeschke, R. Valent ı  
*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. Valent ı  
*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  $MnV_2O_4$  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  $Cs_2CuCl_4$  and  $Cs_2CuBr_4$*   
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  $BaFe_2As_2$*   
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  $BaFe_2As_2$  by angle-resolved photoemission spectroscopy*  
Phys. Rev. B **79**, 155118 (2009)
- S. Sarkar, T. Maitra, R. Valentí, T. Saha-Dasgupta  
*Proposed Orbital Ordering in  $MnV_2O_4$  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  $\text{CuTe}_2\text{O}_5$*   
 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  $\text{TiOCl}$*   
 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  $\text{TiOCl}$ : 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  $\text{TiOCl}$*   
 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  $\text{TiOCl}$*   
 New J. Phys. **9**, 380 (2007)
- T. Maitra, R. Valentí  
*Orbital order in  $\text{ZnV}_2\text{O}_4$*   
 Phys. Rev. Lett. **99**, 126401 (2007)
- B03**
- A. Vogler, R. Labouvie, G. Barontini, S. Eggert, V. Guarrera, and H. Ott  
*Dimensional phase transition from an array of 1D Luttinger liquids to a 3D Bose-Einstein condensate*  
 arXiv:1410.1739 preprint, Phys. Rev. Lett. in press (2014).  
<http://www.physik.uni-kl.de/eggert/papers/1d-3d-bec.pdf>
- A. Metavitsiadis, D. Sellmann, S. Eggert  
*Spin liquid versus dimer phases in an anisotropic  $J_1$ - $J_2$  frustrated square antiferromagnet*



Phys. Rev. B 89, 241104(R) (2014)  
<http://www.physik.uni-kl.de/eggert/papers/j1-j2.pdf>

A. Metavitsiadis, R. Dillenschneider, S. Eggert  
*Impurity entanglement through electron scattering in a magnetic field*  
 Phys. Rev. B 89, 155406 (2014).  
<http://www.physik.uni-kl.de/eggert/papers/2spin-entangle.pdf>

N. Sedlmayr, D. Morath, J. Sirker, S. Eggert, and I. Affleck  
*Conducting fixed points for inhomogeneous quantum wires: a conformally invariant boundary theory*  
 Phys. Rev. B 89, 045133 (2014)  
[http://www.physik.uni-kl.de/eggert/papers/Inhom\\_LL.pdf](http://www.physik.uni-kl.de/eggert/papers/Inhom_LL.pdf)

Xue-Feng Zhang and Sebastian Eggert  
*Chiral edge states and fractional charge separation in interacting bosons on a Kagome lattice*  
 Phys. Rev. Lett. 111, 147201 (2013)  
<http://www.physik.uni-kl.de/eggert/papers/kagome.pdf>

Tao Wang, Xue-Feng Zhang, Sebastian Eggert, Axel Pelster  
*Generalized Effective Potential Landau Theory for Bosonic Quadratic Superlattices*  
 Phys. Rev. A 87, 063615 (2013).  
<http://www.physik.uni-kl.de/eggert/papers/eff-landau.pdf>

A. Machens, N. P. Konstantinidis, O. Waldmann, I. Schneider, S. Eggert  
*The even-odd effect in short antiferromagnetic Heisenberg chains*  
 Phys. Rev. B 87, 144409 (2013).  
<http://www.physik.uni-kl.de/eggert/papers/short-chains.pdf>

N. Sedlmayr, J. Ohst, I. Affleck, J. Sirker, and S. Eggert  
*Transport and scattering in inhomogeneous quantum wires*  
 Phys. Rev. B 86, 121302(R) (2012).  
<http://www.physik.uni-kl.de/eggert/papers/inhom-LL.pdf>

Xue-Feng Zhang, Raoul Dillenschneider, Yue Yu, and S. Eggert  
*Supersolid phase transitions for hardcore bosons on a triangular lattice*  
 Phys. Rev. B 84, 174515 (2011).  
<http://www.physik.uni-kl.de/eggert/papers/ss-phase.pdf>

N. Sedlmayr, S. Eggert, and J. Sirker  
*Electron scattering from domain walls in ferromagnetic Luttinger liquids*  
 Phys. Rev. B 84, 024424 (2011).  
<http://www.physik.uni-kl.de/eggert/papers/domainwall.pdf>

Sergey Shinkevich, Olav F. Syljuasen, S. Eggert  
*Spin wave calculation of the field-dependent magnetization pattern around an impurity in Heisenberg antiferromagnets*  
 Phys. Rev. B 83, 054423 (2011).  
<http://www.physik.uni-kl.de/eggert/papers/spin-wave-imp.pdf>

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<sub>2</sub>CuCl<sub>4</sub>*,  
Phys. Rev. B 88 174421 (2013).

Steppke, R. K uchler, S. Lausberg, E. Lengyel, L. Steinke, R. Borth, T. L uhmann, C. Krellner, M. Nicklas, C. Geibel, F. Steglich, M. Brando,  
*Ferromagnetic Quantum Critical Point in the Heavy-Fermion Metal YbNi<sub>4</sub>(P<sub>1-x</sub>As<sub>x</sub>)<sub>2</sub>*,  
Science 339, 933 (2013).

M. Lang, B. Wolf, A. Honecker, L. Balents, U. Tutsch, P. T. Cong, G. Hofmann, N. Kr uger, 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. Kr uger, F. Ritter, W. Assmus, M. Lang,  
*Pulsed-Field Ultrasonic Experiments in the Quasi-2D Antiferromagnet Cs<sub>2</sub>CuBr<sub>4</sub>*,  
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. Kr uger, 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 Cs<sub>2</sub>CuCl<sub>4-x</sub>Br<sub>x</sub>*,  
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. Kr uger, S. Belz, F. Schossau, A. A. Haghighirad, P. T. Cong, B. Wolf, S. Gottlieb-Sch onmeyer, F. Ritter, and W. Assmus,  
*Stable Phases of the Cs<sub>2</sub>CuCl<sub>4-x</sub>Br<sub>x</sub> 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. Kr uger, S. Belz, F. Schossau, A.A. Haghighirad, P. T. Cong, B. Wolf, S. Gottlieb-Schoenmeyer, F. Ritter, W. Assmus  
*The stable phases of the Cs<sub>2</sub>CuCl<sub>4-x</sub>Br<sub>x</sub> 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( $\mu$ -C<sub>2</sub>O<sub>4</sub>)(4-aminopyridine)<sub>2</sub>(H<sub>2</sub>O)]<sub>n</sub>*  
Cryst. Res. Technol. **42**, 394-399 (2007).

**B05**

Prince Ravat, Martin Baumgarten  
*Tschitschibabin type Biradicals": Benzenoid or Quinoid*  
Physical Chemistry Chemical Physics, 2014, DOI: 10.1039/C4CP03522D

Prince Ravat, Yulia Borozdina, Yoshikazu Ito, Volker Enkelmann, and Martin Baumgarten  
Crystal Engineering of Tolane Bridged Nitronyl Nitroxide Biradicals: Candidates for Quantum Magnets  
CG&Design 2014, 14, 5840-5846

Prince Ravat, Tomasz Marszalek, Wojciech Pisula, Klaus Müllen, and Martin Baumgarten  
*Positive Magneto-LC Effect in Conjugated Spin-bearing Hexabenzocoronene*  
J. Am. Chem. Soc. 2014 (DOI: 10.1021/ja507421x)

Prince Ravat, Yoshio Teki, Yoshikazu Ito, Elena Gorelik, Martin Baumgarten  
*Breaking the Semi-Quinoid Structure: Spin-Switching from Strongly Coupled Singlet to Polarized Triplet State*  
Chemistry Eur. J. 2014, 20,12041-5 (doi.org/10.1002/chem.201403338)

Yulia B. Borozdina, Evgeny Mostovich, Volker Enkelmann, Ulrich Tutsch, Bernd Wolf, Pham Thanh Cong, Michael Lang, Martin Baumgarten  
*Interacting Networks of Purely Organic Spin-1/2 Dimers*  
J. Mater. Chem. C. 2014 2, 6618-6629 (DOI: 10.1039/c4tc00399c)

P. Ravat, Y. Ito, E. Gorelik, V. Enkelmann, M. Baumgarten  
*Tetramethoxy-Pyrene Based Biradical Donors with Tunable Physical and Magnetic Properties*  
*Org. Lett.* **2013**, 15, 4280-3 (DOI: 10.1021/ol4015859)

A. Ivanova, J. Romanova, A. Tadjer, M. Baumgarten  
*Magnetostructural Correlation for Rational Design of Mn(II) Hybrid-Spin Complexes*  
J. Phys. Chem. A **2013**, 117, 670-678 (DOI: 10.1021/jp312258j)

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

E. A. Mostovich, Y. Borozdina, V. Enkelmann, K. Removic-Langer, B. Wolf, M. Lang, M. Baumgarten  
*Planar Biphenyl Bridged Biradicals as Building Block for the Design of Quantum Magnets*  
Crystal Growth & Design **2012**, 12, 54-59. (Doi: 10.1021/cg201224g)

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  $k$ -(BEDT-TTF)<sub>2</sub>Cu[N(CN)<sub>2</sub>]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)<sub>2</sub>X (X=SbF<sub>6</sub> and PF<sub>6</sub>)*  
 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  $\alpha$ -(BEDT-TTF) $_2$ I $_3$*   
 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 EuB $_6$*   
 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  $\kappa$ -(BEDT-TTF) $_2$ Cu[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 [(CH $_3$ ) $_2$ NH $_2$ ][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 EtMe $_3$ P[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) $_2$ PF $_6$  and AsF $_6$  Bechgaard salts*  
 Phys. Rev. B **88**, 024105 (2013)
- M. Kraken, J. Engelke, S. Süllo, F. J. Litterst, M. Lang, C. Baines, H. Luetkens  
*Long range magnetic order in azurite from  $\mu$ SR*  
 J. Phys.: Conf. Ser. **391**, 012145 (2012)
- S. Süllo, A.U.B. Wolter, J. Müller, M. Lang, J.E. Daniels, V. Honkimäki, T. Buslaps  
*The crystal structure of polycrystalline powder  $\kappa$ -(BEDT-TTF) $_2$ Cu[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  $\kappa$ -(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  $\kappa$ -(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 Cu $_3$ (CO $_3$ ) $_2$ (OH) $_2$  as determined by neutron diffraction*  
 Phys. Rev. B **83**, 104401 (2011)
- F. Schödel, U. Tutsch, F. Isselbacher, D. Schweitzer, I. Sanger, 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 Cu $_3$ (CO $_3$ ) $_2$ (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. Müller, M. Lang, M. Wagner, H.-W. Lerner  
*Structural and electronic characteristics of a novel BEDT-TTF derivative: [BEDT-TTF] $_2$ [Cu $_2$ Br $_3$ ]*  
 Eur. J. Inorg. Chem. **1205-1211** (2011)
- M. de Souza, A. Brühl, 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. Brühl, 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 Grüneisen Scaling near a Finite Temperature Critical end Point*

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

R. S. Manna, M. de Souza, A. Brühl, J. A. Schlueter, and M. Lang

*Lattice Effects and Entropy Release at the Low-Temperature Phase Transition in the Spin-Liquid Candidate  $\kappa$ -(BEDT-TTF) $_2$ Cu $_2$ (CN) $_3$*

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

M. Lang, R.S. Manna, M. de Souza, A. Brühl, J.A. Schlueter

*Phase Transition and Lattice Distortion in the Proposed Spin-Liquid System  $\kappa$ -(BEDT-TTF) $_2$ Cu $_2$ (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) $_2$ X*

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

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

*Thermodynamic Studies at the Charge-Ordering and Spin-Peierls Transitions in (TMTTF) $_2$ X*

(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) $_2$ X via Thermal Expansion Measurements*

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

## B07

L.F. Tocchio, C. Gros, R. Valenti, F. Becca

*One-dimensional spin liquid, collinear, and spiral phases from uncoupled chains to the triangular lattice*

Physical Review B **89**, 235107 (2014).

L.F. Tocchio, C. Gros, X.-F. Zhang, S. Eggert

*Phase diagram of the triangular extended Hubbard model*

Physical Review Letters (in press)

R. Rüger, L.F. Tocchio, R. Valenti, C. Gros

*Phase diagram of the square lattice bilayer Hubbard model: A variational Monte Carlo study*

New Journal of Physics **16**, 033010 (2014).

L.F. Tocchio, H. Lee, H.O. Jeschke, R. Valentí, C. Gros

*Mott correlated states in the underdoped two-dimensional Hubbard model: variational Monte Carlo versus a dynamical cluster approximation*

Journal-ref.: Physical Review B **87**, 045111 (2013).

L.F. Tocchio, H. Feldner, F. Becca, R. Valentí, C. Gros

*Spin-liquid versus spiral-order phases in the anisotropic triangular lattice*



Journal-ref.: Physical Review B 87, 035143 (2013).

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

*Strong renormalization of the Fermi-surface topology close to the Mott transition*

Journal-ref.: Physical Review B 86, 035102 (2012).

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

*Backflow correlations in the Hubbard model: an efficient tool for the metal-insulator transition and the large- $U$  limit*

Journal-ref.: Physical Review B 83, 195138 (2011).

A. Di Ciolo, L.F. Tocchio, C. Gros

*Tunnelling matrix elements with antiferromagnetic Gutzwiller wave functions*

Journal-ref.: Physical Review 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  $\kappa$ -(ET) $2X$*

Phys. Rev. B **80**, 064419 (2009)

## **B08**

K. Medjanik, M. de Souza, D. Kutnyakhov, A. Gloskovskii, J. Müller, M. Lang, J.-P. Pouget, P. Leylekian, A. Moradpour, H. J. Elmers and G. Schönhense,

*Hard X-ray Photoemission Study of the Fabre Salts (TMTTF) $2X$  ( $X=SbF_6$  and  $PF_6$ ),*

European Journal of Physics B 87, 256 (2014)

A. Chernenkaya, K. Medjanik, P. Nagel, M. Merz, S. Schuppler, E. Canadell, J.-P. Pouget and G. Schönhense,

*Nature of the empty states and signature of the charge density wave instability and upper Peierls transition of TTF-TCNQ by temperature-dependent NEXAFS spectroscopy,*

accepted for publication in European Journal of Physics B, 2014

A. Chernenkaya A. Kotov, K. Medjanik, R. Morgunov, E. Yagubskii, H.J. Elmers and G. Schönhense,

*Temperature dependence of electronic and magnetic properties of (DOEO) $4$ [HgBr $4$ ]TCE single crystals,*

Sol. State Phen., submitted (2014), preprint available at arXiv:1411.2813

O. V. Koplak, A. Kotov, A. Chernenkaya, d, K. Medjanik, A. Gloskovskii, H. Callioni, G. Schönhense, A. F. Ciccaci and R.B. Morgunov,

*Condensation of holes into antiferromagnetic droplets in (DOEO) $4$ [HgBr $4$ ]TCE organic semiconductor,*

J. Appl. Phys., submitted (2014), preprint available at arXiv:1411.2802

- S. Eich, A. Stange, A.V. Carr, J. Urbancic, T. Popmintchev, M. Wiesenmayer, K. Jansen, A. Ruffing, S. Jakobs, T. Rohwer, S. Hellmann, C. Chen, P. Matyba, L. Kipp, K. Rossnagel, M. Bauer, M.M. Murnane, H.C. Kapteyn, S. Mathias, M. Aeschlimann,  
*Time- and angle-resolved photoemission spectroscopy with optimized high-harmonic pulses using frequency-doubled Ti: Sapphire lasers*,  
Journal of Electron Spectroscopy and Related Phenomena 195, 231 (2014)
- J. Klanke, E. Rentschler, K. Medjanik, D. Kutnyakhov, G. Schönhense, S. Krasnikov, I. V. Shvets, S. Schuppler, P. Nagel, M. Merz, and H. J. Elmers,  
*Beyond the Heisenberg Model: Anisotropic Exchange Interaction between a Cu-Tetraazaporphyrin Monolayer and Fe<sub>3</sub>O<sub>4</sub>(100)*,  
Phys. Rev. Lett. 110, 137202 (2013).
- K. Medjanik, D. Chercka, P. Nagel, M. Merz, S. Schuppler, M. Baumgarten, K. Müllen, S.A. Nepijko, H. J. Elmers, G. Schönhense, H. O. Jeschke, and Roser Valenti,  
*Orbital-Resolved Partial Charge Transfer from the Methoxy Groups of Substituted Pyrenes in Complexes with Tetracyanoquinodimethane – A NEXAFS Study*,  
J. Am. Chem. Soc. 134, 4694 (2012).
- K. Medjanik, A. Gloskovskii, D. Kutnyakhov, C. Felser, D. Chercka, M. Baumgarten, K. Müllen and G. Schönhense,  
*Charge transfer in the novel donor-acceptor complexes tetra- and hexamethoxyppyrene with tetracyanoquinodimethane studied by HAXPES*,  
J. Electron Spectrosc. Relat. Phenom. 185, 77 (2012).
- S. Naghavi, T. Gruhn, V. Alijani, G. H. Fecher, C. Felser, K. Medjanik, D. Kutnyakhov, S. A. Nepijko, G. Schönhense, R. Rieger, M. Baumgarten, K. Müllen ,  
*Theoretical study of new acceptor and donor molecules based on polycyclic aromatic hydrocarbons*, Journal of Molecular Spectroscopy 265 (2011) 95-101.
- K. Medjanik, S. Perkert, S. Naghavi, M. Rudloff, V. Solovyeva, D. Chercka, M. Huth, S. A. Nepijko, T. Methfessel, C. Felser, M. Baumgarten, K. Müllen, H.-J. Elmers, G. Schönhense,  
*Formation of an intermolecular charge-transfer compound in UHV codeposited tetramethoxyppyrene and tetracyanoquinodimethane*  
Phys. Rev. B82, 245419 (2010)
- 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 (2010) 7184
- 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)
- 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. 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

Cunbin An, Mengmeng Li, Tomasz Marszalak, Dan Li, Rüdiger Berger, Wojciech Pisula, Martin Baumgarten  
*Thiadiazoloquinoline-Based Ultralow-Bandgap Conjugated Polymers as Ambipolar Semiconductors for Field Effect Transistors*  
 Chem. Mater. 2014, 26, 5923–5929. (doi.org/10.1021/cm502563t)

Lie Chen, Martin Baumgarten, Xin Guo, Mengmeng Li, Tomasz Marszalek, Fares D. Alsewaleem, Wojciech Pisula, and Klaus Müllen  
*Alkyl substituted Dithienothieno[2,3-d;2',3'-d']benzo[1,2-b:4,5-b']dithiophene as solution processable hexathiaheptacene*  
 J. Mater Chem. C 2014, 2, 3625-3630 (DOI: 10.1039/C3TC32478H)

Klaus Müllen  
*Evolution of Graphene Molecules: Structural and Functional Complexity as Driving Forces behind Nanoscience*  
 ACS NANO, 8, 7, p.6531-6541

Franz Selzer, Christiane Falkenberg, Manuel Hamburger, Martin Baumgarten, Klaus Müllen, Karl Leo, Moritz Riede  
*Improved organic p-i-n type solar cells with n-doped fluorinated hexaazatrinaphthylene derivatives HATNA-F-6 and HATNA-F-12 as transparent electron transport material*  
 JOURNAL OF APPLIED PHYSICS, 2014, 115, 054515; doi: 10.1063/1.4864260

Mauro Castellani, Stefanie Winkler, Benjamin Bröker, Martin Baumgarten, Klaus Müllen, Norbert Koch  
*Work function increase of transparent conductive electrodes by solution processed electron acceptor molecular monolayers*  
 Appl. Phys. A 2014, 114, 291-295 (DOI: 10.1007/s00339-013-8048-x)

L. Zoephel, P. Gao, M. Baumgarten, M. Wagner, K. Müllen  
*Toward the peri-Pentacene Framework*  
 Chemistry Eur. J. 2013 chem.201302859

- D. Lorbach, M. Wagner, M. Baumgarten, K. Müllen  
*The Right Way to Self-fuse Bi- and Terpyrenyls to Afford Graphenic Cutouts*  
*Chem. Commun.* 2013, 49, 10578 - 10580 (DOI: 10.1039/c3cc45235b)
- M. Kivala, W. Pisula, S. Wang, A. Mavrinskiy, J-P. Gisselbrecht, X. Feng, K. Müllen  
Columnar Self-Assembly in Electron-Deficient Heterotriangulenes  
*Chem. Eur. J.* 2013, 19, 8117-8128 (DOI: 10.1002/Chem201300253)
- L. Chen, K. S. Mali, S. R. Puniredd, M. Baumgarten, K. Parvez, W. Pisula, S. De Feyter, K. Müllen,  
*Assembly and Fiber Formation of a Gemini-Type Hexathienocoronene Amphiphile for Electrical Conduction*  
*J. Am. Chem. Soc.* 2013, (doi.org/10.1021/ja4062135)
- X. Guo, M. Baumgarten, K. Müllen  
*Designing  $\pi$ -Conjugated Polymers for Organic Electronics*  
*J. Polym. Sci.* 2013, doi.org/10.1016/j.progpolymsci.2013.09.005
- S.-I. Kawano, M. Baumgarten, D. Chercka, V. Enkelmann, K. Müllen  
*Electron Donors and Acceptors via 2,7-Functionalized Pyrene-4,5,9,10-tetraone*  
*Chem. Commun.* 2013, 49, 5058-5060 (DOI: 10.1039/C3CC39141H)
- F. Schluetter, F. Rossel, M. Kivala, V. Enkelmann, J-P. Gisselbrecht, P. Ruffieux, R. Fasel, K. Müllen  
 *$\pi$ -Conjugated Heterotriangulene Macrocycles by Solution and Surface-supported Synthesis toward Honeycomb Networks*  
*J. Am. Chem. Soc.* 2013, 135, 4550-4557 (DOI: 10.1021/ja400857g)
- L. Zoephel, V. Enkelmann, K. Müllen  
*Tuning the HOMO-LUMO Gap of Pyrene Effectively via Donor-Acceptor Substitution: Positions 4,5 Versus 9,10*  
*Org. Lett.* 2013, 15, 804-807 (Doi: 10.1021/ol303476g)
- L. Chen, S. R. Puniredd, Y-Z. Tan, M. Baumgarten, U. Zschieschang, V. Enkelmann, W. Pisula, X. Feng, H. Klauk, K. Müllen  
Hexathienocoronenes: Synthesis and Self-Organization  
*J. Am. Chem. Soc.* 2012, 134, 17869-17872 (DOI: 10.1021/ja3082395)
- A.A. Vasilev, K. De Mey, I. Asselberghs, K. Clays, B. Champagne, S.E. Angelova, M. Spassova, C. Li, K. Müllen  
*Enhanced Intramolecular Charge Transfer in New Type Donor-Acceptor Substituted Perylenes*  
*J. Phys. Chem. C* 2012, 116, 43, 22711-22719
- L. Arnold, M. Baumgarten, K. Müllen,  
*A carbazole-containing porphyrinoid: synthesis and oxidation to the porphyrin-state*  
*Chem. Commun.*, 2012, 48, 9640-9642 (DOI: 10.1039/C2CC35550G)
- L. Arnold, S. Reddy Puniredd, C. von Malotki, W. Pisula, M. Baumgarten, M. Wagner, K. Müllen,  
*Fused  $\pi$ -Extended Discotic Triangular Porphyrinoids*

*J. Porph. & Phthal.* 2012, **15**, 757-779 (DOI: 10.1142/S1088424611003720)

K. Medjanik, D. Chercka, P. Nagel, M. Merz, S. Schuppler, M. Baumgarten, K. Müllen, S. A. Nepijko, H.--. Elmers, G. Schönhense, H. O. Jeschke, R. Valenti  
*Orbital-Resolved Partial Charge Transfer from the Methoxy Groups of Substituted Pyrenes in Complexes with Tetracyanoquinodimethane - a NEXAFS Study*  
*J. Am. Chem. Soc.* 2012, **134**, 4694-4699. (DOI: 10.1021/ja2100802)

J. Gorenflot, A. Sperlich, A. Baumann, D. Rauh, A. Vasilev, C. Li, M. Baumgarten, C. Deibel, V. Dyakonov  
*Detailed study of N,N'-(diisopropylphenyl)-terrylene-3,4:11,12-bis(dicarboximide) as electron acceptor for solar cells application*  
*Synth. Met.* 2012, **161**, 2669-2676. (DOI: 10.1016/j.synthmet.2011.09.041).

H.C. Hesse, C. Schaffer, C. Hundschell, A. Narita, X. Feng, K. Müllen, B. Nickel, L. Schmidt-Mende  
*Large polycyclic aromatic hydrocarbons for application in donor-acceptor photovoltaics*  
*Phys. Stat. Sol. A-Appl. Mater. Sci.* 2012, **209**, 785-789 (DOI: 10.1002/pssa.201127571)

X. Guo, S. Wang, V. Enkelmann, M. Baumgarten, K. Müllen  
*Making Benzotrithiophene a better electron donor*  
*Org. Lett.* 2011, **13**, 6062-6065. (DOI: 10.1021/ol2025372)

T. Dallos, M. Hamburger, M. Baumgarten  
*Thiadiazoloquinoxalines: Tuning Physical Properties through Smart Synthesis*  
*Org. Lett.* 2011, **13**, 1936-1939. (DOI: 10.1021/ol200250e)

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

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  $\kappa$ -(BEDT-TTF)<sub>2</sub>Cu[N(CN)<sub>2</sub>]Br*  
(submitted) arXiv: 1407.6252 (2014)

P. Lunkenheimer, B. Hartmann, M. Lang, J. Müller, D. Schweitzer, S. Krohns, A. Loidl

*Electronic relaxor ferroelectricity in charge-ordered  $\alpha$ -(BEDT-TTF)<sub>2</sub>I<sub>3</sub>*  
(submitted) arXiv: 1407.0339 (2014)

B. Hartmann, J. Müller, T. Sasaki

*Mott metal-insulator transition induced by utilizing a glass-like structural ordering in low-dimensional molecular conductors*  
(accepted for publication in Phys. Rev. B) arXiv:1410.8401 (2014)

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)<sub>2</sub>X (X=SbF<sub>6</sub> and PF<sub>6</sub>)*  
Eur. Phys. J. B **87**, 256 (2014)

R. Sekhar Manna, P. Das, M. de Souza, F. Schnelle, M. Lang, J. Müller, S. von Molnár, Z. Fisk

*Lattice Strain Accompanying the Colossal Magnetoresistance Effect in EuB<sub>6</sub>*  
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  $\kappa$ -(BEDT-TTF)<sub>2</sub>Cu[N(CN)<sub>2</sub>]Cl*  
IEEE Transactions on Magnetics **50**, 2700107 (2014)

R. Rommel, B. Hartmann, J. Brandenburg, J.A. Schlueter, J. Müller

*Nonlinear electronic transport in the anomalous metallic state of quasi-2D organic*

*superconductors  $\kappa$ -(BEDT-TTF) $_2$ X*  
Physica Status Solidi B 250, 568 (2013)

S. Süllo, A.U.B. Wolter, J. Müller, M. Lang, J.E. Daniels, V. Honkimäki, T. Buslaps  
*The crystal structure of polycrystalline powder  $\kappa$ -(BEDT-TTF) $_2$ Cu[N(CN) $_2$ ]Br studied by high energy x-ray diffraction*  
J. Phys.: Conf. Ser. 391, 012118 (2012)

Multiferroicity in an organic charge-transfer salt suggestive of electric-dipole-driven magnetism  
P. Lunkenheimer, J. Müller, S. Krohns, F. Schrettle, A. Loidl, B. Hartmann, R. Rommel, M. de Souza, C. Hotta, J.A. Schlueter, M. Lang  
Nature Materials 11, 755 - 758 (2012)

Effect of disorder on the charge-carrier dynamics in  $\kappa$ -(D<sub>8</sub>-BEDT-TTF) $_2$ Cu[N(CN) $_2$ ]Br  
J. Brandenburg, J. Müller, J.A. Schlueter  
Phys. Status Solidi C, 9, No. 5, 1171 - 1173 (2012)

Different electronic transport regimes in the quasi-two-dimensional organic conductors  $\kappa$ -(BEDT-TTF) $_2$ X  
J. Müller, J. Brandenburg, D. Schweitzer, J.A. Schlueter  
Phys. Status Solidi B, 249, No. 5, 957-961 (2012)

Sudden slowing down of the charge carrier dynamics at the Mott metal-insulator transition in  $\kappa$ -(D<sub>8</sub>-BEDT-TTF) $_2$ Cu[N(CN) $_2$ ]Br  
J. Brandenburg, J. Müller, J.A. Schlueter  
New Journal of Physics 14, 023033 (2012)

Fluctuation Spectroscopy - A new Approach for Studying Low-Dimensional Molecular Metals  
Invited Review Article  
J. Müller  
ChemPhysChem 2011, 12, 1222 – 1245

Structural and electronic characteristics of a novel BEDT-TTF derivative: [BEDT-TTF] $_2$ [Cu $_2$ Br $_3$ ]  
F. Schödel, U. Tutsch, F. Isselbacher, D. Schweitzer, I. Sängler, M. Bolte, J.W. Bats, J. Müller, M. Lang, M. Wagner, H.-W. Lerner  
Eur. J. Inorg. Chem. 2011, 1205-1211

J. Brandenburg, J. Müller, S. Wirth, J.A. Schlueter, D. Schweitzer  
*Strongly enhanced 1/f-noise level in  $\kappa$ -(BEDT-TTF) $_2$ X 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  $\beta$ -(BEDT-TTF) $_2$ SF $_5$ CH $_2$ CF $_2$ SO $_3$*   
J. Phys.: Conf. Ser. **200**, 012133 (2010)

M. de Souza, A. Brühl, J. Müller, P. Foury-Leylekian, A. Moradpour, J.-P. Pouget, M. Lang  
*Thermodynamic Studies at the Charge-Ordering and Spin-Peierls Transitions in (TMTTF) $_2$ X*



(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  $\kappa$ -(BEDT-TTF)<sub>2</sub>Cu[N(CN)<sub>2</sub>]Cl*  
*Phys. Rev. Lett.* **102**, 047004 (2009)

J. Müller, J. Brandenburg, J.A. Schlueter  
*I/f noise in the quasi-two-dimensional organic conductor  $\kappa$ -(BEDT-TTF)<sub>2</sub>Cu[N(CN)<sub>2</sub>]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  $\kappa$ -(BEDT-TTF)<sub>2</sub>X for X= Cu[N(CN)<sub>2</sub>]Cl, Cu[N(CN)<sub>2</sub>]Br and Cu(NCS)<sub>2</sub>: Implications for the phase diagram of these quasi-2D organic superconductors*  
*Phys. Rev. B* **65**, 144521 (2002)

## B12

Chernenkaya A. Kotov, K. Medjanik, R. Morgunov, E. Yagubskii, H.J. Elmers and G. Schönhense,  
*Temperature dependence of electronic and magnetic properties of (DOEO)<sub>4</sub>[HgBr<sub>4</sub>]TCE single crystals,*  
*Sol. State Phen.*, submitted (2014), preprint available at arXiv:1411.2813

K. Medjanik, M. de Souza, D. Kutnyakhov, A. Gloskovskii, J. Müller, M. Lang, J.- P. Pouget, P. Lylekian, A. Moradpour, H. J. Elmers and G. Schönhense,  
*Hard X-ray Photoemission Study of the Fabre Salts (TMTTF)<sub>2</sub>X (X=SbF<sub>6</sub> and PF<sub>6</sub>)*  
*European Journal of Physics B* **87**, 256 (2014)

S. Diehl, T. Methfessel, J. Müller, M. Lang, M. Huth, M. Jourdan, and H.J. Elmers  
*Evidence for electronic granularity in the organic superconductor  $\kappa$ -(BEDT-TTF)<sub>2</sub>Cu[N(CN)<sub>2</sub>]Br,*  
 submitted (2014); preprint available at arXiv:1410.5245.

S. Diehl, T. Methfessel, J. Müller, M. Lang, M. Huth, M. Jourdan, and H.J. Elmers  
*Local density of states in the organic superconductor  $\kappa$ -(BEDT-TTF)<sub>2</sub>Cu[N(CN)<sub>2</sub>]Br,*  
 submitted (2014); preprint available at arXiv:1411.2813.

*Tuning the hole injection barrier in the intermolecular charge-transfer compound DTBDT-F(4)TCNQ at metal interfaces,* D.Bayer, S. Diehl, M. Baumgarten, K. Muellen, T. Methfessel, H.J. Elmers, *Phys. Rev. B* **89**, 075435 (2014)

Klanke, J., Rentschler, E., Medjanik, K., Kutnyakhov, D., Schönhense, G., Krasnikov, S., Shvets, I. V., Schuppler, S., Nagel, P., Merz, M. and Elmers, H. J.  
*Beyond the Heisenberg Model: Anisotropic Exchange Interaction between a Cu-Tetraazaporphyrin Monolayer and Fe<sub>3</sub>O<sub>4</sub>(100)*  
*Phys. Rev. Lett.*, 2013 Vol 110, pp. 137202

K. Medjanik, D. Chercka, P. Nagel, M. Merz, S. Schuppler, M. Baumgarten, K. Müllen, S. A. Nepijko, H.--. Elmers, G. Schönhense, H. O. Jeschke, R. Valenti  
*Orbital-Resolved Partial Charge Transfer from the Methoxy Groups of Substituted Pyrenes in Complexes with Tetracyanoquinodimethane - a NEXAFS Study*  
J. Am. Chem. Soc. 2012, 134, 4694-4699. (DOI: 10.1021/ja2100802)

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 tetramethoxypyrene (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)