

8.5 Publications

The following lists cover the period from April 1st 2005 to March 31st 2006:

1. Scientific articles in journals with peer review
2. Scientific articles in journals without peer review
3. Books and scientific articles in anthologies
4. Books
5. Reports

The most important publications are outlined by an asterisk.

The lists are sorted by collaborative project. Lists sorted by group member are available on request.

8.5.1 Scientific articles in journals with peer review

Project 1

*F. ALET, J. LYKKE JACOBSEN, G. MISGUICH, V. PASQUIER, F. MILA, M. TROYER
Interacting classical dimers on the square lattice
Phys. Rev. Lett. **94**, 235702 (2005)
 (project # 1, group Mila)

F. F. ASSAAD, P. WERNER, P. CORBOZ, E. GULL
 M. TROYER
Symmetry projection schemes for Gaussian Monte Carlo methods
In press Phys. Rev. B (2006)
 (project # 1, group Troyer)

*S. P. BAYRAKCI, I. MIREBEAU, P. BOURGES, Y. SIDIS, M. ENDERLE, J. MESOT, D. P. CHEN, C. T. LIN, B. KEIMER
Magnetic Ordering and Spin Waves in $\text{Na}_{0.82}\text{CoO}_2$
Phys. Rev. Lett. **94**, 157205-1/4 (2005)
 (project # 1, group Mesot)

*R. BENDJAMA, B. KUMAR, F. MILA
Absence of Single-Particle Bose-Einstein Condensation at Low Densities for Bosons with Correlated Hopping
Phys. Rev. Lett. **95**, 110406 (2005)
 (project # 1, group Mila)

C. J. BOLECH, T. GIAMARCHI
Keldysh study of point-contact tunnelling between superconductors
Phys. Rev. B **71**, 0245-1/10 (2005)
 (project # 1, group Giamarchi)

*H. P. BÜCHLER, M. HERMELE, S. D. HUBER, M. P. A. FISHER, P. ZOLLER
Atomic Quantum Simulator for Lattice Gauge Theories and Ring Exchange Models
Phys. Rev. Lett. **95**, 040402-1/4 (2005)
 (project # 1, group Blatter)

M. BÜTTIKER, A. N. JORDAN
Ground State Entanglement Energetics
Physica E **29**, 272-282 (2005)
 (project # 1, group Büttiker)

M. BÜTTIKER, D. SANCHEZ

Interaction-induced magnetic field asymmetry of nonlinear mesoscopic electrical transport
International Journal of Quantum Chemistry **105**, 906-913 (2005)
 (project # 1, group Büttiker)

*G. CAIMI, A. PERUCCHI, L. DEGIORGI, H.R. OTT, V.M. PEREIRA, A.H. CASTRO-NETO, A.D. BIANCHI, Z. FISK
Magneto-optical evidence of double exchange in a percolating lattice
Phys. Rev. Lett. **96**, 016403 (2006)
 (project # 1, group Degiorgi)

F. CARBONE, M. ZANGRANDO, A. BRINKMAN, A. NICOLAOU, F. BONDINO, E. MAGNANO, A. A. NUGROHO, TH. JARLBORG, F. PARMIGIANI, D. VAN DER MAREL
How strongly correlated is MnSi ?
cond-mat/0601509; Phys. Rev. B, in press (2006)
 (project # 1, group Van der Marel)

*M. A. CAZALILLA, A. F. HO, T. GIAMARCHI
Two component Fermi gas on internal-state-dependent optical lattices
Phys. Rev. Lett. **95**, 226402 (2005)
 (project # 1, group Giamarchi)

R. CHITRA, T. GIAMARCHI
Zero field Wigner crystal
Eur. Phys. J. B **44**, 455-467 (2005)
 (project # 1, group Giamarchi)

*S.G. CHIUZBAIAN, G. GHIRINGHELLI, C. DALLERA, M. GRIONI, P. AMMAN, X. WANG, L. BRAICOVICH, AND L. PATTHEY
Localized screening excitations in NiO studied with resonant inelastic x-ray scattering at the Ni M-threshold: evidence of spin-flip
Phys. Rev. Lett. **95**, 197402 (2005)
 (project # 1, group Grioni)

V. S.-W. CHUNG, P. SAMUELSSON, M. BÜTTIKER
Visibility of current and shot noise in electrical Mach-Zehnder and Hanbury Brown Twiss interferometers
Phys. Rev. B **72**, 125320-1/13 (2005)
 (project # 1, group Büttiker)

R. CITRO, E. ORIGNAC, T. GIAMARCHI
Adiabatic-antiadiabatic crossover in a spin-Peierls chain
Phys. Rev. B **72**, 024434-1/19 (2005)
 (project # 1, group Giamarchi)

C. DALLERA, E. ANNESE, J-P. RUEFF, M. GRIONI, G. VANKO, L. BRAICOVICH, A. BARLA, J-P. SANCHEZ, R. GUSMEROLI, A. PALENZONA, L. DEGIORGI, G. LAPERTOT
Intermediate valence behaviour under pressure: how precisely can we probe it by means of resonant inelastic x-ray emission?
J. Phys.: Condens. Matter **17**, S849-S858 (2005)
 (project # 1, group Degiorgi)
 (project # 1, group Grioni)

J. DORIER, F. BECCA, F. MILA
The Quantum Compass Model on the Square Lattice
Phys. Rev. B **72**, 024448-1/8 (2005)
 (project # 1, group Mila)

M. DRESSEL, K. PETUKHOV, B. SALAMEH, P. ZORNOZA, T. GIAMARCHI
Scaling behavior of the longitudinal and transverse transport in quasi-one dimensional organic conductors
Phys. Rev. B, **71**, 075104-1/10 (2005)
 (project # 1, group Giamarchi)

*A. J. DREW, S. L. LEE, D. CHARALAMBOUS, A. POTENZA, C. MARROWS, H. LUETKENS, A. SUTER, T. PROKSCHA, R. KHASANOV, E. MORENZONI, D. UCKO, E. M. FORGAN
Coexistence and Coupling of Superconductivity and Magnetism in Thin Film Structures
Phys. Rev. Lett. **95**, 197201 (2005)
 (project # 1, group Mesot)

M. ELHAJAL, F. MILA
Dynamic spin Jahn-Teller effect in small magnetic clusters
Eur. Phys. J. B **47**, 185-192 (2005)
 (project # 1, group Mila)

M. ENDERLE, C. MUKHERJEE, B. FÅK, R. K. KREMER, J.- M. BROTO, H. ROSNER, S.- L. DRECHSLER, J. RICHTER, J. MALEK, A. PROKOFIEV, W. ASSMUS, S. PUJOL, J.-L. RAGAZZONI, H. RAKOTO, M. RHEINSTÄDTER, H. M. RØNNOW
Quantum Helimagnetism of the frustrated spin-1/2 chain LiCuVO_4
Europhys. Lett. **70**, 237-243 (2005)
 (project # 1, group Mesot)

M. C. FALUB, M. SHI, P. R. WILLMOTT, J. KREMPASKY, S. G. CHIUZBAIAN, K. HRICOVINI, L. PATTHEY
Polarization - dependent angle-resolved photoemission study of $\text{La}_{1-x}\text{Sr}_x\text{MnO}_3$
Phys. Rev. B **72**, 054444 (2005)
 (project # 1, group Grioni)

H. FORSTER, S. PILGRAM, M. BÜTTIKER

Decoherence and Full Counting Statistics in a Mach-Zehnder Interferometer
Phys. Rev. B **72**, 07530-1/10 (2005)
 (project # 1, group Büttiker)

J.-B. FOUET, A. LAEUCHLI, S. PILGRAM, R. M. NOACK, F. MILA
Frustrated three-leg spin tubes: from spin 1/2 with chirality to spin 3/2
Phys. Rev. B **73**, 014409-1/7 (2006)
 (project # 1, group Mila)

L. V. GASPAROV, D. ARENAS, K-Y. CHOI, G. GÜNTHERODT, H. BERGER, L. FORRÓ, G. MARGARITONDO, V. V. STRUZHKIN, R. HEMLEY
Magnetite: Raman study of the high-pressure and low-temperature effects
Journal of Applied Physics **97**, 10A922 (2005)
 (project # 1, group Forró)

J. L. GAVILANO, E. FELDER, D. RAU, H. R. OTT, P. MILLET, F. MILA, T. CICHOREK, A. C. MOTA
Unusual magnetic properties of the low-dimensional quantum magnet $\text{Na}_2\text{V}_3\text{O}_7$
Phys. Rev. B **72**, 064431-1/10 (2005)
 (project # 1, group Ott)
 (project # 1, group Mila)

J. L. GAVILANO, D. RAU, B. PEDRINI, K. MAGISHI, M. WELLER, J. HINDERER, H. R. OTT, S. M. KAZAKOV, J. KARPINSKI
Unconventional charge ordering in $\text{Na}_{0.7}\text{CoO}_2$ below 300K?
Physica B **359-361**, 1237-1231 (2005)
 (project # 1, group Ott)

R. GILARDI, S. STREULE, N. MOMONO, M. ODA, J. MESOT
Doping dependence of the vortex glass and sublimation transitions in the high- T_c superconductor $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$ as determined from macroscopic measurements
Eur. Phys. J B **47**, 231-237 (2005)
 (project # 1, group Mesot)

M. GRIONI, CH. AST, D. PACILÉ, M. PAPAGNO, H. BERGER, L. PERFETTI
Photoemission as a probe of coexisting and conflicting periodicities in low-dimensional solids
New J. Phys. **7**, 106 (2005)
 (project # 1, group Grioni)

P. GRÖNING
Nanotechnology: An Approach to Mimic Natural Structures and Concepts
Advanced Engineering Materials **7**, 279-292 (2005)
 (project # 1, group Schlapbach)

O. GRÖNING, R. WIDMER, P. RUFFIEUX, P. GRÖNING
The Local Density of States on the 2-Fold Surface of the Icosahedral AlPdMn Quasicrystal
Philosophical Magazine A **86**, 781-787 (2006)
 (project # 1, group Schlapbach)

M. HERAK, H. BERGER, M. PRESTER, M. MILJAK, I. ZIVKOVIC, O. MILAT, D. DROBAC, S. POPOVIC, O. ZAHARKO
Novel spin lattice in Cu_3TeO_6 : an antiferromagnetic order and domain dynamics
J. Phys.: Condens. Matter **17**, 7667-7679 (2005)
 (project # 1, group Mesot)

M. INDERGAND, M. SIGRIST
Effective interaction between the interpenetrating Kagome lattices in Na_xCoO_2
Physica B **359-361**, 1357-1359 (2005)
 (project # 1, group Sigrist)

*M. INDERGAND, Y. YAMASHITA, H. KUSUNOSE, M. SIGRIST
Effective Interaction between the interpenetrating Kagome lattices in Na_xCoO_2
Phys. Rev. B **71**, 214414-1/19 (2005)
 (project # 1, group Sigrist)

*A. N. JORDAN, M. BÜTTIKER
Continuous quantum measurement with independent cross-correlations
Phys. Rev. Lett. **95**, 220401 (2005)
 (project # 1, group Büttiker)

A. N. JORDAN, M. BÜTTIKER
Quantum nondemolition measurement of a kicked qubit
Phys. Rev. B **71**, 125333-1/7 (2005)
 (project # 1, group Büttiker)

*A. KAMINSKI, H. M. FRETWELL, M. R. NORMAN, M. RANDEIRA, S. ROSENKRANZ, U. CHATTERJEE, J. C. CAMPUZANO, J. MESOT, T. SATO, T. TAKAHASHI, T. TERASHIMA, M. TAKANO, K. KADOWAKI, Z. Z. LI, H. RAFFY
Momentum anisotropy of the scattering rate in cuprate superconductors
Phys. Rev. B **71**, 014517-1/7 (2005)
 (project # 1, group Mesot)

R. KHASANOV, D. DI CASTRO, M. BELOGOLOVSKII, YU. PADERNO, V. FILIPPOV, R. BRÜTSCH, H. KELLER
Anomalous electron-phonon coupling probed on the surface of superconductor ZrBr_{12}
Phys. Rev. B **72**, 224509-1/5 (2005)
 (project # 1, group Mesot)

R. KHASANOV, D. G. ESHCHENKO, D. DI CASTRO, A. SHENGELAYA, F. LA MATTINA, A. MAISURADZE, C. BAINES, H. LUETKENS, J. KARPINSKI, S. M. KAZAKOV, H. KELLER
Magnetic penetration depth in RbOs_2O_6 studied by muon spin rotation
Phys. Rev. B **72**, 104504-1/7 (2005)
 (project # 1, group Mesot)

R. KHASANOV, J. KARPINSKI, H. KELLER
Pressure effect on the in-plane magnetic penetration depth in $\text{YBa}_2\text{Cu}_4\text{O}_8$
J. Phys.: Condens. Matter **17**, 2453-2460 (2005)
 (project # 1, group Mesot)

R. KHASANOV, T. SCHNEIDER, H. KELLER
Pressure effects on the superconducting properties of $\text{Yba}_2\text{Cu}_4\text{O}_8$
Phys. Rev. B **72**, 014524-1/4 (2005)
 (project # 1, group Mesot)

N. KOCH, F. JÄCKEL, J. GHIJSEN, M. C. ROJAS, M. GRIONI, J. P. RABE, R. L. JOHNSON, A. KAHN, J.-J. PIREAUX
Observation of filled states at the Fermi level in alkali-metal intercalated organic films: dependence on substrate work function
J. Electron Spectroscopy and Related Phenomena, **144-147**, 495-498 (2005)
 (project # 1, group Grioni)

K. KODAMA, S. MIYAHARA, M. TAKIGAWA, M. HORVATIC, C. BERTHIER, F. MILA, H. KAGEYAMA, Y. UEDA
Field-Induced Effects of Anisotropic Magnetic Interactions in $\text{SrCu}_2(\text{BO}_3)_2$
J. Phys.: Condens. Matter **17**, L61-L68 (2005)
 (project # 1, group Mila)

A. KOGA, N. KAWAKAMI, T.M. RICE, M. SIGRIST
Mott transitions in the multi-orbital systems
Physica B **359-361**, 1366-1368 (2005)
 (project # 1, group Sigrist)

*A. KOGA, N. KAWAKAMI, T.M. RICE, M. SIGRIST
Spin, charge and orbital fluctuations in a multi-orbital Mott-insulator
Phys. Rev. B **72**, 045128-1/8 (2005)
 (project # 1, group Sigrist)

V. N. KOTOV, M. ELHAJAL, M. E. ZHITOMIRSKY F. MILA
Dzyloshinsky-Moriya induced order in the spin-liquid phase of the pyrochlore antiferromagnet
Phys. Rev. B **72**, 014421-1/7 (2005).
 (project # 1, group Mila)

K. KUEPPER, M. C. FALUB, K. C. PRINCE, V. R. GALAKHOV, I. O. TROYANCHUK, S. G. CHIUZBAIAN, M. MATTEUCCI, D. WETT, R. SZARGAN, N. A. OVECHKINA, YA. M. MUKOVSKII, M. NEUMANN
Electronic Structure of A- and B- Site Doped Lanthanum Manganites: A Combined X-ray Spectroscopic Study
J. of Phys. Chem. B **109**, 9354-9361 (2005)
 (project # 1, group Grioni)

A. B. KUZMENKO
Kramers-Kronig constrained variational analysis of optical spectra
Rev. Sci. Instr. **76**, 83108-83117 (2005)
 (project # 1, group Van der Marel)

N. LAFLORENCIE, D. POILBLANC, M. SIGRIST
Critical properties of doped coupled spin-Peierls chains
Phys. Rev. B **71**, 212403-1/4 (2005)
 (project # 1, group Sigrist)

*B. LAKE, K. LEFMANN, N. B. CHRISTENSEN, G. AEPPLI, D. F. MCMORROW, H. M. RONNOW, P. VORDERWISCH, P. SMEIBIDL, N. MANGKORNTONG, T. SASAGAWA, M. NOHARA, H. TAKAGI

Three-dimensionality of field-induced magnetism in a high-temperature superconductor

Nature materials **4**, 658-662 (2005)
(project # 1, group Mesot)

*A. LÄUCHLI, J.C. DOMENGE, C. LHUILLIER, P. SINDZINGRE, M. TROYER,

Two-Step Restoration of SU(2) Symmetry in a Frustrated Ring-Exchange Magnet

Phys. Rev. Lett. **95**, 137206 (2005)
(project # 1, group Troyer)

A. V. LEBEDEV, G. B. LESOVIK, G. BLATTER
Generating spin-entangled electron pairs in normal conductors using voltage pulses

Phys. Rev. B **72**, 245314-1/8 (2005)
(project # 1, group Blatter)

S. LEE, A. A. PODLESNYAK, K. PROKES, V. E. SIKOLENKO, A. S. ERMOLENKO, E.G. GERASIMOV, YU. A. DOROFEEV, A. P. VOKHMYANIN, J.-G. PARK, A. N. PIROGOV

Magnetic Phase Transitions in TbNi₅ Single Crystal: Bulk Properties and Neutron Diffraction Studies

JEPT Letters **82**, 34-38 (2005)
(project # 1, group Mesot)

G. B. LESOVIK, A. V. LEBEDEV, G. BLATTER
Wave function collapse in a mesoscopic device

Phys. Rev. B **71**, 125313-1/7 (2005)
(project # 1, group Blatter)

M. MATSUMOTO, B. NORMAND, T.M. RICE, M. SIGRIST

The soft mode transition induced by magnetic field and pressure in TICuCl₃ and related dimer compounds

Prog. Theor. Phys. Suppl. **159**, 200-207 (2005)
(project # 1, group Sigrist)

M. MATSUMOTO, M. SIGRIST

Ehrenfest relations and magnetoelastic effects in field-induced ordered phases

J. Phys. Soc. Jpn. **74**, 2310-2316 (2005)
(project # 1, group Sigrist)

V. V. MAZURENKO, F. MILA, V.I. ANISIMOV

Electronic Structure and Exchange Interactions of Na₂V₃O₇

Phys. Rev. B, in press (condmat/0509315)
(project # 1, group Mila)

M. MEDARDE, C. DALLERA, M. GRIONI, J. VOIGT, A. PODLESNYAL, E. POMJAKUSHINA, K. CONDER, TH. NEISIUS, O. TJERNBERG, AND S.N. BARILO

The low-temperature spin-state transition in LaCoO₃ investigated by x-ray absorption at the Co K edge

Phys. Rev. B, accepted
(project # 1, group Grioni)

F. P. MENA, J. F. DITUSA, D. VAN DER MAREL, G. AEPPLI, D. P. YOUNG, A. DAMASCELLI, J. A. MYDOSH

Suppressed reflectivity due to spin-controlled localization in a magnetic semiconductor

cond-mat/0511665; Phys. Rev. B, in press (2006)
(project # 1, group Van der Marel)

F. P. MENA, A. B. KUZMENKO, A. HADIPOUR, J. L. M. VAN MECHELEN, D. VAN DER MAREL, N. A. BABUSHKINA

Oxygen isotope effect and phase separation in the optical conductivity of (La_{0.5}Pr_{0.5})_{0.7}Ca_{0.3}MnO₃ thin films

Phys. Rev. B **72**, 134422-1/10 (2005)
(project # 1, group Van der Marel)

J. MESOT, J. CHANG, J. KOHLBRECHER, R. GILARDI, A. J. DREW, U. DIVAKAR, D.O.G. HERON, S. J. LISTER, S. L. LEE, S.P. BROWN, D. CHARALAMBOUS, E.M. FORGAN, F. Y. OGRIN, G. I. MENON, C.D. DEWHURST, R. CUBITT, C. BAINES, N. MOMONO, M. ODA, T. UEFUJI, K. YAMADA

Combined Neutron Scattering and Muon-Spin Rotation Investigations of the Abrikosov State of High-Temperature Superconductors

Proc. of SPIE **5932**, 59322D-1/8 (2005)
(project # 1, group Mesot)

E. MINOUX, O. GRÖNING, K.B.K. TEO, S.H. DALAL, L. GANGLOFF, J.-P. SCHNELL, L. HUDANSKI, I.Y.Y. BU, P. VINCENT, P. LEGAGNEUX, G.A.J. AMARATUNGA, W.I. MILNE

Achieving High Current Carbon nanotube Emitters

Nano Letters **5**, 2135-2138 (2005)
(project # 1, group Schlapbach)

G. MISGUICH, V. PASQUIER, F. MILA, C. LHUILLIER

Quantum dimer model with Z₂ liquid ground-state: interpolation between cylinder and disk topologies and toy model for a topological quantum-bit

Phys. Rev. B **71**, 184424-1/10 (2005)
(project # 1, group Mila)

A. N. OBRAZTSOV, O. GRÖNING, A. A. ZOLOTUKHIN, AL. A. ZAKHIDOV, A. P. VOLKOV

Correlation of field emission properties with morphology and surface composition of CVD nanocarbon films

Diamond and Related Materials, accepted for publication (2005)
(project # 1, group Schlapbach)

G. PANACCIONE, G. CAUTERO, M. CAUTERO, A. FONDACARO, M. GRIONI, P. LACOVIG, G. MONACO, F. OFFI, G. PAOLICELLI, M. SACCHI, N. STOJIC, G. STEFANI, R. TOMMASINI, P. TORELLI

High-energy photoemission in silver: resolving d and sp contributions in valence band spectra

J. Phys. Condens. Matter **17**, 2671-2679 (2005)
(project # 1, group Grioni)

G. PAOLICELLI, A. FONDACARO, F. OFFI, G. STEFANI, G. CAUTERO, M. CAUTERO, B. KRASTANOV, P. LACOVIG, P. PITTANA, R. SERGO, R. TOMMASINI, P. TORELLI, M. SACCHI, M. GRIONI, G. MONACO, G. PANACCIONE
Bulk sensitive photoemission: first results of VOLPE project at ESRF
J. Electron Spectrosc. **144-147**, 963-966 (2005)
(project # 1, group Grioni)

*P. PARUCH, T. GIAMARCHI, J.-M. TRISCONI
Domain wall roughness in epitaxial ferroelectric $PbZr_{0.2}Ti_{0.8}O_3$ thin films
Phys. Rev. Lett. **94**, 197601 (2005)
(project # 1, group Giamarchi)

B. PEDRINI, J. L. GAVILANO, S. WEYENETH, E. FELDER, J. HINDERER, M. WELLER, H. R. OTT, S. M. KAZAKOV, J. KARPINSKI
Magnetic phase transition at 88 K in $Na_{0.5}CoO_2$ revealed by ^{23}Na NMR investigations
Phys. Rev. B **72**, 214407-1/10 (2005)
(project # 1, group Ott)

L. PERFETTI, T. A. GLOOR, F. MILA, H. BERGER, M. GRIONI
Unexpected periodicity in the quasi-two-dimensional Mott insulator $1T-TaS_2$ revealed by angle-resolved photoemission
Phys. Rev. B **71**, 153101-1/4 (2005)
(project # 1, group Mila)
(project # 1, group Grioni)

A. PODLESNYAK, P.S. HÄFLIGER, K. CONDER, A. FURRER
Neutron spectroscopic study of the pseudogap formation in $La_{1.81}Sr_{0.15}Ho_{0.04}CuO_4$ at ambient and elevated pressure
J. Phys.: Condens. Matter **17**, S801-S806 (2005)
(project # 1, group Mesot)

A. PODLESNYAK, S. STREULE, M. MEDARDE, K. CONDER, E. POMJAKUSHINA, J. MESOT
Effect of oxygen nonstoichiometry on structural and magnetic properties of $PrBaCo_2O_{5+d}$
Physica B **359-361**, 1348-1350 (2005)
(project # 1, group Mesot)

D. POILBLANC, A. LAEUCHLI, M. MAMBRINI, F. MILA
Spinon confinement around a vacancy in frustrated quantum antiferromagnets
Submitted to Phys. Rev. Lett. (cond-mat/0506810)
(project # 1, group Mila)

A. RALKO, M. FERRERO, F. BECCA, D. IVANOV, F. MILA
Zero-Temperature Properties of the Quantum Dimer Model on the Triangular Lattice
Phys. Rev. B **71**, 224109-1/9 (2005)
(project # 1, group Mila)

CH. RENNER, G. AEPPLI, H. M. RØNNOW

Charge Ordering, Stripes and Phase Separation in Manganese Perovskite Oxides: an STM/STS Study
Materials Science and Engineering C **25**, 775-778 (2005)
(project # 1, group Mesot)

*H. M. RØNNOW, R. PARTHASARATHY, J. JENSEN, G. AEPPLI, T.F. ROSENBAUM, D. F. MCMORROW
Quantum Phase Transition of a Magnet in a Spin Bath
Science **308**, 389-392 (2005)
(project # 1, group Mesot)

*A. RÜEGG, M. INDERGAND, S. PILGRAM, M. SIGRIST
Slave-boson theory of the Mott transition in the two-band Hubbard model
Eur. Phys. J. B **48**, 55-64 (2005)
(project # 1, group Sigris)

*CH. RÜEGG, B. NORMAND, M. MATSUMOTO, CH. NIEDERMAYER, A. FURRER, K. W. KRÄMER, H.-U. GÜDEL, PH. BOURGES, Y. SIDIS, H. MUTKA
Quantum Statistics of Interacting Dimer Spin Systems
Phys. Rev. Lett. **95**, 26720-1/4 (2005)
(project # 1, group Mesot)

P. RUFFIEUX, M. MELLE-FRANCO, O. GRÖNING, M. BIELMANN, F. ZERBETTO, P. GRÖNING
Charge-density oscillation on graphite induced by the interference of electron waves
Phys. Rev. B **71**, 153403 (2005)
(project # 1, group Schlappbach)

M. SACCHI, F. OFFI, P. TORELLI, A. FONDACARO, C. SPEZZANI, M. CAUTERO, G. CAUTERO, S. HUOTARI, M. GRIONI, R. DELAUNAY, M. FABRIZIOLI, G. VANKÓ, G. MONACO, G. PAOLICELLI, G. STEFANI, G. PANACCIONE
Quantifying the effective attenuation length in high energy photoemission experiments
Phys. Rev. B **71**, 155117-1/8 (2005)
(project # 1, group Grioni)

P. SAMUELSSON, M. BÜTTIKER
Dynamic generation of orbital quasiparticle entanglement in mesoscopic conductors
Phys. Rev. B **71**, 245317-1/5 (2005)
(project # 1, group Büttiker)

P. SAMUELSSON, M. BÜTTIKER
Quantum state tomography with quantum shot noise
Phys. Rev. B, accepted, cond-mat/0506446
(project # 1, group Büttiker)

P. SAMUELSSON, E.V. SUKHORUKOV, M. BÜTTIKER
Quasiparticle entanglement: redefinition of the vacuum and reduced density matrix approach

New J. Phys. **7**, 176 (2005)
(project # 1, group Büttiker)

D. SANCHEZ, M. BÜTTIKER
Chirality in Coulomb-blockaded quantum dots
Phys. Rev. B **72**, 201308-1/4 (2005)
(project # 1, group Büttiker)

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Effect of the magnetic field on the gaps of MgB₂: A directional point-contact study

Journal of Physics and Chemistry of Solids, in press
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(project # 4, group Karpinski)

Project 5

C.H. AHN, A. BATTACHARYA, A.M. GOLDMAN, M. DI VENTRA, J.N. ECKSTEIN, C. DANIEL FRISBIE, M.E. GERSHENSON, I.H. INOUE, J. MANNHART, A. MILLIS, A. MORPURGO, D. NATELSON, J.-M. TRISCONE

Electrostatic modification of novel materials

Submitted to Review of Modern Physics
(project # 5, group Triscone)

C. BATTAGLIA, H. CERCELLIER, F. CLERC, L. DESPONT, G. GARNIER, C. KOITZSCH, P. AEBI, H. BERGER, L. FORRÓ, C. AMBROSCH-DRAXL

Fermi surface induced distortion in NbTe_2

Phys. Rev. B **72**, 195114-1/10 (2005)
(project # 5, group Aebi, Martinoli)

L. BENFATTO, S. G. SHARAPOV, N. ANDRENACCI, H. BECK

Ward identity and optical conductivity sum rule in the d-density wave state

Phys. Rev. B **71**, 104511-1/18 (2005)
(project # 5, group Martinoli)

M. DAWBER, C. LICHTENSTEIGER, P. PARUCH, J.-M. TRISCONE

Advanced fabrication and characterization of epitaxial ferroelectric thin films and multilayers

Accepted in *IEEE Transactions on Ultrasonics, Ferroelectric and Frequency Control (TUFFC)*
(project # 5, group Triscone)

*M. DAWBER, C. LICHTENSTEIGER, M. CANTONI, M. VEITHEN, P. GHOSEZ, K. JOHNSTON, K.M. RABE, J.-M. TRISCONE

Unusual behavior of the ferroelectric polarization in $PbTiO_3/SrTiO_3$ superlattices

Phys. Rev. Lett. **95**, 177601 (2005)
(project # 5, group Triscone)

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Direct evidence for surface ferroelectricity in ultra-thin perovskite films

To appear in *Physical Review B*
(project # 5, group Triscone)

L. DESPONT, C. LICHTENSTEIGER, F. CLERC, M.G. GARNIER, F.J. GARCIA DE ABAJO, M.A. VAN HOVE, J.-M. TRISCONE, P. AEBI

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Eur. Phys. J., accepted
(project # 5, group Aebi, Martinoli)

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Published in *EPJB*
(project # 5, group Triscone)

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Accepted *Suf. Sci.*
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Physica Status Solidi (c) **2**, 1668-1673 (2005)
(project # 5, group Schilling)

K. IL'IN, M. SIEGEL, A. SEMENOV, A. ENGEL, H.-W. HÜBERS

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Photoemission of a Quantum Cavity with non-magnetic Spin Separator

Phys. Rev. Lett. **95**, 126401-1/4 (2005)
(project # 5, group Aebi, Martinoli)

S. E. KORSHUNOV

Fluctuation induced vortex pattern and its disordering in the fully frustrated XY model on a dice lattice

Phys. Rev. B **71**, 174501-1/20 (2005)
(project # 5, group Martinoli)

*S. E. KORSHUNOV

Uniformly frustrated XY model without vortex-pattern ordering

Phys. Rev. Lett. **94**, 087001 (2005)
(project # 5, group Martinoli)

O. KUFFER, I. MAGGIO-APRILE, Ø. FISCHER

Nanoscale ferroelectric field-effect writing and reading using scanning tunneling spectroscopy

Nature Materials **4** (5), 378-382 (2005)
(project # 5, group Fischer)

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V. I. MARCONI

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(project # 5, group Martinoli)

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Diffuse interface approach to brittle fracture

Phys. Rev. E **71**, 036110-1/9 (2005)
(project # 5, group Martinoli)

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Oxygen isotope effect and phase separation in the optical conductivity of $(La_{0.5}Pr_{0.5})_{0.7}Ca_{0.3}MnO_3$ thin films

Phys. Rev. B **72**, 134422-1/10 (2005)
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Phys. Rev. Lett. **94**, 197601 (2005)
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The Influence of Ti Doping Methods on the High Field Performance of (Nb,Ta,Ti)₃Sn Multifilamentary Wires Using Osprey Bronze
IEEE Trans. Appl. Superconductivity, Vol. **15**, 3482-3485 (2005)
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To be published in Adv. Cryo. Engineering
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Supercond. Sci. Technol. **18**, S338-S343 (2005)
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A novel piezoelectric interdigital transducer for the excitation of high frequency surface acoustic waves
IEEE Ultrasonics Symposium, **441** (2004)
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J. DURON, L. ANTOGNAZZA, M. DECROUX, F. GRILLI, S. STAVREV, B. DUTOIT, Ø. FISCHER
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IEEE Transactions on Applied Superconductivity **15** (2) (2005)
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 (project # 6, group Fischer)

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Supercond. Sci. Technol., **18**, S416-423 (2005)
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Physica C, in press (2006)
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Texture gradients in Fe-sheathed ex situ MgB₂ tapes

Accepted for publication by *Supercond. Sci. Technology*
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IEEE Transactions on Applied Superconductivity, vol. **15**, 3196-3199 (2005)
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Influence of Mo in the Ni Sublayers on the Magnetization of Ni/Ti Neutron Supermirrors
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Magnetic depth profiling of FM/AF/FM trilayers by PNR
Physica B **356**, 46-50 (2005)
(project # 6, group Mesot)

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Critical Current vs. Strain Measurement up to 21 T and 1'000 A of Long Length Superconducting Wires and Tapes
Rev. Sci. Instrum., **76**, 93901-93909(2005)
(project # 6, group Flükiger)

C. SENATORE, N. CLAYTON, P. LEZZA, S. PACE R. FLÜKIGER
Third Harmonic Susceptibility and Pinning Properties of Fe/MgB_2 Tapes
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(project # 6, group Flükiger)

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Adv. Cryo. Engineering (in press)

(project # 6, group Flükiger)

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Comparison of the AC losses of BSCCO and YBCO conductors by means of numerical analysis
Superconductor Science and Technology **18**, 1300-1312 (2005)
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Improvement of the critical current density of Bi-2223 tapes by introducing Ag Layers inside individual filaments
Supercond. Sci. Technol. **18**, 830-834 (2005)
(project # 6, group Flükiger)

H. L. SUO, M. SCHINDL, N. CLAYTON, N. MUSOLINO, R. FLÜKIGER
Spray pyrolysis of $YBa_2Cu_3O_{7-x}$ Coated Conductors on (100) $SrTiO_3$ Substrate.
IEEE Trans. Appl. Superconductivity, Vol. **15**, 2755-2758 (2005)
(project # 6, group Flükiger)

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Critical current vs. Strain for LTS wires up to 21T
IEEE Trans. Appl. Superconductivity, vol. **15**, 3652-3655 (2005)
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Strain and Field Scaling for Internal Sn and Bronze Route Nb_3Sn Wires up to 21 T.
Adv. Cryo. Engineering (in press)
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Supercond. Sci. Technol., **19**, 263-266 (2006)
(project # 6, group Flükiger)

8.5.2 Scientific articles in journals without peer review

Project 1

M. BÜTTIKER, P. SAMUELSSON, E. V. SUKHORUKOV
Quantum Shot Noise: From Schottky to Bell
AIP Conf. Proc. **780**, 403 (2005)
 (project # 1, group Büttiker)

M. BÜTTIKER, P. SAMUELSSON, E. V. SUKHORUKOV
Orbital entanglement and violation of Bell inequalities in mesoscopic conductors, in 'Realizing Controllable Quantum States'
Proceedings of the International Symposium on Mesoscopic Superconductivity and Spintronics-In the Light of Quantum Computation (MS+S2004), edited by Hideaki Takayanagi and Junsaku Nitta, p. 3–8 (World Scientific Publishing, 2005)
 (project # 1, group Büttiker)

H. G. KATZGRABER, A. ESPOSITO, M. TROYER
Ramping fermions in optical lattices across a Feshbach resonance,
cond-mat/0510194
 (project # 1, group Blatter)

G.B. LESOVIK, F. HASSLER, G. BLATTER
Using Qubits for Measuring Fidelity in Mesoscopic Systems
cond-mat/0507200
 (project # 1, group Blatter)

P. WERNER, M. TROYER
Cluster Monte Carlo Algorithms for Dissipative Quantum Systems
Prog. Theor. Phys. Suppl. (in print)
 (project # 1, group Troyer)

Project 2

A. DE COL, V.B. GESHKENBEIN, G.I. MENON, G. BLATTER
Surface melting of the vortex lattice
cond-mat/0511046

(project # 2, group Blatter)

R. KHASANOV, C. BAINES, F. LA MATTINA, A. MAISURADZE, K. TOGANO, H. KELLER
Muon-spin-rotation measurements of the penetration depth in $\text{Li}_2\text{Pd}_3\text{B}$
cond-mat/0601156 (2006)
 (project # 2, group Keller)

L. KRUSIN-ELBAUM, T. SHIBAUCHI, G. BLATTER
Separated spin and charge degrees of freedom in high- T_c superconductors
Int. J. Mod. Phys. B **19**, 193-197 (2005)
 (project # 2, group Blatter)

T. SCHNEIDER, R. KHASANOV, D. DI CASTRO, H. KELLER, MUN-SEOG KIM, C. U. JUNG, SUNG-IK LEE
Evidence for a smooth superconductor to normal state transition for nonzero applied magnetic field in $\text{Sr}_{0.9}\text{La}_{0.1}\text{CuO}_2$
cond-mat/0503428 (2005)
 (project # 2, group Keller)

T. SCHNEIDER, R. KHASANOV, J. KARPINSKI, S. M. KAZAKOV, H. KELLER
Evidence for a smooth superconductor to normal state transition for nonzero applied magnetic field in RbOs_2O_6
cond-mat/0502232 (2005)
 (project # 2, group Keller)

Project 3

D. CLOETTA, D. ARIOSA, M. ABRECHT, C. CANCELLIERI, S. MITROVIC, M. PAPANNO, D. PAVUNA
Systematic Studies of $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$ in Direct Synchrotron Light: On the Role of Compressive against Tensile Strain
 p. 10 in "Correlated Electron Materials: Physics and Nanoengineering", SPIE vol. **5932** (eds: I. Bozovic, D. Pavuna) Bellingham, USA (2005)
 (project # 3, group Margaritondo)

8.5.3 Scientific articles in anthologies

F.F. ASSAAD, M. TROYER
Quantum Monte Carlo Methods
 to be published in *Handbook of Magnetic Materials* (Wiley)
 (project # 1, group Troyer)

L. DEGIORGI
Optical and Infrared Properties of semiconductors
Encyclopedia of Condensed Matter Physics
 Volume 5, pages 334-340 (Oxford, 2005, Elsevier),
 editors F. Bassani, G. L. Liedl and P. Wyder

(project # 1, group Degiorgi)

K. WAKABAYASHI
Electronic and Magnetic Properties of Nanographite
 "Carbon-based Magnetism -An overview of the magnetism of metal free carbon-based compounds and materials", Edited by F. Palacio, T. Makarova, Elsevier (2006), to be published
http://www.elsevier.com/wps/find/bookdescription.cws_home/707085/description
 (project # 1, group Sigrist)

M. SIGRIST
*Introduction to Unconventional
Superconductivity*

A. Avella and F. Mancini, *Lectures on the Physics of
Highly Correlated Electron Systems IX*, AIP
Conference Proceedings 789, New York 2005
(project # 2, group Sigrist)

8.5.4 Books

A. FURRER
*Neutron Scattering Investigations of Charge
Inhomogeneities and the Pseudogap State in
High-Temperature Superconductors*
Struct. Bond. **114**, 171-204, (2005)
(project # 1, group Mesot)

*Edited by F. Hippert, E. Geissler, J.-L. Hodeau, E.
Lelièvre-Berna and J.-R. Regnard (Springer,
Grenoble Sciences)(2005)*
(project # 1 & 2, group Grioni)

M. GRIONI
*"Photoemission Spectroscopy", in Neutron and
X-ray Spectroscopy*

I. BOZOVIC, D. PAVUNA, *editors*
*Correlated Electron Materials : Physics and
Nanoengineering*
SPIE vol. 5932 *SPIE*, Bellingham, USA (2005)
(project # 3, group Margaritondo)

8.5.5 Reports

SINQ Experimental Reports,
http://sing.web.psi.ch/sing/exp_reports.html
(numerous reports on neutron scattering
experiments related to the NCCR project MaNEP)
(project # 1, group Mesot)