

MaNEP – Year 2 (2002-2003): Publications

- 1 Scientific articles in journals with peer review
- 2 Scientific articles in journals without peer review
- 3 Books and scientific articles in anthologies
- 4 Reports
- 5 Other (newspapers, magazines, web, etc.)

The most important publications are outlined by an asterisk in front of the first author.

1 Scientific articles in journals with peer review

V. ABÄCHERLI, D. UGLIETTI, B. SEEBER, R. FLÜKIGER

(Nb,Ta,Ti)₃Sn multifilamentary wires using Osprey bronze with high tin content and NbTa/NbTi composite filaments

Physica C **372-376** (2002) 1325-1328

Project # 3, Flükiger

M. ABRECHT, D. ARIOSIA, M. ONELLION, G. MARGARITONDO, D. PAVUNA

Structural phase transition in early growth of BSCCO-2212 films on STO substrates

J. of Appl Phys. **91** (2002) 1187- 1189

Project # 12, Margaritondo

N. ANDRENACCI, H. BECK

The internal structure of preformed pairs in underdoped high temperature superconductors

to be submitted to Phys. Rev. B

Project # 10, Martinoli

* V.I. ANISIMOV, R. HLUBINA, M.A. KOROTIN, V.V. MAZURENKO, T.M. RICE, A.O. SHORIKOV, M. SIGRIST

First-order transition between a small gap semiconductor and a ferromagnetic metal in the Isoelectronic alloy FeSi_{1-x}Ge_x

Phys. Rev. Lett. **89** (2002) 257203 (4 pages)

Project # 9, Rice

L. ANTOGNAZZA, M. DECROUX, S. REYMOND, E. DE CHAMBRIER, W. PAUL, M. CHEN, Ø. FISCHER

Simulation of the behavior of superconducting YBCO lines at high current densities

Physica C **372-376** (2002) 1684-1687

Project # 2, Fischer

N. BARISIC, L. FORRO, D. MANDRUS, R. JIN, J. HE, P. FAZEKAS

The electrical properties of Cd₂Re₂O₇ under pressure

submitted

Project # 11, Forró

* F. BECCA, F. MILA

Peierls-like transition induced by frustration in a two-dimensional antiferromagnet

Phys. Rev. Lett. **89** (2002) 037204 (4 pages)

Project # 9, Rice

* F. BECCA, F. MILA, D. POILBLANC

Tetramerization of a frustrated spin-1/2 chain

Submitted to Phys. Rev. Lett.

Project # 9, Rice

H. BECK, PH. CURTY, A. SEWER, N.

ANDRENACCI, S. SHARAPOV

Pairing fluctuations in high temperature superconductors

Ukrainean Journal of Physics, to appear

Project # 10, Martinoli

L. BENFATTO, C. MORAIS SMITH

Signature of stripe pinning in optical conductivity

Submitted to Phys. Rev. Lett., (cond-mat/0303036)

Project # 9, Rice

L. BENFATTO, A. TOSCHI, S. CAPRARA and C. CASTELLANI

Phase-fluctuation contribution to the depletion of the superfluid stiffness in continuum and lattice models for s- and d-wave superconductors

Submitted to Phys. Rev. B, (cond-mat/0302255)

Project # 9, Rice

H. BERGER, S. F. LEE, S. H. HUANG, H. W. CHANG, T. M. CHUANG, Y. LIOU, Y. D. YAO, Y. HWU, D. ARIOSIA, R. GAAL, A. SALEH, G. MARGARITONDO, L. V. GASPAREV, D. B. TANNER

Coexistence of ferromagnetism and high-temperature superconductivity in Dy-doped BiPbSrCaCuO

Surf. Rev. Lett. **9** (2002) 1109

Project # 12, Margaritondo

S.V. BORISENKO, A.A. KORDYUK, T.K. KIM, S. LEGNER, K.A. NENKOV, M. KNUPFER, M.S. GOLDEN, J. FINK, H. BERGER, R. FOLLATH

Superconducting gap in the presence of bilayer splitting in underdoped (Pb,Bi)₂Sr₂CaCu₂O_{8+δ}

Phys. Rev. B **66** (2002) 140509

Project # 12, Margaritondo

* F. BOUQUET, Y. WANG, I. SHEIKIN, T. PLACKOWSKI, A. JUNOD, S. LEE, S. TAJIMA

Specific heat of single crystal MgB₂: A two-band superconductor with two different anisotropies

Phys. Rev. Lett. **89** (2002) 257001 (4 pages)

Project # 4, Junod

* F. BOUQUET, Y. WANG, I. SHEIKIN, P. TOULEMONDE, M. EISTERER, H.W. WEBER, S. LEE, S. TAJIMA, A. JUNOD

Unusual effects of anisotropy on the specific heat of ceramic and single crystal MgB₂

Physica C **385** (2003) 192-204

Project # 4, Junod

M. BOVET, S. VAN SMAALEN, H. BERGER, R. GAAL, L. FORRO, L. SCHLAPBACH, P. AEBI

Interplane coupling in the quasi-two-dimensional 1T-TaS₂

Phys. Rev. B **67** (2003) 125105 (4 pages)

Projects # 11, Forró / # 14 Aebi / # 15 Schlapbach

S. BRODERICK, L. DEGIORGI, H.R. OTT, J.L. SARRAO, Z. FISK

Giant magneto-optical response of ferromagnetic EuB₆

Eur. Phys. J. B **27** (2002) (6 pages)

Project # 8, Ott

L.N. BULAEVSKII, CH. HELM, A.R. BISHOP, M.P. MALEY

Optical properties of crystals with spatial dispersion: Josephson plasma resonance in layered superconductors

Europhys. Lett. **58** (2002) 415-421

Project # 6, Blatter

L.N. BULAEVSKII, CH. HELM

Field dependence of the Josephson plasma resonance in layered superconductors with alternating junctions

Phys. Rev. B **66** (2002) 174505 (5 pages)

Project # 6, Blatter

M. BUTTIKER, P. SAMUELSSON

Hanbury Brown-Twiss effects in channel mixing normal-superconducting systems

Proceedings of the XXIII Conference on Low Temperature Physics, Hiroshima, Japan, Aug. 20 - 27, 2002. Physica E (unpublished)

Project # 1, Büttiker

* D. CHARALAMBOUS, P. G. KEALEY, E. M. FORGAN, T. M. RISEMAN, M. W. LONG, C. GOUPIL, R. KHASANOV, D. FORT, P. J. C. KING, S. L. LEE, F. OGRIN

Vortex motion in type-II superconductors probed by muon spin rotation and small-angle neutron scattering

Phys. Rev. B **66** (2002) 054506 (4 pages)

Project # 13, Keller

N.M. CHTELKATCHEV, G. BLATTER, G.B. LESOVIK, T. MARTIN

Bell inequalities and entanglement in solid state devices

Phys. Rev. B **66** (2002) 161320 (4 pages)

Project # 6, Blatter

M. COSTA, E. MARTÍNEZ, C. BEDUZ, Y. YANG, F. GRILLI, B. DUTOIT, E. VINOT, P. TIXADOR

3D modelling of coupling between superconducting filaments via resistive matrix in AC magnetic field

IEEE Trans. Appl. Supercond. (2003) to appear

Project # 3, Flükiger

R. CUBITT, M. R. ESKILDSEN, C. D. DEWHURST, J. JUN, S. M. KAZAKOV, J. KARPINSKI

Effects of Two-Band Superconductivity on the Flux Line Lattice in Magnesium Diboride

Submitted to Phys. Rev. Lett.

Projects # 2, Fischer / # 8, Ott

PH. CURTY, H. BECK

Anomalous behaviour of high temperature superconductors arising from amplitude fluctuations

to be submitted to Phys. Rev. B

Project # 10, Martinoli

C. DALLERA, M. GRIONI, A. SHUKLA, G. VANKO, J. SARRAO, J.P. RUEFF, D.L. COX

New spectroscopy solves an old puzzle: the Kondo scale in heavy fermions

Phys. Rev. Lett. **88** (2002) 196403 (4 pages)

Project # 12, Margaritondo

C. DALLERA, M. GRIONI, A. SHUKLA, G. VANKO, J. SARRAO

Truly bulk-sensitive spectroscopic measurements of valence in heavy fermion materials

J. Synchrotron Rad. **9** (2002) 242-245

Project # 12, Margaritondo

C. DALLERA, M. GRIONI

Resonant scattering of x-rays as a probe of valence and hybridization in solids

Structural Chemistry **14** (2002) 57-67

Project # 12, Margaritondo

A. DE COL, T. B. LIVERPOOL

Statistical mechanics of double helical polymers

Submitted to Phys. Rev. E

Project # 6, Blatter

DE COL, G. BLATTER

Surface and screening effects in weakly coupled layered superconductors

in preparation

Project # 6, Blatter

M. DECROUX, L. ANTOGNAZZA, S. REYMOND, W. PAUL, M. CHEN, Ø. FISCHER

Studies of YBCO strip lines under voltage pulses: optimisation of the design of fault current limiters

Accepted for publication in IEEE Trans. On Applied Superconductivity, to appear

Project # 2, Fischer

L. DEGIORGI, S. BRODERICK, H.R. OTT, J.L. SARRAO, Z. FISK

The ferromagnetic phase transition in EuB₆: optical evidence for quasiparticle undressing

Physica B **312** (2002) 327-328

Project # 8, Ott

J. DEMSAR, L. FORRÓ, H. BERGER, D. MIHAJLOVIC

Femtosecond "snapshots" of gap-forming charge-density-wave correlations in quasi-two-dimensional dichalcogenides 1T-TaS₂ and 2H-TaSe₂

Phys. Rev. B **66** (2002) 041101

Projects # 11, Forró / # 12, Margaritondo

M.J.W. DODGSON

Phase transitions in isolated vortex chains

Phys. Rev. B **66** (2002) 014509 (9 pages)

Project # 10, Martinoli

S. DOMMANGE, M. MAMBRINI, B. NORMAND, F. MILA

Static impurities in the Kagome lattice: dimer freezing and mutual repulsion

Submitted to Eur. Phys. J. B

Project # 9, Rice

T. DROESE, R. BESSELING, P. KES, C. MORAIS SMITH

Plastic depinning in artificial vortex channels: competition between bulk and boundary nucleation

Phys. Rev. B **67** (2003) 064508

Project # 9, Rice

* M. R. ESKILDSEN, M. KUGLER, S. TANAKA, J. JUN, S. M. KAZAKOV, J. KARPINSKI, Ø. FISCHER
Vortex Imaging in the π -Band of Magnesium Diboride

Phys. Rev. Lett. **89**, (2002) 187003 (4pages)

Projects # 2, Fischer / # 8, Ott

M. R. ESKILDSEN, M. KUGLER, G. LEVY, S. TANAKA, J. JUN, S. M. KAZAKOV, J. KARPINSKI, Ø. FISCHER

Scanning Tunneling Spectroscopy on Single Crystal MgB₂

Physica C **385**, (2003) 169-176

Projects # 2, Fischer / # 8, Ott

M. R. ESKILDSEN, C. D. DEWHURST, B. W. HOOGENBOOM, C. PETROVIC AND P. C. CANFIELD

Hexagonal and Square Flux Line Lattices in CeCoIn₅

Submitted to Phys. Rev. Lett. (cond-mat/0211585)

Projects # 2, Fischer / # 8, Ott

R. FASEL, P. AEBI

X-ray photoelectron diffraction: probing atom positions and molecular orientation at surfaces

Chimia, **56** (2002) 566-572

Project # 14, Aebi

P. FAZEKAS, K. PENC, H. BERGER, L. FORRÓ, S. CSONKA, I. KEZSMARKI, G. MIHALI

BaVS₃: from spin gap insulator to non-Fermi-liquid

Physica B **312** (2002) 694

Project # 12, Margaritondo / Project # 11, Forró

Z. FISK, H.R. OTT, V. BARZYKIN, L.P. GOR'KOV
The emerging picture of ferromagnetism in the divalent hexaborides

Physica B **312** (2002) 808-810

Project # 8, Ott

R. FLÜKIGER, P. LEZZA, C. BENEDEUCE, N. MUSOLINO, H.L. SUO

Improved transport critical current and irreversibility fields in mono- and multifilamentary Fe/MgB₂ tapes and wires using fine powders

Supercond. Sci. Technol. **16** (2003) 264-270

Project # 3, Flükiger

R. FLÜKIGER, H.L. SUO, N. MUSOLINO, C. BENEDEUCE, P. TOULEMONDE, P. LEZZA
Superconducting properties of MgB₂ tapes and wires

Physica C **385** (2003) 286-305

Project # 3, Flükiger

P.A. FRIGERI, C. HONERKAMP, T.M. RICE
Landau-Fermi liquid analysis of the 2D t-t' Hubbard model

Eur. Phys. J. B **28** (2002) 61-70

Project # 9, Rice

* A. FURRER, D. RUBIO TEMPRANO, J. MESOT, K. CONDER, K.A. MÜLLER

On the Pseudogap State in Y- and La-Type High-Temperature Superconductors: Doping Dependence, Isotope Effects, and Electronic Properties Studied by Neutron Spectroscopy

J. Supercond. **15** (2002) 361-365

Project # 16, Furrer

R. GAAL, G. MIHALY, H. BERGER, F. RULLIER-ALBENQUE, L. FORRÓ

Tunneling spectroscopy of Bi₂Sr₂CaCu₂O₇ High Tc superconductor with disorder

submitted

Project # 11, Forró

* S. GARIGLIO, C.H. AHN, D. MATTHEY, J.-M. TRISONE

Electrostatic tuning of the hole density in NdBa₂Cu₃O_{7- δ} films and its effect on the Hall response

Phys. Rev. Lett. **88** (2002) 67002 (4 pages)

Project # 5, Triscone

L. V. GASPAROV, K. G. BROWN, A. C. WINT, D. B. TANNER, H. BERGER, G. MARGARITONDO, R. GAAL, L. FORRÓ

Phonon anomaly at the charge ordering transition in 1T-TaS₂

Phys. Rev. B **66** (2002) 094301

Project # 12, Margaritondo / Project # 11, Forró

J.L. GAVILANO, D. RAU, S. MUSHKOLAJ, H.R. OTT, P. MILLET, F. MILA

DC-susceptibility and NMR response of a low-dimensional quantum magnet: Na₂V₃O₇

Physica B **312** (2002) 622-623

Project # 8, Ott / Project # 9, Rice

J.L. GAVILANO, S. MUSHKOLAJ, D. RAU, H.R. OTT, A. BIANCHI, D.P. YOUNG, Z. FISK
¹¹B-NMR in CaB₆
Physica B **312** (2002) 813-814
Project # 8, Ott

J.L. GAVILANO, D. RAU, S. MUSHKOLAJ, H.R. OTT, P. MILLET, F. MILA
A low-dimensional spin S=1/2 system at the quantum critical limit: Na₂V₃O₇
Submitted to Phys. Rev. Lett.
Project # 9, Rice / Project # 8, Ott

T.J. GELDBACH, C. J DEN REIJER, M. WÖRLE, P. PREGOSIN
Protonation and NMR studies on C-13-acetate enriched Ru (OAc)₂ (Binap) Acetate as a source of water in P-C bond splitting
Inorg. Chim. Acta, **330** (2002) 155-160
Project # 7, Nesper

T. GIAMARCHI, E. ORIGNAC, D. POILBLANC
Les échelles quantiques
Pour la science, **305** (2003) 58 – 65
Project # 18, Giamarchi

E. GIANNINI, I. SAVYSYUK, V. GARNIER, R. PASSERINI, P. TOULEMONDE, R. FLÜKIGER
Reversible melting and equilibrium phase formation of (Bi,Pb)₂Sr₂Ca₂Cu₃O_{10+δ}
Supercond. Sci. Technol. **15** (2002) 1577-1586
Project # 3, Flükiger

E. GIANNINI, R. PASSERINI, P. TOULEMONDE, E. WALKER, M. LOMELLO-TAFIN, D. HEPTYAKOV, R. FLÜKIGER
Bi,Pb(2223) equilibrium and decomposition: in situ high-temperature neutron diffraction study
Physica C **372-376** (2002) 895-898
Project # 3, Flükiger

* R. GILARDI, J. MESOT, A. DREW, U. DIVAKAR, S.L. LEE, E.M. FORGAN, O. ZAHARKO, K. CONDER, V.K. ASWAL, C.D. DEWHURST, R. CUBITT, N. MOMONO, M. ODA
Direct Evidence for an Intrinsic Square Vortex Lattice in the Overdoped High-T_c Superconductor La_{1.83}Sr_{0.17}CuO_{4+δ}
Phys. Rev. Lett. **88** (2002) 217003 (4 pages)
Project # 16, Furrer

* R. GILARDI, J. STAHN, F. ALTORFER, N. MOMONO, M. ODA, J. MESOT
Doping dependence of the tetragonal-orthorhombic phase transition in the superconducting compound La_{2-x}Sr_xCuO_{4±d}
Appl. Phys. A **74** (2002) S1624-S1626
Project # 16, Furrer

T.A. GLOOR, F. MILA
Correlation gap in armchair carbon nanotubes
Europhys. Lett., in press
Project # 9, Rice

M.O. GOERBIG, C. MORAIS SMITH
Scaling approach to the phase diagram of quantum Hall systems
Submitted to Phys. Rev. Lett. (cond-mat/0301329)
Project # 9, Rice

M.O. GOERBIG, C. MORAIS SMITH
Magneto roton instabilities and static susceptibilities in higher Landau levels
Phys. Rev. B **66** (2002) 241101
Project # 9, Rice

D.A. GOROKHOV, D.S. FISHER, G. BLATTER
Quantum collective creep: A quasiclassical Langevin equation approach
Phys. Rev. B **66** (2002) 214203 (23 pages)
Project # 6, Blatter

J. GORYO, M. SIGRIST
Feedback effect in p-wave pairing state
J. Phys. Chem. Solids **63** (2002), 1537-1540
Project # 9, Rice

B. GRÉVIN, I. MAGGIO-APRILE, A. BENTZEN, O. KUFFER, I. JOUMARD, Ø. FISCHER
Scanning tunneling potentiometry search for mesoscopic phase separation in La_{0.7}Sr_{0.3}MnO₃
Appl. Phys. Lett. **80**, (2002) 3979 - 3981
Project # 2, Fischer

F. GRILLI, S. STAVREV, B. DUTOIT, Y. LE FLOCH, E. VINOT, G. MEUNIER, I. KLUTSCH, P. TIXADOR
Finite element method modelling of superconductors: from 2D to 3D
submitted to IEEE Trans. Magn.
Project # 3, Flükiger

M. GRIONI, L. PERFETTI, H. BERGER, J. VOIT, H. HOECHST
Evidence for strong correlations in a 1D Peierls system
Physica B **312-313** (2002) 559-561
Project # 12, Margaritondo

V. GRITSEV, B. NORMAND, D. BAERISWYL
Phase diagram of the generalized spin ladder with ring exchange
Submitted to Eur. Phys. J. B
Project # 9, Rice

O. GRÖNING, R. CLERGERAUX, L. NILSSON, P. RUFFIEUX, P. GRÖNING, L. SCHLAPBACH
Prospects and limitations of carbon nanotube field emission electron sources
Chimia **56** (2002) 553-561
Project # 15, Schlapbach

* N. HASSELMANN, A.H. CASTRO-NETO, C. MORAIS SMITH
Charge density wave formation in the low-temperature tetragonal phase of cuprates
Phys. Rev. B **65** (2002), 220511
Project # 9, Rice

J. HAYOZ, C. KOITZSCH, M. BOVET, D. NAUMOVIC, L. SCHLAPBACH, P. AEBI
Electronic Structure of the YH_3 Phase from Angle-Resolved Photoemission Spectroscopy
Submitted to Phys. Rev. Lett.
Project # 14, Aebi / Project # 15, Schlapbach

K. HEGETSCHWEILER, R. C. FINN, R.S. RARIG, J. SANDER, S. STEINHAUSER, M. WÖRLE, R. ZUBIETA
1,3,5-triamono-1,3,5-trideoxy-cis-inositol, a ligand with a remarkable versatility for metal ions
Inorg. Chim. Acta, **337** (2002) 39
Project # 7, Nesper

CH. HELM, L.N. BULAEVSKII, E.M. CHUDNOVSKY, M.P. MALEY
Reflectivity and Microwave Absorption in Crystals with Alternating Intrinsic Josephson Junctions
Phys. Rev. Lett. **89** (2002) 057003 (4 pages)
Project # 6, Blatter

CH. HELM, L.N. BULAEVSKII
Optical properties of layered superconductors near the Josephson plasma resonance
Phys. Rev. B **66** (2002) 094514 (23 pages)
Project # 6, Blatter

Y. HIRAI, I. ZIVKOVIC, B.H. FRAZER, A. REGINELLI, L. PERFETTI, D. ARIOSA, G. MARGARITONDO, M. PRESTER, D. DROBAC, D.T. JIANG, Y. HU, T.K. SHAM, I. FELNER, M. PEDERSON, M. ONELLION
Magnetic interactions and electronic states in superconducting and nonsuperconducting ruthenocuprates
Phys. Rev. B **65** (2002) 054417 (6 pages)
Project # 12, Margaritondo

A. HONECKER, F. MEIER, D. LOSS, B. NORMAND
Spin dynamics and coherent tunnelling in the molecular magnetic rings Fe_6 and Fe_8
Eur. Phys. J B **27** (2002) 487
Project # 9, Rice

C. HONERKAMP, M. SALMHOFER, T.M. RICE
Flow to strong coupling in the two-dimensional Hubbard model
Eur. Phys. J. B **27** (2002) 127-134
Project # 9, Rice

B. W. HOOGENBOOM, C. BERTHOD, M. PETER, Ø. FISCHER, A. A. KORDYUK
Modeling scanning tunneling spectra of $Bi_2Sr_2CaCu_2O_{8+d}$
cond-mat/0212329
Project # 2, Fischer

D.A. IVANOV, L.B. IOFFE, V.B. GESHKENBEIN, G. BLATTER
Interference effects in isolated Josephson junction arrays with geometric symmetries
Phys. Rev. B **65** (2002) 024509 (8 pages)
Project # 6, Blatter

D.A. IVANOV, R. VON ROTEN, G. BLATTER
Minigap in a long disordered SNS junction: analytical results
Phys. Rev. B **66** (2002) 052507 (4 pages)
Project # 6, Blatter

A. JUNOD, Y. WANG, F. BOUQUET, I. SHEIKIN, P. TOULEMONDE, M. R. ESKILDSEN, M. EISTERER, H. W. WEBER, S. LEE, S. TAJIMA
Specific heat of ceramic and single crystal MgB_2
Physica C. to appear
Project # 2, Fischer / Project # 4, Junod

KAELIN, CH. HELM, G. BLATTER
Optical Resonances in Reflectivity near Crystal Modes with Spatial Dispersion
Submitted to Phys. Rev. B
Project # 6, Blatter

J. KARPINSKI, M. ANGST, J. JUN, S. M. KAZAKOV, R. PUZNIAK, A. WISNIEWSKI, J. ROOS, H. KELLER, A. PERUCCHI, L. DEGIORGI, M. R. ESKILDSEN, P. BORDET, L. VINNIKOV, A. MIRONOV
 MgB_2 single crystals: high pressure growth and physical properties
Supercond. Sci. Technol. **16**, (2003) 221-230
(Proceedings of BOROMAG: Superconductivity in Magnesium Diboride and Related Materials, Genova, 17-19 June (2002))
Project # 2, Fischer / Project # 13 Keller

* H. KELLER
Unconventional isotope effects in cuprate high-temperature superconductors
Physica B **326** (2003) 283-288
Project # 13, Keller

* R. KHASANOV, A. SHENGELAYA, K. CONDER, E. MORENZONI, I.M. SAVIC, H. KELLER
The oxygen-isotope effect on the in-plane penetration depth in underdoped $Y_{1-x}Pr_xBa_2Cu_3O_{7-\delta}$ as revealed by muon-spin rotation
Journal of Physics: Condensed Matter, **15** (2003) L17-L23
Project # 13, Keller

* K. KODAMA, M. TAKIGAWA, M. HORVATIC, C. BERTHIER, H. KAGEYAMA, Y. UEDA, S. MIYAHARA, F. BECCA, F. MILA
Magnetic superstructure in the two-dimensional quantum antiferromagnet $SrCu_2(BO_3)_2$
Science **298** (2002) 395-399
Project # 9, Rice

A. A. KORDYUK, S. V. BORISENKO, T. K. KIM, K. A. NENKOV, M. KNUPFER, J. FINK, M. S. GOLDEN, H. BERGER, R. FOLLATH
Origin of the peak-dip-hump line shape in the superconducting-state photoemission spectra of $Bi_2Sr_2CaCu_2O_{8+x}$
Phys. Rev. Lett. **89** (2002) 077003
Project # 12, Margaritondo

A.A. KORDYUK, S. V. BORISENKO, M. S. GOLDEN, S. LEGNER, K. A. NENKOV, M. KNUPFER, J. FINK, H. BERGER, L. FORRÓ, R. FOLLATH

Doping dependence of the Fermi surface in $(\text{Pb,Bi})_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+\delta}$

Phys. Rev. B **66** (2002) 014502

Project # 11, Forró / Project # 12, Margaritondo

S.E. KORSHUNOV

Fluctuation-dissipation theorem and flux noise in overdamped Josephson- junction arrays

Phys. Rev. B **66** (2002) 104513 (8 pages)

Project # 10, Martinoli

S.E. KORSHUNOV

Kinks pairs unbinding on domain walls and the sequence of phase transitions in fully frustrated XY models

Phys. Rev. Lett. **88** (2002) 167007 (4 pages)

Project # 10, Martinoli

C. KUNTSCHER, S. SCHUPPLER, P. HAAS, B. GORSHUNOV, M. DRESSEL, M. GRIONI, F. LICHTENBERG, A. HERRNBERGER, F. MAYR, J. MANNHART

Extremely small energy gap in the quasi-one-dimensional conducting chain compound $\text{SrNbO}_{3.41}$

Phys. Rev. Lett. **89** (2002) 236403 (4 pages)

Project # 12, Margaritondo

H. KUSUNOSE, M. SIGRIST

The penetration depth in Sr_2RuO_4 : Evidence for orbital-dependent superconductivity

Europhys. Lett. **60** (2002) 281-287

Project # 9, Rice

H. KUSUNOSE, T.M. RICE, M. SIGRIST

Electronic thermal conductivity of multigap superconductors: Application to MgB_2

Phys. Rev. B **66** (2002) 214503 (5 pages)

Project # 9, Rice

I.L. LANDAU, H.R. OTT

Temperature dependence of the upper critical field of type-II superconductors from isothermal magnetization data: Application to high-temperature superconductors

Phys. Rev. B **66** (2002) 144506 (8 pages)

Project # 8, Ott

I.L. LANDAU, H.R. OTT

Model of the mixed state of type-II superconductors in high magnetic fields

Journal of Physics-Condensed Matter **14**, (2002) L313-L318

Project # 8, Ott

* A.LAUCHLI, D. POILBLANC, T.M. RICE, S.R. WHITE

Li-induced spin and charge excitations in a spin ladder

Phys. Rev. Lett. **88** (2002) 257201 (4 pages)

Project # 9, Rice

* F. LE MARREC, A. DEMUER, D. JACCARD, M.K. LEE, C.B. EOM, J.-M. TRISCONÉ

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Project # 3, Flükiger

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Project # 3, Flükiger

5th Frame Program: 30 months report, GROWTH

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Project # 3, Flükiger

See also section 7.5.2 Articles in public media.

Appendix – Public relations

A-1 Public Events

A-2 Articles in public media (press and www)

A-3 Posters

A-4 Books

A-5 CD-ROMs

A-6 Radio Programs

A-7 Movies

A-1 Public events: MaNEP inauguration, open house days, visits

MaNEP Management and DPMC, Univ. of Geneva:

Inauguration ceremony MaNEP: University of Geneva, September 10, 2002.

Open house MaNEP: *La magie des matériaux de demain*, DPMC, University of Geneva, September 12-14 and October 9-10, 2002.

Project # 6, project leader J. W. Blatter:

Open house ETH Zurich: *Quantum Computing*, Institute of Physics, ETH Zurich, June 15, 2002.

Project # 9, project leader T. M. Rice:

Open house ETH Zurich: *Theoretical physics*, Institute of theoretical physics, June 15, 2002.

Project # 16, project leader A. Furrer:

Open house ETH Zurich: Physics Department, ETH Zurich, June 15, 2002.

Open house PSI: PSI Villigen, October 20, 2002.

Organized laboratory visits of 13 guest groups.

A-2 Articles in public media

Press:

MaNEP Management:

Visite dans les coulisses de la physique du futur, Anne-Marie Cruz, **Le Courrier**, September 10, 2002.

La magie des matériaux de demain, MaNEP open house advertisement, **Tribune de Genève**, September 10-13, 2002.

Dominique Ziegler joue au savant fou, Robert Habel, **Dimanche.ch**, September 15, 2002.

Nouveaux matériaux: petits, rapides, étranges, Anton Voss, **Campus**, Nr 60, Magazine de l'Université de Genève, October - November 2002.

L'immensité minuscule, Pierre-Yves Frei, **L'Hebdo**, November 14, 2002.

Un catalyseur à collaborations, O. Kuffer and M. Kugler, **SNFInfo**, Nr 1, March 2003.

Project # 15, project leader L. Schlapbach:

Neue Generation von Leiterplatten, feinere Leiterbahnen dank Laserstrukturierung, P. Gröning and D. Meier, **Neue Zürcher Zeitung**, November 13, 2002

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Project # 16, project leader A. Furrer:

Aspects of Quantum Coherence in Magnetic Clusters, Nordan Cavadini, **Il Volterriano**, Nr. 9 (Mendrisio), Autumn 2002.

Project # 18, project leader T. Giamarchi:

Les échelles quantiques, T. Giamarchi, E. Orignac, D. Poilblanc, **Pour la Science**, March 2003.

World wide web:

MaNEP Management:

Les nouveaux matériaux préparent le terrain pour la physique du XXIème siècle, MaNEP inauguration and open house, University of Geneva press release <http://www.unige.ch/presse> and event announcement on the University's home page, <http://www.unige.ch>, September 2002.

La magie des matériaux de demain, MaNEP open house, home page **Passerelle Science-Cité**, <http://www.unige.ch/science-cite>, September 2002.

Geneva University heads new pan-Swiss MaNEP initiative, home page **Why Geneva ?**, <http://geneva.ch/manep.htm>, September 12, 2002.

Actualités scientifiques: le pôle de MaNEP, Electronic Bulletin of **French Embassy** in Switzerland, <http://www.be.adit.fr/suisse/index.htm>, November 5, 2002.

A-3 Posters

MaNEP Management:

La magie des matériaux de demain, advertisement flyer and poster for MaNEP open house, September 2002.

La magie des matériaux de demain, MaNEP open house, 14 posters describing the demonstrations and lab-tour (by the staff of the DPMC), September 2002.

MaNEP: a scientific network, MaNEP inauguration and open house, 23 posters presenting MaNEP's research projects (by all MaNEP project leaders), September 2002.

A-4 Books

MaNEP Management:

MaNEP Facilities, editor MaNEP, 110 pages, April 2003.

A-5 CD-ROMs

MaNEP Management:

La magie des matériaux de demain, description of the scientific demonstrations presented at MaNEP open house, October 2002.

A-6 Radio programs, interviews

MaNEP Management:

Radio interview: M. Kugler, *L'eau ferrugineuse: Un physicien et la magie des matériaux de demain* presented by Thierry Romanens, Radio Suisse Romande La Première, August 19, 2002

Radio interviews: M. Kugler, *Ouvert pour cause d'inventaire: La Magie des matériaux de demain* presented by Michèle Durand-Vallade, Radio Suisse Romande La Première, September 9-13, 2002

Project # 1, project leader M. Büttiker:

Electron pairs behave like bosons, **Physics Web** Highlight, July 2002, <http://physicsweb.org/article/news/6/7/6/1>

Project # 6, project leader J.W. Blatter:

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Project # 6, project leader J.W. Blatter:

Quanten-Fussball, open house ETH Zurich, Institute of Physics, June 15, 2002 (Poster and simulation by C. Helm).

Quantenwellen auf dem Elektronensee, open house ETH Zurich, Institute of Physics, June 15, 2002 (Poster and simulation by C. Helm).

The Physics of Good Coffee, open house ETH Zurich, Institute of Physics, June 15, 2002 (Poster and simulation by A. de Col).

Project # 9, project leader T. M. Rice:

Theoretical physics, open house ETH Zurich, Institute of theoretical physics, June 15, 2002 (Posters, simulations and demonstrations by M. Sigrist with the staff of the Institute).

Voyage en classe perovskite, interactive CD-rom including movie and presentation of MaNEP, February 2003.

Radio interview: Ø. Fischer, *Mordicus: Connaissez-vous les technologies de l'infiniment petit ?*, presented by Madeleine Caboche and Nancy Ypsilantis, Radio Suisse Romande La Première, October 25, 2002.

Radio show: M. Kugler, special guest of *Les Dicodeurs: aux portes du nanomonde*, presented by Laurence Bisang, Radio Suisse Romande La Première, November 11-15, 2002.

Project # 6, project leader J. W. Blatter:

Interview: J. W. Blatter, *Quantensprung*, Christine Sidler - Oerlikon Journalisten AG, March 2002.

Project # 10, project leader P. Martinoli:

Radio interviews: P. Martinoli, *Laser: research and education in Switzerland*, Radio della Svizzera Italiana Rete 2, January 7-10, 2003.

A-7 Movies

MaNEP Management:

Voyage en classe perovskite, realized by UBIK Prod., produced by MaNEP, 15 minutes, September 2002.
Format: CD-ROM, DVD and VHS.