

Annex 1: List of most important publications of the NCCR

Condensing twelve years of research with more than 3'100 publications into 25 selected articles has been a daunting task. The following 25 publications have been selected to constitute a fair and balanced representation of the scientific research conducted in MaNEP. Selection guidelines were scientific impact, collaborative aspects and representativeness of the participating groups and institutes. The outcome of this exercise is listed below in no particular order.

N. REYREN, S. THIEL, A. D. CAVIGLIA, L. FITTING KOURKOUTIS, G. HAMMERL, C. RICHTER, C. W. SCHNEIDER, T. KOPP, A.-S. RÜETSCHI, D. JACCARD, M. GABAY, D. A. MULLER, J.-M. TRISCONE, AND J. MANNHART,

Superconducting interfaces between insulating oxides

Science **317**, 1196 (2007)

CH. RÜEGG, N. CAVADINI, A. FURRER, H.-U. GÜDEL, K. KRÄMER, H. MUTKA, A. WILDES, K. HABICHT, AND P. VORDERWISCH

Bose-Einstein condensation of the triplet states in the magnetic insulator $TlCuCl_3$

Nature **423**, 62 (2003)

A. B. KUZMENKO, E. VAN HEUMEN, F. CARBONE, AND D. VAN DER MAREL

Universal optical conductance of graphite

Physical Review Letters **100**, 117401 (2008)

C. R. AST, J. HENK, A. ERNST, L. MORESCHINI, M. C. FALUB, D. PACILÉ, P. BRUNO, K. KERN, AND M. GRIONI

Giant spin splitting through surface alloying

Physical Review Letters **98**, 186807 (2007)

M. GUARISE, B. DALLA PIAZZA, M. MORETTI SALA, G. GHIRINGHELLI, L. BRAICOVICH, H. BERGER, J. N. HANCOCK, D. VAN DER MAREL, T. SCHMITT, V. N. STROCOV, L. J. P. AMENT, J. VAN DEN BRINK, P.-H. LIN, P. XU, H. M. RØNNOW, AND M. GRIONI

Measurement of magnetic excitations in the two-dimensional antiferromagnetic $Sr_2CuO_2Cl_2$ insulator using resonant X-ray scattering: evidence for extended interactions

Physical Review Letters **105**, 157006 (2010)

M. KENZELMANN, TH. STRÄSSLE, C. NIEDERMAYER, M. SIGRIST, B. PADMANABHAN, M. ZOLLIKER, A. D. BIANCHI, R. MOVSHOVICH, E. D. BAUER, J. L. SARRAO, AND J. D. THOMPSON

Coupled superconducting and magnetic order in $CeCoIn_5$

Science **321**, 1652 (2008)

H. P. BÜCHLER AND G. BLATTER

Supersolid versus phase separation in atomic Bose-Fermi mixtures

Physical Review Letters **91**, 130404 (2003)

H. CERCELLIER, C. MONNEY, F. CLERC, C. BATTAGLIA, L. DESPONT, M. G. GARNIER, H. BECK, P. AEBI, L. PATTHEY, H. BERGER, AND L. FORRÓ

Evidence for an excitonic insulator phase in 1T-TiSe₂

Physical Review Letters **99**, 146403 (2007).

B. SACÉPÉ, J. B. OOSTINGA, J. LI, A. UBALDINI, N. J. G. COUTO, E. GIANNINI, AND A. F. MORPURGO

Gate-tuned normal and superconducting transport at the surface of a topological insulator

Nature Communications **2**, 575 (2011)

P. A. FRIGERI, D. F. AGTERBERG, A. KOGA, AND M. SIGRIST

Superconductivity without inversion symmetry: MnSi versus CePt₃Si

Physical Review Letters **92**, 097001 (2004)

PH. WERNER, A. COMANAC, L. DE' MEDICI, M. TROYER, AND A. J. MILLIS

Continuous-time solver for quantum impurity models

Physical Review Letters **97**, 076405 (2006)

M. S. A. HOSSAIN, C. SENATORE, R. FLÜKIGER, M. A. RINDFLEISCH, M. J. TOMSIC, J. H. KIM, AND S. X. DOU

The enhanced J_c and B_{irr} of in situ MgB₂ wires and tapes alloyed with C₄H₆O₅ (malic acid) after cold high pressure densification

Superconductor Science and Technology **22**, 095004 (2009)

K. KODAMA, M. TAKIGAWA, M. HORVATIĆ, C. BERTHIER, H. KAGEYAMA, Y. UEDA, S. MIYAHARA, F. BECCA, AND F. MILA

Magnetic superstructure in the two-dimensional quantum antiferromagnet SrCu₂(BO₃)₂

Science **298**, 395 (2002)

V. SCAGNOLI, U. STAUB, Y. BODENTHIN, R. A. DE SOUZA, M. GARCÍA-FERNÁNDEZ, M. GARGANOURAKIS, A. T. BOOTHROYD, D. PRABHAKARAN, AND S. W. LOVESEY

Observation of orbital currents in CuO

Science **332**, 696 (2011)

K.-Y. YANG, T. M. RICE, AND F.-C. ZHANG

Phenomenological theory of the pseudogap state

Physical Review B **73**, 174501 (2006).

M. L. REINLE-SCHMITT, C. CANCELLIERI, D. LI, D. FONTAINE, M. MEDARDE, E. POMJAKUSHINA, C. W. SCHNEIDER, S. GARIGLIO, PH. GHOSEZ, J.-M. TRISCONE, AND P. R. WILLMOTT

Tunable conductivity threshold at polar oxide interfaces

Nature Communications **3**, 932 (2012)

D. SCHMIDIGER, P. BOUILLOT, S. MÜHLBAUER, S. GVASALIYA, C. KOLLATH, T. GIAMARCHI, AND A. ZHELUDEV

Spectral and thermodynamic properties of a strong-leg quantum spin ladder
Physical Review Letters **108**, 167201 (2012)

P. SAMUELSSON, E. V. SUKHORUKOV, AND M. BÜTTIKER

Orbital entanglement and violation of Bell inequalities in mesoscopic conductors
Physical Review Letters **91**, 157002 (2003)

Ø. FISCHER, M. KUGLER, I. MAGGIO-APRILE, CH. BERTHOD, AND CH. RENNER

Scanning tunneling spectroscopy of high-temperature superconductors
Reviews of Modern Physics **79**, 353 (2007)

P. PARUCH, T. GIAMARCHI, AND J.-M. TRISCONI

Domain wall roughness in epitaxial ferroelectric $PbZr_{0.2}Ti_{0.8}O_3$ thin films
Physical Review Letters **94**, 197601 (2005)

A. V. SOLOGUBENKO, H. R. OTT, G. DHALENNE, AND A. REVCOLEVSCHI

Universal behavior of spin-mediated energy transport in $S = 1/2$ chain cuprates: $BaCu_2Si_2O_7$ as an example
Europhysics Letters **62**, 540 (2003)

A. DUSZA, A. LUCARELLI, F. PFUNER, J.-H. CHU, I. R. FISHER, AND L. DEGIORGI

Anisotropic charge dynamics in detwinned $Ba(Fe_{1-x}Co_x)_2As_2$
Europhysics Letters **93**, 37002 (2011)

J.-P. BRANTUT, J. MEINEKE, D. STADLER, S. KRINNER, AND T. ESSLINGER

Conduction of ultracold fermions through a mesoscopic channel
Science **337**, 1069 (2012)

M. ANGST, R. PUZNIAK, A. WISNIEWSKI, J. JUN, S. M. KAZAKOV, J. KARPINSKI, J. ROOS, AND H. KELLER

Temperature and field dependence of the anisotropy of MgB_2
Physical Review Letters **88**, 167004 (2002)

A. J. DREW, J. HOPPLER, L. SCHULZ, F. L. PRATT, P. DESAI, P. SHAKYA, T. KREOUZIS, W. P. GILLIN, A. SUTER, N. A. MORLEY, V. K. MALIK, A. DUBROKA, K. W. KIM, H. BOUYANFIF, F. BOURQUI, C. BERNHARD, R. SCHEUERMANN, G. J. NIEUWENHUYNS, T. PROKSCHA, AND E. MORENZONI

Direct measurement of the electronic spin diffusion length in a fully functional organic spin valve by low-energy muon spin rotation
Nature Materials **8**, 109 (2009)