

17 Publications

17.1 Elementary particles and their interactions

17.1.1 ArDM

Articles in press

- **Development of wavelength shifter coated reflectors for the ArDM argon dark matter detector**
V. Boccone *et al.*, Journal of Instrumentation.
- **The ArDM project: A Liquid Argon TPC for Dark Matter Detection**
V. Boccone, Proc. XIII Int. Conf. on Calorimetry in High Energy Physics (CALOR 08), Pavia, 2008, arXiv:0810.4490v1, Journal of Physics.

Invited Lectures

- V. Boccone: **The ArDM project: A Liquid Argon TPC for Dark Matter**
XIII Int. Conf. on Calorimetry in High Energy Physics (CALOR 08), Pavia, 28 May 2008.
- P. Otyugova: **The ArDM - 1 ton Experiment**
3rd CHIPP Neutrino Meeting, Zurich, 17.-18. November 2008.
- C. Regenfus: **The Argon Dark Matter Experiment (ArDM)**
4th Patras Workshop on Axions, WIMPs and WISPs, DESY, Hamburg, 19 June 2008.

17.1.2 ATHENA

Article

- **Temporally Controlled Modulation of Antihydrogen Production and the Temperature Scaling of Antiproton-Positron Recombination**
M.C. Fujiwara *et al.*, Phys. Rev. Lett. **101** (2008) 053401.

17.1.3 CDMS

Article

- **Search for Weakly Interacting Massive Particles with the First Five-Tower Data from the Cryogenic Dark Matter Search at the Soudan Underground Laboratory**
CDMS Collaboration, Phys. Rev. Lett **102**, 011301 (2009).

Invited lectures and conference contributions

- L. Baudis: **Direct Detection of Cold Dark Matter with CDMS and XENON**
LAPTH Seminar, LAPP Annecy, June 27 2008.
- T. Bruch: **Recent results from the CDMS-II experiment**
4th PATRAS Workshop, DESY, Hamburg, June 19 2008.
- S. Arrenberg: **Hunting for Dark Matter with the CDMS Experiment**
MINOS Collaboration Meeting, Ely, June 11, 2008.
- T. Bruch: **Search for Axions with the CDMS-II Experiment**
DPG, LMU Munich, Germany, March 9 2009.

17.1.4 CMS

Articles

- **The CMS experiment at the CERN LHC**
S. Chatrchyan *et al.*, Journal of Instrumentation **3** (2008) S08004.
- **B physics at CMS**
T. Speer, Proc. 2007 Eur. Conf. on High Energy Physics, Manchester, Journal of Physics: Conference Series **110** (2008) 052049.
- **Beauty Production and Identification at CMS**
A. Schmidt, Nuclear Physics B (Proceedings Supplements) **187** (2009) 216.
- **Fast Simulation of the CMS Detector at the LHC**
A. Schmidt, IEEE Nuclear Science Symposium Conference Record **N37-4** (2008) 2795.
- **A novel technique for the reconstruction and simulation of hits in the CMS Pixel Detector**
V. Chiochia, IEEE Nuclear Science Symposium Conference Record **N27-3** (2008) 1909.

Articles in press

- **Mechanical Design and Material Budget of the CMS Barrel Pixel Detector**
C. Amsler *et al.*, Journal of Instrumentation (2008).
- **Position resolution for the CMS Barrel Pixel Detector after irradiation**
E. Alagöz, Proc. 11th Topical Seminar on Innovative Particle and Radiation Detectors, Siena, Nucl. Phys. B.
- **Experience with CMS pixel software commissioning**
V. Chiochia, Proc. 17th Int. Workshop on Vertex detectors (Vertex 08), Stockholm, 2008, arXiv:0812.0681, Proceedings of Science.

- **Searches for New Phenomena at CMS and ATLAS**
T. Rommerskirchen, Moriond QCD and High Energy Interactions, La Thuile, 2009.
- **Heavy Flavour Physics at CMS and ATLAS**
L. Wilke, Moriond QCD and High Energy Interactions, La Thuile, 2009.

CMS notes and reports

- **Impact of Tracker Misalignment on the CMS b-tagging performance**
A. Schmidt *et al.*, CMS Note AN-2007/047.
- **SUSY searches with dijet events**
T. Rommerskirchen and the CMS collaboration, CMS Physics analysis report SUS-08-005.
- **Beauty Production and Identification at CMS**
A. Schmidt, CMS Conference report CR-2008/061.
- **Gamma ray bursts: observation and theoretical conjectures**
E. Alagöz *et al.*, CERN Yellow report 2008-004 (2008) 287.

Invited Lectures

- E. Alagöz: **Position resolution for the CMS Barrel Pixel Detector after irradiation**
11th Topical Seminar on Innovative Particle and Radiation Detectors, Siena, 3 October 2008.
- V. Chiochia: **Experience with CMS pixel software commissioning**
17th Int. Workshop on Vertex detectors (Vertex 08), Stockholm, 27 July 2008.
- V. Chiochia: **A novel technique for the reconstruction and simulation of hits in the CMS Pixel Detector**
IEEE Nuclear Science Symposium, Dresden, 19 October 2008.
- T. Rommerskirchen: **Searches for New Phenomena at CMS and ATLAS**
Moriond QCD and High Energy Interactions 2009, La Thuile, 17 March 2009.
- A. Schmidt: **Fast Simulation of the CMS Detector at the LHC**
IEEE Nuclear Science Symposium, Dresden, 20 October 2008.
- A. Schmidt: **Beauty Production and Identification at CMS**
Eighth Int. Conf. on Hyperons, Charm and Beauty Hadrons (BEACH2008), Columbia, USA, 22 June 2008.
- L. Wilke: **LHC status and upgrade plan: CMS**
Meeting of the Swiss Institute of Particle Physics (CHIPP), Lausanne, 8 September 2008.
- L. Wilke: **Heavy Flavour Physics at CMS and ATLAS**
Moriond QCD and High Energy Interactions 2009, La Thuile, 16 March 2009.

17.1.5 D0

Articles

- **Search for Higgs bosons decaying to tau pairs in ppbar collisions with the D0 detector**
V. M. Abazov *et al.*, Phys. Rev. Lett. **101**, 071804 (2008).
- **First study of the radiation-amplitude zero in Wgamma production and limits on anomalous WWgamma couplings at $\sqrt{s}=1.96$ TeV**
V. M. Abazov *et al.*, Phys. Rev. Lett. **100**, 241805 (2008).
- **Evidence for production of single top quarks**
V. M. Abazov *et al.*, Phys. Rev. D **78**, 012005 (2008).
- **Search for decay of a fermiophobic Higgs boson $h_f \rightarrow \gamma\gamma$ with the D0 detector at $\sqrt{s} = 1.96$ TeV**
V. M. Abazov *et al.*, Phys. Rev. Lett. **101**, 051801 (2008).
- **Search for pair production of doubly-charged Higgs bosons in the $H^{++}H^{--} \rightarrow \mu^+\mu^+\mu^-\mu^-$ final state at D0**
V. M. Abazov *et al.*, Phys. Rev. Lett. **101**, 071803 (2008).
- **Search for large extra dimensions in the mono-photon final state at $\sqrt{s} = 1.96$ TeV**
V. M. Abazov *et al.*, Phys. Rev. Lett. **101**, 011601 (2008).
- **Measurement of the ratio of the $p\bar{p} \rightarrow W+c$ -jet cross section to the inclusive $p\bar{p} \rightarrow W$ +jets cross section**
V. M. Abazov *et al.*, Phys. Lett. B **666**, 23 (2008).
- **Search for scalar top quarks in the acoplanar charm jets and missing transverse energy final state in $p\bar{p}$ collisions at $\sqrt{s} = 1.96$ TeV**
V. M. Abazov *et al.*, Phys. Lett. B **665**, 1 (2008).
- **Measurement of the ttbar production cross section in ppbar collisions at $\sqrt{s} = 1.96$ TeV**
V. M. Abazov *et al.*, Phys. Rev. Lett. **100**, 192004 (2008).
- **Search for W-prime boson resonances decaying to a top quark and a bottom quark**
V. M. Abazov *et al.*, Phys. Rev. Lett. **100**, 211803 (2008).
- **Search for squarks and gluinos in events with jets and missing transverse energy using 2.1 fb-1 of ppbar collision data at $\sqrt{s}=1.96$ TeV**
V. M. Abazov *et al.*, Phys. Lett. B **660**, 449 (2008).

PhD thesis

- **Search for the Rare Decays $B^\pm \rightarrow K^\pm\mu^+\mu^-$ and $B_d^0 \rightarrow K^*\mu^+\mu^-$ with the D0 Experiment**
Andreas Wenger, PhD thesis, Universität Zürich, Dezember 2008.

17.1.6 DIRAC

Articles

- **A new aerogel Cherenkov detector for DIRAC-II**
Y. Allkofer *et al.*, Nucl. Instrum. Meth. in Phys. Research **A 595** (2008) 84.
- **The C₄F₁₀ Cherenkov detector for DIRAC-II**
S. Horikawa *et al.*, Nucl. Instrum. Meth. in Phys. Research **A 595** (2008) 212.
- **Evidence for πK -atoms with DIRAC**
B. Adeva *et al.*, Physics Letters **B 674** (2009) 11.
- **Search for πK -atoms with DIRAC II**
Y. Allkofer *et al.*, Proc. XII Int. Conf. on Hadron Spectroscopy, Physics Series, Vol. **XLVI** (2008) 883.

Article in press

- **Observation of πK -atoms with DIRAC-II**
Y. Allkofer, Int. conf. on exotic atoms and related topics (EXA08), Vienna, 2008.

PhD thesis

- **Search for πK -atoms with DIRAC**
Y. Allkofer, Inaugural Dissertation, Universität Zürich, 2008.

Invited Lecture

- **Observation of πK -atoms with DIRAC-II**
Y. Allkofer, Int. conf. on exotic atoms and related topics (EXA08), Vienna, 2008.

17.1.7 GERDA

Invited lectures and conference contributions

- L. Baudis: **The GERDA Experiment**
Third CHIPP Swiss Neutrino Workshop, ETH Zurich, November 17 2008.
- L. Baudis: **Suche nach dem neutrinolosen Doppelbetazerfall und das GERDA Experiment am Gran Sasso Untergrundlabor**
Physikalische Gesellschaft Zürich, April 10 2008.
- F. Froberg: **The GERDA Experiment**
CHIPP Planery Meeting, Lausanne, September 5 2008.

- F. Froberg: **The Calibration System for the GERDA Experiment**
ISAPP 2008, Valencia, July 19 2008.

17.1.8 H1

Articles

- **A General Search for New Phenomena at HERA**
F. D. Aaron *et al.*, Phys. Lett. B **674** (2009) 257.
- **Study of Charm Fragmentation into D^\pm Mesons in Deep-Inelastic Scattering at HERA**
F. D. Aaron *et al.*, Eur. Phys. J. C **59** (2009) 589.
- **Inclusive Photoproduction of ρ^0 , K^0 and ϕ Mesons at HERA**
F. D. Aaron *et al.*, Phys. Lett. B **673** (2009) 119.
- **Measurement of Diffractive Scattering of Photons with Large Momentum Transfer at HERA**
F. D. Aaron *et al.*, Phys. Lett. B **672** (2009) 219.
- **Multi-Lepton Production at High Transverse Momenta in ep Collisions at HERA**
F. D. Aaron *et al.*, Phys. Lett. B **668** (2008) 268.
- **Measurement of the Proton Structure Function F_L at Low x**
F. D. Aaron *et al.*, Phys. Lett. B **665** (2008) 139.
- **Search for Excited Electrons in ep Collisions at HERA**
F. D. Aaron *et al.*, Phys. Lett. B **666** (2008) 131.
- **A Search for Excited Neutrinos in e-p Collisions at HERA**
F. D. Aaron *et al.*, Phys. Lett. B **663**, 382 (2008).

Articles in press

- **Events with Isolated Leptons and Missing Transverse Momentum and Measurement of W Production at HERA**
F. D. Aaron *et al.*, arXiv:0901.0488 (hep-ex).
- **Strangeness Production at low Q^2 in Deep-Inelastic ep Scattering at HERA**
F. D. Aaron *et al.*, arXiv:0810.4036 (hep-ex).

Bachelor thesis

- **Identification of isolated photons at high energies at H1**
Arno Gadola, Bachelor thesis, Universität Zürich, März 2008.

Conference contribution

- **Prompt Photon Production in Photoproduction at HERA**
K. Nowak, XVI International Workshop on Deep-Inelastic Scattering and Related Subjects, University College London, April 7-11, 2008.

17.1.9 LHCb

Article

- **The LHCb Detector at the LHC**
A. A. Alves *et al.*, JINST **3**, S08005 (2008).

Conference contributions and invited talks

- **Electroweak physics at LHCb**
Jonathan Anderson, Seminar at the School of Physics, University College Dublin, November 18, 2008.
- **The LHCb Silicon Tracker: lessons learned (so far)**
A. Vollhardt, Topical Workshop on Electronics for Particle Physics (TWEPP), Naxos (Greece), September 2008.

LHCb notes

- **Production, Commissioning and First Data of the LHCb Silicon Tracker**
H. Voss *et al.*, CERN-LHCb-2008-062.
- **TT detector description and implementation of the survey measurements**
C. Salzmann and J. Van Tilburg, CERN-LHCb-2008-061.
- **The LHCb Silicon Tracker: lessons learned (so far)**
A. Vollhardt, CERN-LHCb-2008-049.

17.1.10 Ultracold neutrons

Articles

- **Neutron velocity distribution from a superthermal solid 2H₂ ultracold neutron source**
I. Altarev *et al.*, Eur. Phys. J. A **37**, 922614 (2008).
- **Storage of ultracold neutrons in high resistivity, non-magnetic materials with high Fermi potential**
K. Bodek *et al.*, Nuclear Instruments and Methods in Physics Research A **597**, 222226226 (2008).

PhD thesis

- **Production, Characterization and Reflectivity Measurements of Diamond-like Carbon and other Ultracold Neutron Guide Materials**

Stefan Heule, PhD thesis, Universität Zürich, Juni 2008.

Conference contributions and invited talks

- **Direct Experimental Limit on Neutron \rightarrow Mirror Neutron Oscillations**

A. Knecht, International Workshop on Particle Physics with Slow Neutrons, 31. May 2008, Grenoble. Talk and Poster.

17.1.11 XENON

Articles

- **First Results from the XENON10 Dark Matter Experiment at the Gran Sasso National Laboratory**
XENON Collaboration, Phys. Rev. Lett. 100, 021303 (2008).
- **New measurement of the relative scintillation efficiency of xenon nuclear recoils below 10 keV**
E. Aprile, L. Baudis, B. Choi *et al.*, Phys. Rev. C 79, 045807 (2009).
- **Determination of the scintillation and ionization yield of liquid Xe from the XENON10 experiment**
XENON10 Collaboration, Nucl. Inst. and Meth. A 601, 339 (2009).
- **Limits on the Spin-Dependent WIMP-nucleon Cross Section from the XENON10 Experiment**
XENON10 Collaboration, Phys. Rev. Lett. 101, 091301 (2008).

Invited lectures and conference contributions

- L. Baudis: **Cold Dark Matter Searches with XENON**
ETH/UZH Physics Colloquium, Zurich, December 10 2008.
- L. Baudis: **Backgrounds and Sensitivity Expectations for XENON100 Identification of Dark Matter**
IDM08, Stockholm, August 19 2008.
- L. Baudis: **Dark Matter Searches with Liquid Xenon Experiments**
Physics colloquium, Max Planck Institute for Nuclear Physics Heidelberg, July 16 2008.
- L. Baudis: **Cold Dark Matter Searches with XENON**
CERN joint PP/EP seminar, October 27 2008.
- L. Baudis: **Cold Dark Matter Searches and the XENON Experiment**
DESY seminar, June 17 2008.

- R. Santorelli: **Calibration of the Xenon100 detector**
Dark Matter at the crossroads, DESY, Hamburg, October 1 2008.
- R. Santorelli: **The XENON Dark Matter Project**
Rencontres de Moriond EW 2008, La Thuile, March 6 2008.
- A.D. Ferella: **Material screening and background expectation for the Xenon100 experiment**
Dark Matter at the crossroads, DESY, Hamburg, October 1 2008.
- A. Manalaysay: **R&D of Liquid Xenon TPCs for Dark Matter Searches**
CHIPP 2008 Workshop on Detector R&D, Geneva, June 12 2008.
- M. Haffke: **Untergrundstudien für das Xenon 1t-Projekt**
DPG, LMU Munich, Germany, March 9 2009.

17.1.12 Miscellaneous

Reviews

- **Review of Particle Physics**
C. Amsler *et al.* (Particle Data Group), Physics Letters **B 667** (2008) 1.
- **2008 Particle Physics Booklet**
C. Amsler *et al.* (Particle Data Group), Special issue printed by Elsevier.
- **Flavor physics of leptons and dipole moments**
M. Raidal and A. van der Schaaf *et al.*, Eur. Phys. J. C (2008) 57: 13-182.

Articles

- **The $\eta(1405)$, $\eta(1475)$, $f_1(1420)$, and $f_1(1510)$**
C. Amsler and A. Masoni, Phys. Lett. **B 667** (2008) 641.
- **Note on scalar mesons**
N.A. Törnqvist, S. Spanier and C. Amsler, Phys. Lett. **B 667** (2008) 594.
- **Quark Model**
C. Amsler, T. DeGrand and B. Krusche, Phys. Lett. **B 667** (2008) 172.
- **Low energy tracking and particles identification in the MUNU Time Projection Chamber at 1 bar: possible application in low energy solar neutrino spectroscopy**
Z. Daraktchieva *et al.* (MUNU Collaboration), J. Phys. G: Nucl. Part. Phys. **35** (2008) 125107.
- **Dark Matter Disc Enhanced Neutrino Fluxes from the Sun and Earth**
T. Bruch, A. Peter, J. Read, L. Baudis and G. Lake, Physics Letters B 674, 250-256 (2009).
- **Detecting the Milky Way's Dark Disk**
T. Bruch, J. Read, L. Baudis and G. Lake, Astrophysical Journal 696, 920-923 (2009).

- **Kaluza-Klein Dark Matter: Direct Detection vis-a-vis LHC**
S. Arrenberg, L. Baudis, K. Kong, K.T. Matchev and J. Yoo, Phys. Rev. D78, 056002 (2008).

Talks

- C. Amsler: **From Antihydrogen to Dark Matter, Experimental Challenges**
Physik-Kolloquium, Universität Basel, 20 February 2009.
- A. van der Schaaf: **$\mu \rightarrow 3e$ and muon EDM 5000 times better?**
Meeting of the Swiss Institute of Particle Physics (CHIPP), Lausanne, 8 September 2008.
- A. van der Schaaf: **Prospects of a $\mu \rightarrow 3e$ search at 10^{-16}**
3rd CHIPP Swiss neutrino workshop, ETH Zürich, 17.-18. November 2008.
- U. Straumann: **CHIPP and Swiss Particle Physics**
R-ECFA visit in Switzerland, EPF Lausanne, 6 March 2009.
- A. Büchler: **PhD student point of view**
R-ECFA visit in Switzerland, EPF Lausanne, 6 March 2009.
- L. Baudis: **Direct Dark Matter Searches: An Overview**
New Horizons for Modern Cosmology, Dark Matter Conference, Galileo Galilei Institute, Florence, February 9 2009.
- L. Baudis: **Status of Direct Experimental Searches for Dark Matter**
ENTApP Dark Matter Workshop, CERN, February 3 2009.
- L. Baudis: **Searching for Cold Dark Matter Signatures in the Milky Way**
EPFL seminar, Lausanne, December 1 2008.
- L. Baudis: **Direct WIMP Searches**
Dark Matter at the Crossroads, DESY, Hamburg, October 1 2008.
- L. Baudis: **Results and Prospects of Direct Dark Matter Detection**
CHIPP Plenary Meeting, Lausanne, September 9 2008.
- L. Baudis: **Cold Dark Matter Searches with the CDMS and XENON Experiments**
Physics colloquium, University of Bielefeld, June 30 2008.
- L. Baudis: **Experimental Dark Matter Searches: an Overview**
APP UK 2008 Conference, June 20 2008.
- L. Baudis: **Dark Matter Searches with Liquid Noble Gases**
E15 seminar, TU Munich, June 4 2008.
- L. Baudis: **Direct Detection of Cold Dark Matter**
Physics Colloquium, Paul Scherrer Institute, April 24 2008.
- S. Arrenberg: **Die dunkle Seite des Universums**
Nacht der Forschung "Forschende im Gespräch", Zürich, September 26 2008.
- T. Bruch: **Signatures of the Milky Way's Dark Disk in Current and Future Experiments**
IDM 2008, Stockholm, August 18 2008.

- S. Arrenberg: **Kaluza-Klein Dark Matter - Direct Detection vis-a-vis LHC**
IDM 2008, Stockholm, August 18 2008.
- M. Haffke: **Dark Matter Searches**
Teilchenphysik Seminar, University of Bonn, Bonn, July 17 2008.

Master thesis

- **A fast online and triggerless signal reconstruction based on cross-correlation**
Arno Gadola, Master thesis, Universität Zürich, January 2009.

17.2 Condensed matter

17.2.1 Superconductivity and Magnetism

Articles

- **Nodeless superconductivity in the infinite-layer electron-doped cuprate superconductor $\text{Sr}_{0.9}\text{La}_{0.1}\text{CuO}_2$**
R. Khasanov, A. Shengelaya, A. Maisuradze, D. Di Castro, I.M. Savić, S. Weyeneth, M.S. Park, D.J. Jang, S.-I. Lee, and H. Keller, *Phys. Rev. B* **77**, 184512-1-6 (2008).
- **3D- xy critical properties of $\text{YBa}_2\text{Cu}_4\text{O}_8$ and magnetic-field-induced 3D to 1D crossover**
S. Weyeneth, T. Schneider, Z. Bukowski, J. Karpinski, and H. Keller, *J. Phys.: Condens. Matter* **20**, 345210-1-4 (2008).
- **Single crystals of superconducting $\text{SmFeAsO}_{1-x}\text{F}_y$ grown at high pressure**
N.D. Zhigadlo, S. Katrych, Z. Bukowski, S. Weyeneth, R. Puzniak, and J. Karpinski, *J. Phys.: Condens. Matter* **20**, 342202-1-5 (2008).
- **Evidence for competition between the superconducting and the pseudogap state in $(\text{BiPb})_2(\text{SrLa})_2\text{CuO}_{6+\delta}$ from muon-spin rotation experiments**
R. Khasanov, Takeshi Kondo, S. Strässle, D.O.G. Heron, A. Kaminski, H. Keller, S.L. Lee, and Tsunehiro Takeuchi, *Phys. Rev. Lett.* **101**, 227002-1-4 (2008).
- **Lack of evidence for orbital-current effects in $\text{Y}_2\text{Ba}_4\text{Cu}_7\text{O}_{15-\delta}$ from ^{89}Y NMR**
S. Strässle, J. Roos, M. Mali, T. Ohno, and H. Keller, *Phys. Rev. Lett.* **101**, 237001-1-4 (2008).
- **Weak High-Temperature Bulk Ferromagnetism in Mn-Doped CdGeAs_2 Semiconductors**
V.G. Storchak, J.H. Brewer, D.G. Eshchenko, S.L. Stubbs, S.P. Cottrell, A.A. Nikonov, O.E. Parfenov and S.F. Marenkin, Chapter 2 in: *Spintronics: Materials, Applications and Devices*, Editors: G.C. Lombardi et al, pp. 49-58, Nova Science Publishers (2008).
- **Spatially resolved inhomogeneous ferromagnetism in $(\text{Ga,Mn})\text{As}$ diluted magnetic semiconductors: A microscopic study by muon spin relaxation**
V.G. Storchak, D.G. Eshchenko, E. Morenzoni, T. Prokscha, A. Suter, X. Liu and J.K. Furdina, *Phys. Rev. Lett.* **101**, 027202-1-4 (2008).

- **Muon-spin rotation measurements of the penetration depth of the Mo_3Sb_7 superconductor**
R. Khasanov, P.W. Klamut, A. Shengelaya, Z. Bukowski, I.M. Savić, C. Baines, and H. Keller, *Phys. Rev. B* **78**, 014502-1-5 (2008).
- **Unconventional isotope effects, multi-component superconductivity and polaron formation in high temperature superconductors**
A. Bussmann-Holder and H. Keller, *Journal of Physics: Conference Series* **108**, 012019-1-16 (2008).
- **Oxygen isotope effect on the superconducting transition and magnetic states within the phase diagram of $\text{Y}_{1-x}\text{Pr}_x\text{Ba}_2\text{Cu}_3\text{O}_{7-\delta}$**
R. Khasanov, A. Shengelaya, D. Di Castro, E. Morenzoni, A. Maisuradze, I.M. Savić, K. Conder, E. Pomjakushina, A. Bussmann-Holder, and H. Keller, *Phys. Rev. Lett.* **101**, 077001-1-4 (2008).
- **Detection of charge transfer processes in Cr-doped SrTiO_3 single crystals**
F. La Mattina, J.G. Bednorz, S.F. Alvarado, A. Shengelaya, and H. Keller, *Appl. Phys. Lett.* **93**, 022102-1-3 (2008).
- **Jahn-Teller physics and high- T_c superconductivity**
H. Keller, A. Bussmann-Holder, and K.A. Müller, *Materials Today* **11**, 38-46 (2008).
- **Polaron coherence as origin of the pseudogap phase in high temperature superconducting cuprates**
A. Bussmann-Holder, H. Keller, A.R. Bishop, A. Simon, and K.A. Müller, *J. Supercond. Nov. Magn.* **21**, 353-357 (2008).
- **Pressure effects on the magnetic transition temperature in ordered double perovskites**
D. Di Castro, P. Dore, R. Khasanov, H. Keller, P. Mahadevan, Sugata Ray, D.D. Sarma, and P. Postorino, *Phys. Rev. B* **78**, 184416 (2008).
- **Superfluid density and angular dependence of the energy gap in optimally doped $(\text{BiPb})_2(\text{SrLa})_2\text{CuO}_{6+\delta}$**
S. Strässle, R. Khasanov, T. Kondo, D.O.G. Heron, A. Kaminski, H. Keller, S.L. Lee, and T. Takeuchi, *J. Supercond. Nov. Magn.* **22**, 189-193 (2009).
- **Fermi Surface and Order Parameter Driven Vortex Lattice Structure Transitions in Twin-Free $\text{YBa}_2\text{Cu}_3\text{O}_7$**
J.S. White, V. Hinkov, R.W. Heslop, R.J. Lycett, E.M. Forgan, C. Bowell, S. Strässle, A.B. Abrahamson, M. Laver, C.D. Dewhurst, J. Kohlbrecher, J.L. Gavilano, J. Mesot, B. Keimer, and A. Erb, *Phys. Rev. Lett.* **102**, 097001-1-4 (2009).
- **Comparison of different methods for analyzing μSR line shapes in the vortex state of type-II superconductors**
A. Maisuradze, R. Khasanov, A. Shengelaya, and H. Keller, *J. Phys.: Condens. Matter* **21**, 075701-1-15 (2009).
- **Probing the Yb^{3+} spin relaxation in $\text{Y}_{0.98}\text{Yb}_{0.02}\text{Ba}_2\text{Cu}_3\text{O}_x$ by electron paramagnetic resonance**
A. Maisuradze, A. Shengelaya, B.I. Kochelaev, E. Pomjakushina, K. Conder, H. Keller, and K.A. Müller, *Phys. Rev. B* **79**, 054519-1-8 (2009).
- **Evidence for Polaron Formation in High-Temperature Superconducting Cuprates: Experiment and Theory**
A. Bussmann-Holder and H. Keller, *J. Supercond. Nov. Magn.* **22**, 123-129 (2009).
- **Anisotropy of superconducting single crystal $\text{SmFeAsO}_{0.8}\text{F}_{0.2}$ studied by torque magnetometry**
S. Weyeneth, R. Puzniak, U. Mosele, N.D. Zhigadlo, S. Katrych, Z. Bukowski, J. Karpinski, S. Khouh, J. Roos, and H. Keller, *J. Supercond. Nov. Magn.* **22**, 325-329 (2009).

- **Muon-spin rotation study of the ternary noncentrosymmetric superconductors $\text{Li}_2\text{Pd}_x\text{Pt}_{3-x}\text{B}$**
P.S. Häfliger, R. Khasanov, R. Lortz, A. Petrovic, K. Togano, C. Baines, B. Graneli, and H. Keller, *J. Supercond. Nov. Magn.* **22**, 337-342 (2009).
- **Evidence for two distinct anisotropies in the oxypnictide superconductors $\text{SmFeAsO}_{0.8}\text{F}_{0.2}$ and $\text{NdFeAsO}_{0.8}\text{F}_{0.2}$**
S. Weyeneth, R. Puzniak, N.D. Zhigadlo, S. Katrych, Z. Bukowski, J. Karpinski, and H. Keller, *J. Supercond. Nov. Magn.* **22**, 347-351 (2009).
- **Superconductivity at 23 K and low anisotropy in Rb-substituted BaFe_2As_2 single crystals**
Z. Bukowski, S. Weyeneth, R. Puzniak, P. Moll, S. Katrych, N.D. Zhigadlo, J. Karpinski, H. Keller, and B. Batlogg, *Phys. Rev. B* **79**, 104521-1-8 (2009).
- **Magnetism and superconductivity in cuprate heterostructures studied by Low Energy μSR**
B.M. Wojek, E. Morenzoni, D.G. Eshchenko, A. Suter, T. Prokscha, E. Koller, E. Treboux, Ø. Fischer, and H. Keller, *Physica B* **404**, 720-723 (2009).
- **Near-surface muonium states in germanium**
T. Prokscha, E. Morenzoni, D.G. Eshchenko, H. Luetkens, G.J. Nieuwenhuys, and A. Suter, *Physica B* **404**, 866-869 (2009).
- **Low energy muon studies of semiconductor interfaces**
D.G. Eshchenko, V.G. Storchak, E. Morenzoni, T. Prokscha, A. Suter, X. Liu, and J.K. Furdyna, *Physica B* **404**, 873-875 (2009).
- **RF- μSR in electric field studies of GaP**
D.G. Eshchenko, V.G. Storchak, and S.P. Cottrell, *Physica B* **404**, 876-879 (2009).
- **Muon track induced current measurements in semi-insulating GaAs**
D.G. Eshchenko, V.G. Storchak, and S.P. Cottrell, *Physica B* **404**, 880-883 (2009).
- **Electron localization into magnetic polaron in EuS**
V.G. Storchak, O.E. Parfenov, J.H. Brewer, P.L. Russo, S.L. Stubbs, R.L. Lichti, D.G. Eshchenko, E. Morenzoni, S.P. Cottrell, J.S. Lord, T.G. Aminov, V.P. Zlomanov, A.A. Vinokurov, R.L. Kallaher, and S. von Molnár, *Physica B* **404**, 896-898 (2009).
- **Novel muonium centers - magnetic polarons - in magnetic semiconductors**
V.G. Storchak, O.E. Parfenov, J.H. Brewer, P.L. Russo, S.L. Stubbs, R.L. Lichti, D.G. Eshchenko, E. Morenzoni, V.P. Zlomanov, A.A. Vinokurov, and V.G. Bamburov, *Physica B* **404**, 899-902 (2009).
- **High-pressure muon spin rotation studies of magnetic semiconductors: EuS**
D.G. Eshchenko, V.G. Storchak, E. Morenzoni, and D. Andreica, *Physica B* **404**, 903-905 (2009).

Articles in press

- **The microscopic study of a single hydrogen-like impurity in semi-insulating GaAs**
D.G. Eshchenko, V.G. Storchak, S.P. Cottrell, and E. Morenzoni, *cond-mat/0810.2692*.

PhD theses

- **Investigation of cuprate superconductors by electron paramagnetic resonance (EPR) and muon-spin rotation (μ SR)**
A. Maisuradze, PhD thesis, Universität Zürich, 2008.
- **Insulator-to-metal transition and resistive switching in Cr-doped SrTiO₃**
F. La Mattina, PhD thesis, Universität Zürich, 2008.
- **Investigations of the energy gaps in cuprate superconductors**
S. Strässle, PhD thesis, Universität Zürich, 2009.

Master thesis

- **Realisierung eines Tieftemperatureinsatzes für hochsensitive Drehmomentmagnetometrie**
U. Mosele, Master thesis, Universität Zürich, 2008.

Conference reports

- **Muon track induced current measurements in semi-insulating GaAs**
D.G. Eshchenko, V.G. Storchak, and S.P. Cottrell, μ SR 2008 – 11th International Conference on Muon Spin Rotation, Relaxation, & Resonance, Tsukuba, Japan, July 21-25, 2008.
- **RF- μ SR in electric field studies of GaP**
D.G. Eshchenko, V.G. Storchak, and S.P. Cottrell, μ SR 2008 – 11th International Conference on Muon Spin Rotation, Relaxation, & Resonance, Tsukuba, Japan, July 21-25, 2008.
- **Low Energy Muon studies of semiconductor interfaces**
D.G. Eshchenko, V.G. Storchak, E. Morenzoni, T. Prokscha, A. Suter, X. Liu, and J.K. Furdyna, μ SR 2008 – 11th International Conference on Muon Spin Rotation, Relaxation, & Resonance, Tsukuba, Japan, July 21-25, 2008.
- **High-pressure Muon Spin Rotation studies of magnetic semiconductors: EuS**
D.G. Eshchenko, V.G. Storchak, E. Morenzoni, and D. Andreica, μ SR 2008 – 11th International Conference on Muon Spin Rotation, Relaxation, & Resonance, Tsukuba, Japan, July 21-25, 2008.
- **Magnetism and superconductivity in cuprate heterostructures studied by Low Energy μ SR**
B.M. Wojek, E. Morenzoni, D.G. Eshchenko, T. Prokscha, A. Suter, E. Koller, E. Treboux, Ø. Fischer, and H. Keller, μ SR 2008 – 11th International Conference on Muon Spin Rotation, Relaxation, & Resonance, Tsukuba, Japan, July 21-25, 2008.
- **Magnetism and superconductivity in cuprate heterostructures studied by Low Energy μ SR**
B.M. Wojek, E. Morenzoni, D.G. Eshchenko, A. Suter, T. Prokscha, E. Koller, E. Treboux, Ø. Fischer, and H. Keller, 7th PSI Summer School on Condensed Matter Research, Zuoz, August 16-22, 2008.
- **Search for orbital-current effects in Y₂Ba₄Cu₇O_{15- δ} using ⁸⁹Y NMR**
S. Strässle, J. Roos, M. Mali, T. Ohno, and H. Keller, March Meeting of the American Physical Society, Pittsburgh, March 16-20, 2009.

- **Temperature dependent anisotropy of oxypnictide superconductors studied by torque magnetometry**
S. Weyeneth, R. Puzniak, N.D. Zhigadlo, S. Katrych, Z. Bukowski, J. Karpinski, U. Mosele, S. Kohout, J. Roos, and H. Keller, March Meeting of the American Physical Society, Pittsburgh, March 16-20, 2009.

Invited lectures

- H. Keller: **Universal correlations of unconventional isotope effects in cuprate superconductors**
CoMePhS Meeting Rome, University of Rome *La Sapienza*, Rome, Italy, April 9-11, 2008.
- H. Keller: **Unconventional isotope effects and multi-component superconductivity in cuprates**
6th International Conference of the Stripes Series, Stripes 08, Quantum Phenomena in Complex Matter, Erice (Sicily), Italy, July 26 - August 1, 2008.
- H. Keller: **Unconventional Isotope effects in cuprate superconductors**
22nd General Conference of the Condensed Matter Division of the European Physical Society, University of Rome *La Sapienza*, Rome, Italy, August 25-29, 2008.
- H. Keller: **Unconventional isotope effects and multi-component superconductivity in cuprates**
Second CoMePhS Workshop in Controlling Phase Separation in Electronic Systems, Nafplion, Greece, September 30 - October 4, 2008.
- S. Weyeneth: **Temperature dependent anisotropy of $\text{SmFeAsO}_{1-x}\text{F}_y$ single crystals studied by torque magnetometry**
International Workshop on Iron-(Nickel)-Based Superconductors, The Institute of Physics, Chinese Academy of Sciences, Beijing, China, October 19, 2008.
- H. Keller: **Unconventional isotope effects and multi-component superconductivity in cuprate high-temperature superconductors**
University of Augsburg, Augsburg, Germany, December 16, 2008.
- H. Keller: **Isotope effects and multi-band superconductivity in high-temperature superconductors**
SMEC 2009 Conference, Study of Matter at Extreme Conditions, Miami - Western Caribbean, U.S.A., March 28 - April 2, 2009.

17.2.2 Phase transitions and superconducting photon detectors

Articles

- **LaBaNiO₄: A Fermi glass**
A. Schilling, R. Dell'Amore, J. Karpinski, Z. Bukowski, M. Medarde, E. Pomjakushina and K. A. Müller, *J. Phys.: Condens. Matter*, **21**, (2009) 015701.
- **$U(1)$ symmetry breaking and violated axial symmetry in TiCuCl_3 and other insulating spin systems**
R. Dell'Amore, A. Schilling and K. Krämer, *Phys. Rev. B*, **79**, (2009) 014438.

- **Synthesis and Characterization of Hybrid Materials derived from Polyaniline and Lacunary Keggin-type Polyoxotungstates**
E. F.C. Chimamkpam, F. Hussain, A. Engel, A. Schilling and G. R. Patzke, *ZAAC*, **635**, (2009) 624.
- **Intrinsic Quantum Efficiency and Electro-Thermal Model of a Superconducting Nanowire Single-Photon Detector**
A. Semenov, P. Haas, H.-W. Hübers, K. Il'in, M. Siegel, A. Kirste, D. Drung, T. Schurig and A. Engel, *J. Mod. Optics*, **56**, (2009) 345.
- **Magnetic Vortices in Superconducting Photon Detectors**
A. Engel, H. Bartolf, A. Schilling, A. Semenov, H.-W. Hübers, K. Il'in and M. Siegel, *J. Mod. Optics*, **56**, (2009) 352.
- **Multi-project wafer scale process for productive research and development**
H. Bartolf, A. Engel, L. Gómez and A. Schilling, Raith Application Note 2008, Raith GmbH.
- **Fraction of Bose-Einstein condensed triplons in TlCuCl_3 from magnetization data**
R. Dell'Amore, A. Schilling and K. Krämer, *Phys. Rev. B*, **78**, (2008) 224403.
- **Differential-thermal analysis around and below the critical temperature T_c of various low- T_c superconductors: A comparative study**
M. Reibelt, A. Schilling, P. C. Canfield, G. Ravikumar and H. Berger, *Physica C*, **468**, (2008) 2254.
- **Vortex-based single-photon response in nanostructured superconducting detectors**
A. D. Semenov, P. Haas, H.-W. Hübers, K. Il'in, M. Siegel, A. Kirste, T. Schurig and A. Engel, *Physica C*, **468**, (2008) 627.
- **Fabrication of metallic structures with lateral dimensions less than 15 nm and $j_c(T)$ -measurements in NbN micro- and nanobridges**
H. Bartolf, A. Engel, A. Schilling, K. Il'in, M. Siegel, *Physica C*, **468**, (2008) 793.
- **Current-Induced Critical State in NbN Thin-Film Structures**
K. Il'in, M. Siegel, A. Engel, H. Bartolf, A. Schilling, A. Semenov, H.-W. Hübers, *J. Low Temp. Phys.*, **151**, (2008) 585.

PhD thesis

- **Bose-Einstein condensation in the quantum spin-system TlCuCl_3 : Any sign of "magnetic superfluidity"?**
Raffaele Dell'Amore, PhD thesis, Physik-Institut Universität Zürich, 2008.

Contributed Conference Presentations

- **Fabrication of superconducting single-photon detectors (poster)**
H. Bartolf, L. Gómez, A. Engel, A. Schilling, International Conference on Nanostructured Materials (NANO 2008), Rio de Janeiro, Brazil, 1.-6.6.2008.

Invited Lectures

- **Josephson junction arrays for THz radiation detection**
L. Gómez, Conference on Quantum Metrology 2008 (QM2008), Poznań, Poland, 5.5.2008.
- **Superconducting Nanostructures & Single-Photon Detector**
A. Engel, Manep Project 5 Internal Workshop 2008, Neuchâtel, Switzerland, 23.1.2009.

17.2.3 Surface Physics

Articles

- **Comparative electron diffraction study of the diamond nucleation layer on Ir(001)**
S. Gsell, S. Berner, T. Brugger, M. Schreck, R. Brescia, M. Fischer, J. Osterwalder, B. Stritzker, *Diamond Relat. Mater.* 17, 1029-1034 (2008).
- **Quantitative vectorial spin analysis in ARPES: Bi/Ag(111) and Pb/Ag(111)**
F. Meier, J. H. Dil, J. Lobo-Checa, L. Patthey, J. Osterwalder, *Phys. Rev. B* 77, 165431:1-7 (2008).
- **Charge-transfer dynamics in one-dimensional C₆₀ chains**
V. Pérez-Dieste, A. Tamai, T. Greber, S. G. Chiuzbaian, L. Patthey, *Surf. Sci.* 602, 1928-1932 (2008).
- **Living on the edge: a nanographene molecule adsorbed across gold step edges**
M. Treier, P. Ruffieux, R. Schillinger, T. Greber, K. Müllen, R. Fasel, *Surf. Sci. Lett.* 602, L84-L88 (2008).
- **Exchange-split interface state at h-BN/Ni(111)**
K. Zumbärgel, K. Wulff, Ch. Eibl, M. Donath, M. Hengsberger, *Phys. Rev. B* 78, 085422:1-7 (2008).
- **Graphene on Ru(0001): a 25 x 25 supercell**
D. Martoccia, P. R. Willmott, T. Brugger, M. Björk, S. Günther, C. M. Schlepütz, A. Cervellino, S. A. Pauli, B. D. Patterson, S. Marchini, J. Wintterlin, W. Moritz, T. Greber, *Phys. Rev. Lett.* 101, 126102:1-4 (2008).
- **Direct observation of space charge dynamics by picosecond low-energy electron scattering**
C. Cirelli, M. Hengsberger, A. Dolocan, H. Over, J. Osterwalder, T. Greber, *Europhys. Lett.* 85, 17010:1-5 (2008).
- **Growth of twin-free heteroepitaxial diamond on Ir/YSZ/Si(111)**
M. Fischer, R. Brescia, S. Gsell, M. Schreck, T. Brugger, T. Greber, J. Osterwalder, B. Stritzker, *J. Appl. Phys.* 104, 123531:1-5 (2008).
- **Rashba-type spin-orbit splitting of quantum well states in ultrathin Pb films**
J. H. Dil, F. Meier, J. Lobo-Checa, L. Patthey, G. Bihlmayer, J. Osterwalder, *Phys. Rev. Letters* 101, 266802: 1-4 (2008).
- **Comparison of electronic structure and template function of single-layer graphene and a hexagonal boron nitride nanomesh on Ru(0001)**
T. Brugger, S. Günther, B. Wang, J. H. Dil, M.-L. Bocquet, J. Osterwalder, J. Wintterlin, T. Greber, *Phys. Rev. B* 79, 045407:1-6 (2009).

- **Observation of unconventional quantum spin textures in topological insulators**
D. Hsieh, Y. Xia, L. Wray, D. Qian, A. Pal, J. H. Dil, J. Osterwalder, F. Meier, G. Bihlmayer, C. L. Kane, Y. S. Hor, R. J. Cava, M. Z. Hasan, *Science* 323, 919-922 (2009).
- **Nondegenerate metallic states on Bi(114): a one-dimensional topological metal**
J. W. Wells, J. H. Dil, F. Meier, J. Lobo-Checa, V. N. Petrov, J. Osterwalder, M. M. Ugeda, I. Fernandez-Torrente, J. I. Pascual, E. D. L. Rienks, M. F. Jensen, Ph. Hofmann, *Phys. Rev. Lett.* 102, 096802:1-4 (2009).
- **Two- and three-dimensional band structure of ultrathin Ni on Cu(001)**
M. Hoesch, V. N. Petrov, M. Muntwiler, M. Hengsberger, J. Lobo-Checa, T. Greber, J. Osterwalder, *Phys. Rev. B* 79, 155404:1-10 (2009).

Article in press

- **Fermi surfaces of single-layer dielectrics on transition metals**
T. Greber, M. Corso, J. Osterwalder, *Surf. Sci.*, doi:10.1016/j.susc.2008.08.043.

Master theses

- **Two-photon photoemission from tetramantane monolayers**
Silvan Roth, Master thesis, Physik-Institut, Universität Zürich, 2008.
- **Lumineszenz von h-BN Nanomesh**
Jeanette Schmidlin, Master thesis, Physik-Institut, Universität Zürich, 2008.

PhD thesis

- **Novel approaches to the bottom-up fabrication of ordered organic nanostructures on metal surfaces**
Matthias Treier, PhD thesis, Physik-Institut, Universität Zürich, 2008. (work carried out at EMPA, Thun).

Contributed conference presentations

- **Time-resolved photoelectron spectroscopy from solid surfaces**
M. Hengsberger, pre-NCCR Strategy Meeting "Ultrafast Phenomena in Nature", Bern, 03.06.08.
- **Measuring the nanoscale electrostatic potential landscape with PAX**
J. H. Dil, 3rd Swiss Molecules on Surfaces (molCHsurf-III) Discussion Meeting, Bern, 10.06.08.
- **Growth of Co clusters on the nanomesh and their characterization**
T. Brugger, EU-STREP NanoMesh Final Meeting, Orscholz, Germany, 23.06.08.
- **Understanding and tuning the electron spin on surfaces: Bi/Ag(111)**
F. Meier, SLS Symposium on Surface Science, PSI, 01.07.08.
- **Time-resolved 2PPE studies on a ferromagnetic h-BN/Ni(111) surface (Poster)**
D. Leuenberger, International Conference on Ultrafast Surface Dynamics (USD-6), Kloster Banz, Germany, 24.07.08.

- **Ar@C₆₀ - a photoemission study on a noble gas endofullerene**
M. Morscher, European Conference on Surface Science 2008, Liverpool, UK, 27.07.08.
- **Initial-state effects on electron transition probability in the phonon scattering process**
H. Yanagisawa, European Conference on Surface Science 2008, Liverpool, UK, 28.07.08.
- **Rashba-type spin-orbit splitting in quantum well states in thin Pb films**
J. H. Dil, European Conference on Surface Science 2008, Liverpool, UK, 28.07.08.
- **Understanding and tuning the electron spin on surfaces**
F. Meier, European Conference on Surface Science 2008, Liverpool, UK, 30.07.08.
- **Is graphene on Ru(0001) a nanomesh ?**
T. Brugger, European Conference on Surface Science 2008, Liverpool, UK, 31.07.08.
- **Two-photon photoemission experiments on tetramantane monolayers**
S. Roth, 19th European Conference on Diamond, Diamond-like Materials, Carbon Nanotubes and Nitrides, Sitges, Spain, 10.09.08.
- **Explanation of the Rashba effect at surfaces through quantum well states in ultrathin Pb films**
J. H. Dil, SLS Workshop on the Spectroscopy of Novel Materials, Rigi, 19.01.09.
- **Fermi surface spin textures of mixed surface alloys: BiPbSb/Ag(111)**
F. Meier, SLS Workshop on the Spectroscopy of Novel Materials, Rigi, 19.01.09.
- **Asymmetric electron emission from a tungsten tip apex due to surface plasmon polaritons excited by laser pulses**
H. Yanagisawa, Symposium on Surface and Nano Science (SSNS-09), Shizukuishi, Japan, 29.01.09.
- **Magnetism in the Ni(111) surface**
T. Greber, 24th Workshop on Novel Materials and Superconductors, Planeralm, Austria, 21.02.09.
- **Non-magnetic spin structures in ultrathin Pb films**
J. H. Dil, SLS Symposium on Magnetism in Reduced Dimensions, PSI, 03.03.09.
- **Rashba-type spin-orbit splitting of quantum well states in ultrathin Pb films (Poster)**
J. H. Dil, Symposium on Surface Science (3S'09), St. Moritz, 12.03.09.
- **Fermi surface of graphene on Ru(0001)**
T. Brugger, March Meeting of the American Physical Society, Pittsburgh, PA, USA, 16.03.09.
- **Unconventional Fermi surface spin textures in the Bi-Pb-Sb/Ag(111) surface alloy**
F. Meier, Frühjahrstagung der Deutschen Physikalischen Gesellschaft, Dresden, 26.03.09.
- **Rashba-type spin-orbit splitting in quantum well states in ultrathin Pb films**
J. H. Dil, Frühjahrstagung der Deutschen Physikalischen Gesellschaft, Dresden, 26.03.09.

Invited lectures

- T. Greber: **Near-node photoelectron holography**
SLS Symposium on Diffraction and Phase Retrieval, PSI, 01.04.08.

- J. H. Dil: **Influence of the interface on electron confinement in thin metal films**
Seminar, Physics Department, EPFL, Lausanne, 11.04.08.
- J. Osterwalder: **Monolagen von hexagonalem Bornitrid: das isolierende Pendant zum Graphene**
Physik-Kolloquium, Universität Kaiserslautern, Germany, 16.06.08.
- M. Hengsberger: **Time-resolved photoelectron spectroscopy from ferromagnetic surfaces**
XI-th Symposium on Surface Physics, Prague, Czech Republic, 01.07.08.
- T. Greber: **Nanomesh: yesterday, today and in the future**
EU-STREP NanoMesh Final Meeting, Orscholz, Germany, 23.06.08.
- T. Greber: **Single sheets of boron nitride sp^2 networks: from flat layers to nanomesh**
International Workshop on Nanomaterials and Nanodevices, Chinese Academy of Sciences Session, Beijing, China, 02.07.08.
- T. Greber: **The conformation matters: from molecular chains and switches to chiral recognition**
International Workshop on Nanomaterials and Nanodevices, Kunming Session, Kunming, China, 05.07.08.
- T. Greber: **Surface trapping of atoms and molecules with dipole rings**
Seminar, Key Laboratory of Metastable Science and Technology, Qinhuandao, China, 18.07.08.
- J. Osterwalder: **Hexagonal boron nitride layers as templates for molecular organization**
MONET and iNANO PhD School "Molecular Organization and Function on Surfaces", Aarhus, Denmark, 11.09.08.
- T. Greber: **See them, and see them move: towards time resolved electron scattering**
Workshop on Surface Diffraction and Spectroscopic Methods for Nanoscience, Trieste, Italy, 03.10.08.
- J. Osterwalder: **Quantitative three-dimensional spin polarimetry in ARPES**
55th Meeting of the American Vacuum Society, Boston, MA, USA, 22.10.08.
- T. Greber: **Single-layer dielectrics**
Rencontre Nationale Matière Condensée et Modélisation des Systèmes (MCMS 2008), Fès, Morocco, 27.10.08.
- T. Greber: **Boron nitride nanomesh: a robust template for molecule and cluster arrays**
56th IUVSTA Workshop on Template Mediated Growth of Nanostructures, Schlaining, Austria, 03.11.08.
- T. Greber: **Trapping molecules on graphene and hexagonal boron nitride single layers**
Seminar, Sandoghdar Group, Physical Chemistry Department, ETH Zürich, 21.11.08
- M. Hengsberger: **Time-resolved photoemission from h-BN/Ni(111)**
Seminar, Max-Planck-Institut für Mikrostrukturphysik, Halle, Germany, 23.10.08.
- T. Greber: **Production of h-BN single layers**
Seminar, Hong Kong University of Science and Technology, China, 19.01.08.
- M. Hengsberger: **Time- (and angle-) resolved (two-photon) photoelectron spectroscopy**
SLS Workshop on the Spectroscopy of Novel Materials, Rigi, 20.01.09.

- M. Hengsberger: **Two-photon photoemission experiments from diamondoid monolayers**
Seminar, Institut für Festkörperphysik, Forschungszentrum Karlsruhe, Germany, 29.01.09.
- T. Greber: **Corrugated sp^2 hybridized layer templates for molecules**
Symposium on Surface and Nano Science (SSNS-09), Shizukuishi, Japan, 29.01.09.
- T. Greber: **Absolute determination of molecular conformation by angle-scanned photoelectron diffraction (XPD)**
Seminar, Institute of Solid State Physics ISSP, University of Tokyo, Japan, 05.02.09.
- M. Hengsberger: **Crazy idea or scientific case ? - time-resolved photoelectron spectroscopy at x-ray energies using a time-of-flight spectrometer with spin filter**
PSI-XFEL Workshop on Crazy Ideas and Challenges, PSI, 27.02.09.
- J. Osterwalder: **Photoelectrons and materials properties**
Symposium "Headways in Materials Science", EMPA Dübendorf, 06.03.09.
- J. H. Dil: **Time-, spin-, space- and angle-resolved photoemission on correlated materials**
PSI-XFEL Workshop on Correlated Systems, Universität Zürich, 06.03.09.
- J. Osterwalder: **Measuring spin polarization vectors in ARPES**
Hauptvortrag, Frühjahrstagung der Deutschen Physikalischen Gesellschaft, Dresden, 26.03.09.

17.2.4 Physics of Biological systems

Article in press

- **Simultaneous reconstruction of phase and amplitude contrast from a single holographic record**
T. Latychevskaia and H.-W. Fink, Optics Express.

Bachelor and Master theses

- **Gepulste Elektronenholographie**
Matthias Germann, Master thesis.
- **Die Bindungsenergie von Wasser an DNA**
Flavio Lanfranconi, Bachelorarbeit.
- **Messung der Temperaturabhängigkeit der Desorptionsrate von Schwerwasser auf verschiedenen Substraten mittels Thermodesorptionsspektroskopie**
Fabian Hobrecker, Bachelorarbeit.
- **Optische Holographie einer geladenen Wolframspitze**
Florian Schwarz, Bachelorarbeit.

PhD thesis

- **Quantification of the Gating Charge in K⁺ and Na⁺ Ion Channels by Use of eGFP Fluorescence**
Dominik Grögler, PhD thesis.

Presentations

- **Vom Schattenbild zum Hologramm**
Elvira Steinwand, Jean-Nicolas Longchamp, Florian Schwarz, Flavio Lanfranconi and Tatiana Latychevskaia, demonstrations and talks at the "Nacht der Forschung 2008", Zurich Lake, 26 September 2008.
- **Holography with Low Energy Electrons - a brief status report (master thesis of Matthias Germann)**
Hans-Werner Fink, SIBMAR workshop, Brno, Czech Republic, 22-23 October 2008.
- **Hologram reconstruction and related issues**
Tatiana Latychevskaia, SIBMAR workshop, Brno, Czech Republic, 22-23 October 2008.
- **Coherent Diffraction - oversampling - micron sized electron optical lenses**
Elvira Steinwand and Jean-Nicolas Longchamp, SIBMAR workshop, Brno, Czech Republic, 22-23 October 2008.
- **DNA sample preparation issue discussion and update**
Eugen Ermantraut, Heinz Gross, Conrad Escher and Hans-Werner Fink, SIBMAR workshop, Brno, Czech Republic, 22-23 October 2008.
- **Efforts towards Atomic Resolution in Low Energy Electron Holography**
Matthias Germann, SIBMAR workshop in Lucerne, Switzerland, 26-29 January 2009.
- **Reconstruction of Low Energy Electron Holograms**
Tatiana Latychevskaia, SIBMAR workshop in Lucerne, Switzerland, 26-29 January 2009.
- **Coherent Diffraction with Low Energy Electrons**
Elvira Steinwand and Jean-Nicolas Longchamp, SIBMAR workshop in Lucerne, Switzerland, 26-29 January 2009.
- **Experiments with Individual DNA Molecules**
Conrad Escher, SIBMAR workshop in Lucerne, Switzerland, 26-29 January 2009.

17.2.5 Physical Systems Biology and non-equilibrium Soft Matter

Articles

- **Conservation of energy in coherent backscattering at large angles**
S. Fiebig, C.M. Aegerter, W. Bührer, M. Störzer, E. Akkermans, G. Montambaux, and G. Maret, Europhys. Lett. **81**, 64004 (2008).

- **Experimental study of the freely cooling granular gas**
C.C. Maass, N. Isert, G. Maret, and C.M. Aegerter, Phys. Rev. Lett. **100** 248001 (2008).
- **Universal optimal transmission of light through disordered materials**
I.M. Vellekoop and A.P. Mosk, Phys. Rev. Lett. **101**, 120601 (2008).
- **Spatial amplitude and phase modulation using commercial twisted nematic LCDs**
E.G. van Putten, I.M. Vellekoop, and A.P. Mosk, Applied Optics **47**, 2076 (2008).
- **Phase control algorithms for focusing light through turbid media**
I.M. Vellekoop and A.P. Mosk, Optics Communications **211**, 3071 (2008).
- **Coherent backscattering and localization of light**
C.M. Aegerter and G. Maret, Progress in Optics **52**, 1 (2009).
- **Influence of gravity on a granular Maxwell's demon experiment**
N. Isert, C.C. Maass, and C.M. Aegerter, Europ. Phys. J. E **28**, 205 (2009).

Articles in press

- **Velocity distributions of uniformly heated three dimensional granular gases**
C.C. Maass, G. Maret, and C.M. Aegerter.
- **Determination of mechanical stress in *Drosophila* wing imaginal discs using photoelasticity**
U. Nienhaus, T. Aegerter-Wilmsen, and C.M. Aegerter.
- **Effects of growth regulation by mechanical stress on epithelial topology**
T. Aegerter-Wilmsen, A. Christen, E. Hafen, C.M. Aegerter, and K. Basler.

Conference reports

- **Velocity distributions in levitated granular gases (poster)**
C.C. Maass, N. Isert, G. Maret, and C.M. Aegerter, Gordon conference on granular and granular fluid flow, Colby college, USA, June 22nd - 27th 2008.
- **Levitated granular gases**
C.C. Maass, N. Isert, G. Maret, and C.M. Aegerter, Workshop of the European graduate college in soft condensed matter, Strasbourg, France, September 15th - 17th 2008.
- **Dynamics of levitated foams**
N. Isert, R. Straub, G. Maret, and C.M. Aegerter, Workshop of the European graduate college in soft condensed matter, Strasbourg, France, September 15th - 17th 2008.
- **Monodisperse Spherical Nano-Particles for Optical Application**
S. Shafaei, W. Bührer, S. Fiebig, G. Maret, and C.M. Aegerter, Workshop of the European graduate college in soft condensed matter, Strasbourg, France, September 15th - 17th 2008.
- **Coherent backscattering at small angles**
S. Fiebig, W. Bührer, G. Maret, and C.M. Aegerter, Workshop of the European graduate college in soft condensed matter, Strasbourg, France, September 15th - 17th 2008.

- **Teaching quantitative Biology (poster)**
C.M. Aegerter, Systemsbiology URPP retreat, Monte Verita, Switzerland, October 12-15 2008.
- **Forces in the wing imaginal disc of *Drosophila melanogaster* (poster)**
T. Schluck, I.M. Vellekoop and C.M. Aegerter, All SystemsX-Day, Basel, Switzerland, October 16, 2008.
- **Anderson localization of light. (poster)**
W. Bührer, S. Fiebig, G. Maret, and C.M. Aegerter, Symposium 50 years of Anderson localization, Paris, France, December 4th - 5th 2008.
- **Dynamics of Diamagnetically Levitated Foams (poster)**
N. Isert, R. Straub, G. Maret, and C.M. Aegerter, Workshop 'Frontiers in soft matter', Les Houches, France, February 15th - 20th 2009.
- **Improvement of Synthesized Titania Particles for Anderson Localization Experiments (poster)**
S. Shafaei, W. Bührer, S. Fiebig, G. Maret, and C.M. Aegerter, Workshop 'Frontiers in soft matter', Les Houches, France, February 15th - 20th 2009.

Invited lectures

- C.M. Aegerter: **Transport and localization of light in disordered systems**
Summer School of the Karlsruher School of Optics and Photonics, Bad Herrenalb, Germany, 20.08.2008.
- C.M. Aegerter: **Coherent backscattering and Anderson localization of light**
International Conference on Quantum Optics and Quantum Information, Vilnius, Lithuania, 20.09.2008.
- C.M. Aegerter: **Levitated granular gases**
Deutsches Luft- und Raumfahrtzentrum, Köln, Germany, 18.11.2008.
- I.M. Vellekoop: **Universal optimal transmission of light through disordered materials**
Physics@FOM, Veldhoven, The Netherlands, 20.01.2009.
- C.M. Aegerter: **Levitated granular gases**
Workshop 'Frontiers in soft matter', Les Houches, France, 20.02.2009.

17.2.6 Miscellaneous

- H. Keller: **Physik ist überall - faszinierende Experimente aus dem Alltag**
Demonstrationsvorlesung, 175-Jahr Feier, MNF-Tag, Universität Zürich, Zürich, Switzerland, April 19, 2008.
- H. Keller: **Hochtemperatur-Supraleitung - 20 Jahre danach**
Talk, Studentenhaus Allenmoos, Zürich, Switzerland, April 23, 2008.