

## 21 Publications

### 21.1 Theoretical physics

#### 21.1.1 Elementary particles

##### Articles

- A framework for Higgs characterisation  
P. Artoisenet, P. Aquino, F. Demartin, R. Frederix, S. Frixione, F. Maltoni, M.K. Mandal, P. Mathews, K. Mawatari, V. Ravindran, S. Seth, P. Torrielli, and M. Zaro, JHEP 1311 (2013) 043.
- Light-quark two-loop corrections to heavy-quark pair production in the gluon fusion channel  
R. Bonciani, A. Ferroglia, T. Gehrmann, A. Manteuffel, and C. Studerus, JHEP 1312 (2013) 38.
- Soft-gluon resummation for single particle inclusive hadroproduction at high transverse momentum  
S. Catani, M. Grazzini, and A. Torre, Nucl. Phys. **B874** (2013) 720.
- Dimensional reduction without continuous extra dimensions  
A.H. Chamseddine, J. Fröhlich, B. Schubnel, and D. Wyler, J. of Math. Phys. 54 (2013) 012302.
- Infrared structure at NNLO using antenna subtraction  
J. Currie, E.W.N. Glover, and S. Wells, JHEP 1304 (2013), 066.
- The two-loop soft current in dimensional regularization  
C. Duhr and T. Gehrmann, Phys. Lett. **B 727** (2013) 452.
- 84 - Probing top quark electromagnetic dipole moments in single-top-plus-photon production  
M. Fael and T. Gehrmann, Phys. Rev. **D 88** (2013) 033003.
- Higgs production through vector-boson fusion at the NLO matched with parton showers  
S. Frixione, P. Torrielli, and M. Zaro, Phys. Lett. **B 726** 273.
- Photon isolation effects at NLO in  $\gamma+\gamma$ +jet final states in hadronic collisions  
T. Gehrmann, N. Greiner, and G. Heinrich, JHEP 1306 (2013) 058.
- Precise QCD predictions for the production of a photon pair in association with two jets  
T. Gehrmann, N. Greiner, and G. Heinrich, Phys. Rev. Lett. 111 (2013) 222002.
- NLO QCD matrix elements + parton showers in  $e+e-$  to hadrons  
T. Gehrmann, S. Höche, F. Krauss, M. Schönherr, and F. Siegert, JHEP 1301 (2013) 144.
- Power corrections in the dispersive model for a determination of the strong coupling constant from the thrust distribution  
T. Gehrmann, G. Luisoni, and P.F. Monni, Eur. Phys. J. C 73 (2013) 2265.
- Two-loop master integrals for  $q\bar{q} \rightarrow VV$ : the planar topologies  
T. Gehrmann, L. Tancredi, and E. Weihs, JHEP 1308 (2013) 070.
- Two-loop QCD helicity amplitudes for  $gg$  to  $Z g$  and  $gg$  to  $Z\gamma$   
T. Gehrmann, L. Tancredi, and E. Weihs, JHEP 1304 (2013) 101.
- Second-order QCD corrections to jet production at hadron colliders: the all-gluon contribution  
A. Gehrmann-De Ridder, T. Gehrmann, E.W.N. Glover, and J. Pires, Phys. Rev. Lett. 110 (2013) 162003.
- Higgs boson self-coupling measurements using ratios of cross sections  
F. Goertz, A. Papaefstathiou, L.J. Yang, and J. Zurita, JHEP 1306 (2013) 016.
- Heavy-quark mass effects in Higgs boson production at the LHC  
M. Grazzini and H. Sargsyan, JHEP (2013) 129.
- Probing the colour structure of the top quark forward-backward asymmetry  
B. Gripaios, A. Papaefstathiou, and B. Webber, JHEP 13011 (2013) 105.

- Complete three-loop QCD corrections to the decay Higgs to gamma gamma  
P. Maierhöfer and P. Marquard, Phys. Lett. **B** 721 (2013) 131.
- Higgs boson pair production at the LHC in the  $bb \rightarrow W^+W^-$  channel  
A. Papaefstathiou, L. Yang, and J. Zurita, Phys. Rev. **D** 87 (2013) 011301(R).

#### Theses

- Resummation of Jet Observables  
Pier Francesco Monni, PhD thesis, 26.4.2013
- Dark Higgs Studies and Diboson Production at the Large Hadron Collider  
Erich Weihs, PhD thesis, 15.8.2013
- Transverse Parton Distribution Functions at Next-to-next-to-leading Order  
Thomas Lübbert, PhD thesis, 27.10.2013
- Electromagnetic dipole moments of fermions  
Matteo Fael, PhD thesis 17.3.2014

#### Oral Presentations

- Philipp Maierhöfer: Automatic one-loop calculations with OpenLoops  
ACAT 2013 Conference, Beijing, 18.05.2013
- Philipp Maierhöfer: Status of OpenLoops and simulation of  $H \rightarrow WW$  backgrounds  
RADCOR 2013 Conference, Durham, 24.09.2013
- Philipp Maierhöfer: NLO automation with OpenLoops and applications to  $H \rightarrow WW$  and  $ttH$  backgrounds  
Seminar, Karlsruhe, 15.11.2013
- Philipp Maierhöfer: Predictions for  $H \rightarrow WW$  background in exclusive jet bins with Sherpa+OpenLoops  
Helmholtz Alliance Workshop *Physics at the Terascale*, Karlsruhe, 02.12.2013
- Philipp Maierhöfer: Predictions for  $H \rightarrow WW$  background in exclusive jet bins with Sherpa+OpenLoops  
LHCPhenoNet Meeting, CERN, 03.12.2013
- Thomas Gehrmann: Precision physics with jet observables  
Kolloquium Freiburg, 18.06.2013
- Thomas Gehrmann: Jet physics at NNLO  
KITP LHC Workshop, Santa Barbara, 11.07.2013
- Thomas Gehrmann: Hard QCD  
QCD@LHC, DESY Hamburg, 02.09.2013
- Thomas Gehrmann: Precision physics with jet observables  
Kolloquium Nikhef Amsterdam, 17.10.2013
- Thomas Gehrmann: Status of QCD  
Annual Theory Meeting, IPPP Durham, 16.12.2013
- Thomas Gehrmann: Precision Physics with Jet Observables  
Colloquium, Univ. Roma *La Sapienza*, 27.1.2014
- Thomas Gehrmann: Theory Summary  
49th Rencontres de Moriond: *QCD and High Energy Interactions*, La Thuile, 29.3.2014
- Massimiliano Grazzini: QCD and Higgs physics: theoretical issues  
Rencontres de Physique de la Vallée d'Aoste, La Thuile, Italy

- Massimiliano Grazzini: Uncertainties in Higgs boson production  
LHC Workshop, Genova, Italy, May 8 2013.
- Massimiliano Grazzini: Mass effects in the Higgs pt spectrum  
ATLAS Higgs meeting, CERN, June 2013.
- Massimiliano Grazzini: The Higgs boson one year later  
Seminar Lyon, October 29, 2013.
- Massimiliano Grazzini: The Higgs boson one year later  
Seminar Munich, October 24, 2013.
- Massimiliano Grazzini: Higgs pt with Hres  
ATLAS workshop, CERN, December 16, 2013.
- Paolo Torrielli: Issues with the PYTHIA8 shower, status, and EW MC counterterms  
ERC miniworkshop, CERN, 05-06/08/2013.
- Paolo Torrielli: Status of parton showers at NLO  
ERC miniworkshop, CERN, 03-06/12/2013.
- Fabio Cascioli: NLO automation with OpenLoops and irreducible bkg to  $H \rightarrow WW$   
LHCPhenoNet Workshop, Buenos Aires, 24.04.2013
- Fabio Cascioli: NLO automation with OpenLoops and irreducible bkg to  $H \rightarrow WW$   
LoopFest XII, Tallahassee (Florida), 14.05.2013
- Fabio Cascioli: NLO automation with OpenLoops and new results for  $H \rightarrow WW$  irreducible bkg  
PhD Seminars - ETH, Zurich, 29.08.2013
- Fabio Cascioli: Merging NLO and squared-loop corrections to four-lepton+0,1 jet with Sherpa+OpenLoops  
QCD@LHC 2013, DESY-Hamburg, 04.09.2013
- James Currie: antenna subtraction from outer (colour) space  
LHCPhenonet fellows meeting, Buenos Aires, 23/4/2013
- James Currie: integrated antenna dipoles  
seminar, IPPP Durham, 24/5/2013
- James Currie: colourful antenna subtraction for gluon scattering  
RADCOR'13, Lumley Castle, 24/9/2013
- James Currie: NNLO corrections to jet production  
LHCPhenonet annual meeting, CERN, 4/12/2013
- Lorenzo Tancredi: Towards two-loop corrections to vector boson pair production at LHC  
Theory Seminar, University of Mainz, 6.05.2013
- Lorenzo Tancredi: Towards two-loop corrections to vector boson pair production at LHC  
Particle Physics Seminar, MPI Munich, 4.07.2013
- Lorenzo Tancredi: Towards two-loop corrections to vector boson pair production at LHC  
Zurich PhD Seminar, ETH/UZH Zurich, 30.08.2013
- Lorenzo Tancredi: Towards two-loop QCD corrections to ZZ and WW production at LHC  
RADCOR 2013, Durham, 23.09.2013
- Lorenzo Tancredi: Progressi nel calcolo dei grafici di Feynman  
Theory Seminar, University of Bologna, 7.10.2013

- Lorenzo Tancredi: Methods for multi-loop computations  
lecture series, Discussion meeting on radiative corrections, Institute of Physics, Bhubaneswar, India, March 5-10 2014
- Stefano Pozzorini: Automated NLO calculations with OpenLoops  
The first three years of the LHC, Mainz, 20.3.2103
- Stefano Pozzorini: MEPS@NLO predictions for  $H \rightarrow WW$  background in exclusive jet bins  
LHCP2013, Barcelona, 14.5.2013
- Stefano Pozzorini: ttH(bb) backgrounds with Sherpa+OpenLoops  
ttH Atlas Workshop, CERN, Geneva, 25.6.2013
- Stefano Pozzorini: Precise predictions for ttH(bb) backgrounds with Sherpa+OpenLoops  
RADCOR2013, Lumely Castle, 22-27.9.2013
- Stefano Pozzorini: ttbar+heavy-flavour modelling with Sherpa+OpenLoops  
ATLAS Higgs WG (N)NLO MC and Tools Workshop for LHC Run2, CERN, Geneva, 16.12.2013
- Stefano Pozzorini: Precise predictions for ttH(bb) backgrounds with Sherpa+OpenLoops  
RADCOR2013, Lumely Castle, 22-27.9.2013
- Stefano Pozzorini: ttbar+heavy-flavour modelling with Sherpa+OpenLoops  
ATLAS Higgs WG (N)NLO MC and Tools Workshop for LHC Run2, CERN, Geneva, 16.12.2013
- Stefano Pozzorini: Matching and merging of parton showers and matrix elements  
Autumn School on Particle Physics and Cosmology, Göttingen, 7-11.10.2103
- Hayk Sargsyan: Heavy-quark mass effects in Higgs production  
Higgs Hunting 2013, Paris, 26 July 2013
- Hayk Sargsyan: Heavy-quark mass effects in Higgs production  
LHCPhenoNet annual meeting, CERN, Geneva, 03 Dec. 2013
- Adrian Signer: Testing the Standard Model and waiting for Godot  
2013 CHIPP Annual Plenary Meeting, Sursee, 24 June 2013
- Adrian Signer: Effective-theory approach to off-shell effects at hadron colliders  
KIT Karlsruhe, theory seminar, 11 July 2013
- Stefan Kallweit: Off-shell top-pair production at NLO QCD with massive bottoms  
RADCOR 2013, Lumely Castle, 22-27.9.2013
- Stefan Kallweit: NNLO corrections to gauge-boson pair production: first results on  $Z\gamma$   
seminar, University of Freiburg, 12.11.2013
- Jonas Lindert: Combining squark production and decay at NLO QCD  
LHCPhenoNet Annual Meeting, CERN, 2-5.12.2013
- Marius Wiesemann: Transverse momentum resummation for supersymmetric Higgs production  
LHCPhenoNet annual meeting, CERN, December 2-5, 2013
- Alessandro Torre: Soft gluon effects in four parton hard-scattering processes  
LHCPhenoNet Workshop on Particle Physics, Buenos Aires, 23-26 April 2013
- Alessandro Torre: Soft Gluon Effects in Four Parton Hard-Scattering Processes  
RADCOR 2013, Durham, 22-27 September 2013
- Dirk Rathlev: Progress towards vector boson pair production in NNLO QCD  
RADCOR 2013, Lumely Castle, UK, 23.9.2013

- Dirk Rathlev: Vector boson pair production in NNLO QCD  
LHCPhenonet meeting, CERN, 2.12.2013
- Dirk Rathlev: Status of Vgamma production in NNLO QCD  
Terascale Alliance meeting, KIT, Karlsruhe, 3.12.2013

### 21.1.2 Astrophysics and General Relativity

#### Articles

- Intensity interferometry with more than two detectors?  
V. Malvimat, O. Wucknitz, and P. Saha, *MNRAS*437 (2014) 798.
- Mass-galaxy offsets in Abell 3827, 2218 and 1689: intrinsic properties or line-of-sight substructures?  
I. Mohammed, J. Liesenborgs, P. Saha, and L.L.R. Williams, *MNRAS*439 (2014) 2651.
- Spacecraft clocks and relativity: Prospects for future satellite missions  
R. Angéilil, P. Saha, R. Bondarescu, P. Jetzer, A. Schärer, and A. Lundgren, *Phys Rev D*89(6) (2014) 064067.
- Cosmological parameter determination in free-form strong gravitational lens modelling  
M. Lubini, M. Sereno, J. Coles, P. Jetzer and P. Saha, *MNRAS*437 (2014) 2461.
- Effective-one-body Hamiltonian with next-to-leading order spin-spin coupling for two nonprecessing black holes with aligned spins  
S. Balmelli and P. Jetzer, *Phys Rev D*87(12) (2013) 124036.
- The LISA Pathfinder Mission  
P. McNamara, F. Antonucci, M. Armano, H. Audley, G. Auger, M. Benedetti, P. Binétruy, J. Bogenstahl, D. Bortoluzzi, N. Brandt, M. Caleno, A. Cavalleri, G. Congedo, M. Cruise, K. Danzmann, F. De Marchi, M. Diaz-Aguilo, I. Diepholz, G. Dixon, R. Dolesi, N. Dumbar, J. Fauste, L. Ferraioli, V. Ferroni, W. Fichter, E. Fitzsimons, M. Freschi, C. Garcia Marirrodriga, R. Gerndt, L. Gesa, F. Gibert, D. Giardini, C. Grimaldi, A. Grynagier, F. Guzmán, I. Harrison, G. Heinzel, M. Hewitson, D. Hollington, D. Hoyland, M. Hueller, J. Huesler, O. Jennrich, P. Jetzer, B. Johlander, N. Karnesis, N. Korsakova, N. Killow, X. Llamas, I. Lloro, A. Lobo, R. Maarschalkerweerd, S. Madden, D. Mance, V. Martin, I. Mateos, J. Mendes, E. Mitchell, D. Nicolodi, M. Nofrarias, M. Perreux-Lloyd, E. Plagnol, P. Prat, J. Ramos-Castro, J. Reiche, J. Romera Perez, D. A. Robertson, H. Rozemeijer, G. Russano, A. Schleicher, D. Shaul, C.F. Sopena, T. J. Sumner, A. Taylor, D. Texier, C. Trenkel, H.B. Tu, S. Vitale, G. Wanner, H. Ward, S. Waschke, P. Wass, D. Wealthy, S. Wen, W. Weber, T. Ziegler, and P. Zweifel,  
in: *The LISA Pathfinder Mission*, G. Auger, P. Binétruy and E. Plagnol, editors, *Astronomical Society of the Pacific Conference Series*, 467 (2013) 5.
- State Space Modelling and Data Analysis Exercises in LISA Pathfinder  
M. Nofrarias, F. Antonucci, M. Armano, H. Audley, G. Auger, M. Benedetti, P. Binétruy, J. Bogenstahl, D. Bortoluzzi, N. Brandt, M. Caleno, A. Cavalleri, G. Congedo, M. Cruise, K. Danzmann, F. De Marchi, M. Diaz-Aguilo, I. Diepholz, G. Dixon, R. Dolesi, N. Dumbar, J. Fauste, L. Ferraioli, V. Ferroni, W. Fichter, E. Fitzsimons, M. Freschi, C. Garcia Marirrodriga, R. Gerndt, L. Gesa, F. Gibert, D. Giardini, C. Grimaldi, A. Grynagier, F. Guzmán, I. Harrison, G. Heinzel, M. Hewitson, D. Hollington, D. Hoyland, M. Hueller, J. Huesler, O. Jennrich, P. Jetzer, B. Johlander, N. Karnesis, N. Korsakova, N. Killow, X. Llamas, I. Lloro, A. Lobo, R. Maarschalkerweerd, S. Madden, D. Mance, V. Martin, I. Mateos, J. Mendes, E. Mitchell, D. Nicolodi, M. Nofrarias, M. Perreux-Lloyd, E. Plagnol, P. Prat, J. Ramos-Castro, J. Reiche, J. Romera Perez, D. A. Robertson, H. Rozemeijer, G. Russano, A. Schleicher, D. Shaul, C.F. Sopena, T. J. Sumner, A. Taylor, D. Texier, C. Trenkel, H.B. Tu, S. Vitale, G. Wanner, H. Ward, S. Waschke, P. Wass, D. Wealthy, S. Wen, W. Weber, T. Ziegler, and P. Zweifel,  
*9th LISA Symposium*, *Astronomical Society of the Pacific Conference Series*, 467 (2013) 161.
- Power Spectrum of Gravitational Waves from Unbound Compact Binaries  
L. De Vittori, P. Jetzer, and A. Klein,  
*9th LISA Symposium*, *Astronomical Society of the Pacific Conference Series*, 467 (2013) 331.

- The M31 Pixel Lensing PLAN Campaign: MACHO Lensing and Self-lensing Signals  
S. Calchi Novati, V. Bozza, I. Bruni, M. Dall’Ora, F. De Paolis, M. Dominik, R. Gualandi, G. Ingrosso, P. Jetzer, L. Mancini, A. Nucita, M. Safonova, G. Scarpetta, M. Sereno, F. Strafella, A. Subramaniam, and A. Gould, (A. PLAN Collaboration), *ApJ*783 (2014) 86.
- MOND and IMF variations in early-type galaxies from ATLAS<sup>3D</sup>  
C. Tortora, A.J. Romanowsky, V. F. Cardone, N. R. Napolitano, and P. Jetzer, *MNRAS*438 (2014) L46.
- eLISA: Astrophysics and cosmology in the millihertz regime  
P. Amaro-Seoane, S. Aoudia, S. Babak, P. Binétruy, E. Berti, A. Bohé, C. Caprini, M. Colpi, N.J. Cornish, K. Danzmann, J.F. Dufaux, J. Gair, I. Hinder, O. Jennrich, P. Jetzer, A. Klein, R.N. Lang, A. Lobo, T. Littenberg, S.T. McWilliams, G. Nelemans, A. Petiteau, E.K. Porter, B.F. Schutz, A. Sesana, R. Stebbins, T. Sumner, M. Vallisneri, S. Vitale, M. Volonteri, H. Ward, and B. Wardell, *GW Notes* 6, 4.
- Microlensing towards the SMC: a new analysis of OGLE and EROS results  
S. Calchi Novati, S. Mirzoyan, P. Jetzer, and G. Scarpetta, *MNRAS*435 (2013) 1582.

#### Oral Presentations

- Philippe Jetzer: 20 Years of Gravitational Microlensing  
ICRANet Scientific Meeting on Rel. Astrophysics, Pescara (Italy), June 2013.
- Philippe Jetzer: STE-QUEST and the Einstein Equivalence Principle  
GR20-Amaldi Meeting, Warsaw (Poland), July 2013.
- Philippe Jetzer: Gravitational Wave Detection from Space  
Int. Conf. on New Frontiers in Physics, Crete (Greece), August 2013.
- Philippe Jetzer: Gravitationslinsen und Dunkle Materie im Universum  
Kolloquium University of Wuppertal, October 2013.

89

### 21.1.3 Miscellaneous

#### Article

- The brief time-reversibility of the local Lyapunov exponents for a small chaotic Hamiltonian system  
F. Waldner, W.G. Hoover and C.G. Hoover, *Chaos, Solitons & Fractals* **60** (2014) 68.

## 21.2 Elementary particles and their interactions

### 21.2.1 GERDA

#### Articles

- The Background in the Neutrinoless Double Beta Decay Experiment GERDA  
M. Agostini, M. Allardt, E. Andreotti, A.M. Bakalyarov, M. Balata, I. Barabanov, M. Barnabe Heider, N. Barros, L. Baudis, C. Bauer *et al.* (GERDA Collaboration), *Eur. Phys. J. C*74, 2764 (2014).
- Pulse Shape Discrimination for GERDA Phase I Data  
M. Agostini, M. Allardt, E. Andreotti, A.M. Bakalyarov, M. Balata, I. Barabanov, M. Barnabe Heider, N. Barros, L. Baudis, C. Bauer *et al.* (GERDA Collaboration), *Eur. Phys. J. C*73 2583 (2013).
- Monte Carlo Studies for the Calibration System of the GERDA Experiment  
L. Baudis, A.D. Ferella, F. Froberg, M. Tarka, *Nucl. Instrum. Meth. A*729, 557-564 (2013).
- Results on Neutrinoless Double-Beta Decay of Ge76 from Phase I of the GERDA Experiment  
M. Agostini, M. Allardt, E. Andreotti, A.M. Bakalyarov, M. Balata, I. Barabanov, M. Barnabe Heider, N. Barros, L. Baudis, C. Bauer *et al.* (GERDA Collaboration), *Phys. Rev. Lett.* 111, 122503 (2013).

- Isotopically Modified Ge Detectors for Gerda: from Production to Operation  
D. Budjas, M. Agostini, L. Baudis, E. Bellotti, *et al.*, JINST 8, P04018 (2013).

#### Lectures and oral presentations

- L. Baudis: The Unbearable Lightness of Neutrinos  
Colloquium Paco Yndurain, UA Madrid, December 4, 2013.
- M. Walter: The GERDA Experiment for the Search of Neutrinoless Double Beta Decay  
Seminar on Particle and Astrophysics Uni Zurich, 16 October 2013.
- G. Benato: Search of Neutrinoless Double beta decay with the GERDA Experiment  
From Majorana to LHC, Workshop on the Origin of Neutrino Mass, ICTP, 2-5 October 2013.
- G. Benato: Search of Neutrinoless Double Beta Decay with the GERDA Experiment  
Joint Annual Meeting of OPG, SPS, OGAA and SGAA, Linz, 3-6 September 2013.
- M. Walter: The GERDA Experiment for the Search of Neutrinoless Double Beta Decay  
Patras Workshop, Schloss Waldthausen, July 27 2013.

#### 21.2.2 XENON/DARWIN

##### Articles

90

- Analysis of the XENON100 Dark Matter Search Data  
E. Aprile, M. Alfonsi, K. Arisaka, F. Arneodo, C. Balan, L. Baudis, B. Bauermeister, *et al.* (XENON Collaboration),  
Astropart. Phys. 54 11-24 (2014).
- Signatures of Dark Matter Scattering Inelastically Off Nuclei  
L. Baudis, G. Kessler, P. Klos, R. F. Lang, J. Menendez, S. Reichard, and A. Schwenk, Phys. Rev. D88, 115014 (2013).
- Observation and Applications of Single-Electron Charge Signals in the XENON100 Experiment  
E. Aprile, M. Alfonsi, K. Arisaka, F. Arneodo, C. Balan, L. Baudis, B. Bauermeister, *et al.* (XENON Collaboration),  
J. Phys. G: Nucl. Part. Phys. 41, 035201 (2014).
- Neutrino Physics with Multi-Ton Scale Liquid Xenon Detectors  
L. Baudis, A. Ferella, A. Kish, A. Manalaysay, T. Marrodan Undagoitia, M. Schumann,  
J. Cosmol. Astropart. Phys. 01, 044 (2014).
- The Neutron Background of the XENON100 Dark Matter Experiment  
E. Aprile, M. Alfonsi, K. Arisaka, F. Arneodo, C. Balan, L. Baudis, B. Bauermeister, *et al.* (XENON Collaboration),  
J. Phys. G: Nucl. Part. Phys. 40, 115201 (2013).
- Response of the XENON100 Dark Matter Detector to Nuclear Recoils  
E. Aprile, M. Alfonsi, K. Arisaka, F. Arneodo, C. Balan, L. Baudis, B. Bauermeister, *et al.* (XENON Collaboration),  
Phys. Rev. D 88, 012006 (2013).
- Response of Liquid xenon to Compton Electrons Down to 1.5 keV  
L. Baudis, H. Dujmovic, C. Geis, A. James, A. Kish, A. Manalaysay, T. Marrodan Undagoitia, M. Schumann,  
Phys. Rev. D 87, 115015 (2013).
- Performance of the Hamamatsu R11410 Photomultiplier Tube in Cryogenic Xenon Environments  
L. Baudis, A. Behrens, A. Ferella, A. Kish, T. Marrodan Undagoitia, D. Mayani, M. Schumann,  
JINST 8 (2013) P04026.
- Limits on Spin-Dependent WIMP-nucleon Cross Sections from 225 live days of XENON100 Data  
E. Aprile, M. Alfonsi, K. Arisaka, F. Arneodo, C. Balan, L. Baudis, B. Bauermeister, *et al.* (XENON Collaboration),  
Phys. Rev. Lett. 111, 021301 (2013).

## Lectures and oral presentations

- L. Baudis: Dark Matter Design Study  
APPEC general meeting, Paris, February 27, 2014.
- L. Baudis: Underground Physics  
DESY Zeuthen, November 4, 2013.
- L. Baudis: Noble Liquids  
APPEC SAC meeting, Paris, October 15, 2013.
- L. Baudis: WIMP Dark Matter Direct-Detection Searches in Noble Gases  
TAUP 2013, Asilomar, September 10, 2013.
- L. Baudis: Direct WIMP Searches: an Update  
SUSY meeting, ICTP Trieste, August 29, 2013.
- L. Baudis: Dark Matter: Direct Searches for WIMPs  
EPS-HEP meeting, Stockholm, July 23, 2013.
- L. Baudis: First results on the Neutrinoless Double Beta Decay from GERDA  
Invisibles workshop, Durham, July 17, 2013.
- L. Baudis: Searching for Dark Matter with XENON100, XENON1T and DARWIN  
Seminar, Queens University, Kingston, July 2, 2013.
- L. Baudis: XENON100, XENON1T and DARWIN  
CHIPP plenary meeting, Campus Sursee, June 26, 2013.
- L. Baudis: Searching for Dark Matter with XENON  
Seminar, LBNL, Berkeley, April 30, 2013.
- L. Baudis: XENON100 Direct Detection Results and Status of XENON1T  
Seminar, KITP, Santa Barbara, April 24, 2013.
- L. Baudis: Direct Dark Matter Detection in the Milky Way  
Physics Colloquium, Oskar Klein Centre for Cosmoparticle Physics, Stockholm, April 9, 2013.
- M. Auger: XENON and DARWIN R&D in Switzerland  
2nd CHIPP Workshop on Detector R&D, PSI, September 13 2013.
- A. Kish: Dark Matter Search with the XENON100 Experiment  
16th Lomonosov Conference on Elementary Particle Physics, Moscow State University, August 24, 2013.
- A. Behrens: Recent Results from the XENON Experiment  
EPS-HEP 2013, Stockholm, Sweden, July 18th, 2013.
- A. Kish: Dark Matter Search with the XENON100 Experiment  
Latsys Symposium, June 5, 2013.

## Outreach

- L. Baudis: Die dunkle Seite des Universums  
SKL Liechtenstein, January 30, 2014.
- L. Baudis: Die dunkle Seite des Universums  
Seniorenforum Werdenberg, Buchs, November 19, 2013.

## PhD thesis

- Light Detectors for the XENON100 and XENON1T Dark Matter Search Experiments  
A. Behrens, PhD thesis, Universität Zürich, 2013.



### 21.2.3 CTA

#### Articles

- Introducing the CTA concept  
B.S. Acharya *et al.* (CTA Consortium), *Astroparticle Physics* **43** (2013) 3.

#### Conference contributions

- G. Ambrosi *et. al.*: The Cherenkov Telescope Array Large Size Telescope  
33rd International Cosmic Ray Conference (ICRC2013), Rio de Janeiro (Brazil), arXiv:1307.4565v1 [astro-ph.IM].
- G. Pühlhofer *et. al.*: FlashCam: A fully digital camera for the Cherenkov Telescope Array  
33rd International Cosmic Ray Conference (ICRC2013), Rio de Janeiro (Brazil), arXiv:1307.3677v1 [astro-ph.IM].

#### PhD thesis

- Towards the First Imaging Atmospheric Cherenkov Telescope Camera with Continuous Signal Digitization  
A. Gadola, PhD thesis, Universität Zürich, 2013.

### 21.2.4 H1

#### Articles

- Measurement of Charged Particle Spectra in Deep-Inelastic  $ep$  Scattering at HERA  
H1-Collaboration, C. Alexa *et al.*, *Eur. Phys. J. C* **73** (2013), 2406.
- Elastic and Proton Dissociative  $J/\Psi$ -Meson Photoproduction at HERA  
H1-Collaboration, C. Alexa *et al.*, *Eur. Phys. J. C* **73** (2013), 2466.
- Measurement of Inclusive  $ep$  Cross Sections at High  $Q^2$  at  $\sqrt{s} = 225$  and  $252$  GeV and of the Longitudinal Proton Structure Function  $F_L$  at HERA  
H1-Collaboration, V. Andreev *et al.*, *Eur. Phys. J. C* **74** (2014), 2814.

### 21.2.5 LHCb

#### Articles

- Search for Majorana neutrinos in  $B^- \rightarrow \pi^+ \mu^- \mu^-$  decays  
LHCb-Collaboration, R. Aaij *et al.*, *Phys. Rev. Lett.* **112** (2014) 131802.
- Updated measurements of exclusive  $J/\psi$  and  $\psi(2S)$  production cross-sections in  $pp$  collisions at  $\sqrt{s} = 7$  TeV  
LHCb-Collaboration, R. Aaij *et al.*, *J. Phys. G* **41** (2014) 055002.
- Studies of beauty baryon decays to  $D^0 p h^-$  and  $\Lambda_c^+ h^-$  final states  
LHCb-Collaboration, R. Aaij *et al.*, *Phys. Rev. D* **89** (2014) 032001.
- Measurement of the  $\bar{B}_s^0 \rightarrow D_s^- D_s^+$  and  $\bar{B}_s^0 \rightarrow D^- D_s^+$  effective lifetimes  
LHCb-Collaboration, R. Aaij *et al.*, *Phys. Rev. Lett.* **112** (2014) 111802.
- Study of forward  $Z$  plus jet production in  $pp$  collisions at  $\sqrt{s} = 7$  TeV  
LHCb-Collaboration, R. Aaij *et al.*, *JHEP* **1401** (2014) 033.
- Search for CP violation in the decay  $D^+ \rightarrow \pi^- \pi^+ \pi^+ s$   
LHCb-Collaboration, R. Aaij *et al.*, *Phys. Lett. B* **728** (2014) 585.
- Measurements of indirect CP asymmetries in  $D^0 \rightarrow K^- K^+$  and  $D^0 \rightarrow \pi^- \pi^+$  decays  
LHCb-Collaboration, R. Aaij *et al.*, *Phys. Rev. Lett.* **112** (2014) 011801.

- Search for the doubly charmed baryon  $\Xi_{cc}^+$   
LHCb-Collaboration, R. Aaij *et al.*, JHEP **1312** (2013) 090.
- Measurement of CP violation in the phase space of  $B^\pm \rightarrow K^+ K^- \pi^\pm$  and  $B^\pm \rightarrow \pi^+ \pi^- \pi^\pm$  decays,  
LHCb-Collaboration, R. Aaij *et al.*, Phys. Rev. Lett. **112** (2014) 011801.
- Search for the decay  $D^0 \rightarrow \pi^+ \pi^- \mu^+ \mu^-$   
LHCb-Collaboration, R. Aaij *et al.*, Phys. Lett. B **728** (2014) 234.
- Measurement of  $D^0$ - $\bar{D}^0$  mixing parameters and search for CP violation using  $D^0 \rightarrow K^+ \pi^-$  decays  
LHCb-Collaboration, R. Aaij *et al.*, Phys. Rev. Lett. **111** (2013) 251801.
- Measurement of the charge asymmetry in  $B^\pm \rightarrow \phi K^\pm$  and search for  $B^\pm \rightarrow \phi \pi^\pm$  decays  
LHCb-Collaboration, R. Aaij *et al.*, Phys. Lett. B **728** (2014) 85.
- First observation of  $\bar{B}^0 \rightarrow J/\psi K^+ K^-$  and search for  $\bar{B}^0 \rightarrow J/\psi \phi$  decays  
LHCb-Collaboration, R. Aaij *et al.*, Phys. Rev. D **88** (2013) 072005.
- Observation of the decay  $B_s^0 \rightarrow \bar{D}^0 \phi$   
LHCb-Collaboration, R. Aaij *et al.*, Phys. Lett. B **727** (2013) 403.
- Observation of the decay  $B_c^+ \rightarrow B_s^0 \pi^+$   
LHCb-Collaboration, R. Aaij *et al.*, Phys. Rev. Lett. **111** (2013) 181801.
- Model-independent search for CP violation in  $D^0 \rightarrow K^- K^+ \pi^- \pi^+$  and  $D^0 \rightarrow \pi^- \pi^+ \pi^+ \pi^-$  decays  
LHCb-Collaboration, R. Aaij *et al.*, Phys. Lett. B **726** (2013) 623.
- Measurement of form-factor independent observables in the decay  $B^0 \rightarrow K^{*0} \mu^+ \mu^-$   
LHCb-Collaboration, R. Aaij *et al.*, Phys. Rev. Lett. **111** (2013) 191801.
- First measurement of time-dependent CP violation in  $B_s^0 K^+ K^-$  decays  
LHCb-Collaboration, R. Aaij *et al.*, JHEP **1310** (2013) 183.
- Measurement of the CP asymmetry in  $B^+ \rightarrow K^+ \mu^+ \mu^-$  decays  
LHCb-Collaboration, R. Aaij *et al.*, Phys. Rev. Lett. **111** (2013) 151801.
- Observation of  $B_s^0$ - $\bar{B}_s^0$  mixing and measurement of mixing frequencies using semileptonic B decays  
LHCb-Collaboration, R. Aaij *et al.*, Eur. Phys. J. C **73** (2013) 2655.
- Branching fraction and CP asymmetry of the decays  $B^+ \rightarrow K_S^0 \pi^+$  and  $B^+ \rightarrow K_S^0 K^+$   
LHCb-Collaboration, R. Aaij *et al.*, Phys. Lett. B **726** (2013) 646.
- Measurement of the flavour-specific CP-violating asymmetry  $a_{sl}^s$  in  $B_s^0$  decays  
LHCb-Collaboration, R. Aaij *et al.*, Phys. Lett. B **728** (2014) 607.
- First evidence for the two-body charmless baryonic decay  $B^0 \rightarrow p \bar{p}$   
LHCb-Collaboration, R. Aaij *et al.*, JHEP **1310** (2013) 005.
- Study of  $B_{(s)}^0 \rightarrow K_S^0 h^+ h'^-$  decays with first observation of  $B_s^0 \rightarrow K_S^0 K^\pm \pi^\mp$  and  $B_s^0 \rightarrow K_S^0 \pi^+ \pi^-$   
LHCb-Collaboration, R. Aaij *et al.*, JHEP **1310** (2013) 143.
- Observation of a resonance in  $B^+ \rightarrow K^+ \mu^+ \mu^-$  decays at low recoil  
LHCb-Collaboration, R. Aaij *et al.*, Phys. Rev. Lett. **111** (2013) 11, 112003.
- Measurement of  $J/\psi$  polarization in  $pp$  collisions at  $\sqrt{s} = 7$  TeV  
LHCb-Collaboration, R. Aaij *et al.*, Eur. Phys. J. C **73** (2013) 2631.
- Studies of the decays  $B^+ \rightarrow p \bar{p} h^+$  and observation of  $B^+ \rightarrow \bar{\Lambda}(1520) p$   
LHCb-Collaboration, R. Aaij *et al.*, Phys. Rev. D **88** (2013) 052015.
- Measurement of the  $B_s^0 \rightarrow \mu^+ \mu^-$  branching fraction and search for  $B^0 \rightarrow \mu^+ \mu^-$  decays at the LHCb experiment  
LHCb-Collaboration, R. Aaij *et al.*, Phys. Rev. Lett. **111** (2013) 101805.

- Search for the lepton-flavor violating decays  $B_s^0 \rightarrow e^\pm \mu^\mp$  and  $B^0 \rightarrow e^\pm \mu^\mp$   
LHCb-Collaboration, R. Aaij *et al.*, Phys. Rev. Lett. **111** (2013) 141801.
- Measurement of the relative rate of prompt  $\chi_{c0}$ ,  $\chi_{c1}$  and  $\chi_{c2}$  production at  $\sqrt{s} = 7$  TeV  
LHCb-Collaboration, R. Aaij *et al.*, JHEP **1310** (2013) 115.
- Measurement of the polarization amplitudes in  $B^0 \rightarrow J/\psi K^*(892)^0$  decays  
LHCb-Collaboration, R. Aaij *et al.*, Phys. Rev. D **88** (2013) 052002.
- Precision measurement of the  $\Lambda_b^0$  baryon lifetime  
LHCb-Collaboration, R. Aaij *et al.*, Phys. Rev. Lett. **111** (2013) 102003.
- Measurement of B meson production cross-sections in proton-proton collisions at  $\sqrt{s} = 7$  TeV  
LHCb-Collaboration, R. Aaij *et al.*, JHEP **1308** (2013) 117.
- Measurement of the differential branching fraction of the decay  $\Lambda_b^0 \rightarrow \Lambda \mu^+ \mu^-$   
LHCb-Collaboration, R. Aaij *et al.*, Phys. Lett. B **725** (2013) 25.
- First observation of the decay  $B_s^0 \rightarrow \phi \bar{K}^{*0}$   
LHCb-Collaboration, R. Aaij *et al.*, JHEP **1311** (2013) 092.
- Measurement of CP violation in the phase space of  $B^\pm \rightarrow K^\pm \pi^+ \pi^-$  and  $B^\pm \rightarrow K^\pm K^+ K^-$  decays  
LHCb-Collaboration, R. Aaij *et al.*, Phys. Rev. Lett. **111** (2013) 101801.
- Observation of  $B_s^0 \rightarrow \chi_{c1} \phi$  decay and study of  $B^0 \rightarrow \chi_{c1,2} K^{*0}$  decays  
LHCb-Collaboration, R. Aaij *et al.*, Nucl. Phys. B **874** (2013) 663.
- Search for the rare decay  $D^0 \rightarrow \mu^+ \mu^-$ ,  
LHCb-Collaboration, R. Aaij *et al.*, Phys. Lett. B **725** (2013) 15.
- Differential branching fraction and angular analysis of the decay  $B_s^0 \rightarrow \phi \mu^+ \mu^-$   
LHCb-Collaboration, R. Aaij *et al.*, JHEP **1307** (2013) 084.
- Measurement of the CKM angle  $\gamma$  from a combination of  $B^\pm \rightarrow Dh^\pm$  analyses  
LHCb-Collaboration, R. Aaij *et al.*, Phys. Lett. B **726** (2013) 151.
- Production of  $J/\psi$  and  $Y$  mesons in  $pp$  collisions at  $\sqrt{s} = 8$  TeV  
LHCb-Collaboration, R. Aaij *et al.*, JHEP **1306** (2013) 064.
- Precision measurement of  $D$  meson mass differences  
LHCb-Collaboration, R. Aaij *et al.*, JHEP **1306** (2013) 065.
- Search for  $D_{(s)}^+ \rightarrow \pi^+ \mu^+ \mu^-$  and  $D_{(s)}^+ \rightarrow \pi^- \mu^+ \mu^+$  decays  
LHCb-Collaboration, R. Aaij *et al.*, Phys. Lett. B **724** (2013) 203.
- Differential branching fraction and angular analysis of the decay  $B^0 \rightarrow K^{*0} \mu^+ \mu^-$   
LHCb-Collaboration, R. Aaij *et al.*, JHEP **1308** (2013) 131.
- Measurement of the branching fractions of the decays  $B_s^0 \rightarrow \bar{D}^0 K^- \pi^+$  and  $B^0 \rightarrow \bar{D}^0 K^+ \pi^-$   
LHCb-Collaboration, R. Aaij *et al.*, Phys. Rev. D **87** (2013) 11, 112009.
- First observation of CP violation in the decays of  $B_s^0$  mesons  
LHCb-Collaboration, R. Aaij *et al.*, Phys. Rev. Lett. **110** (2013) 22, 221601.
- Precision measurement of the  $B_s^0$ - $\bar{B}_s^0$  oscillation frequency with the decay  $B_s^0 \rightarrow D_s^- \pi^+$   
LHCb-Collaboration, R. Aaij *et al.*, New J. Phys. **15** (2013) 053021.
- Observation of  $B_c^+ \rightarrow J/\psi D_s^+$  and  $B_c^+ \rightarrow J/\psi D_s^{*+}$  decays  
LHCb-Collaboration, R. Aaij *et al.*, Phys. Rev. D **87** (2013) 11, 112012.
- Searches for violation of lepton flavour and baryon number in tau lepton decays at LHCb  
LHCb-Collaboration, R. Aaij *et al.*, Phys. Lett. B **724** (2013) 36.

- Measurement of the effective  $B_s^0 \rightarrow J/\psi K_S^0$  lifetime  
LHCb-Collaboration, R. Aaij *et al.*, Nucl. Phys. B **873** (2013) 275.
- Measurement of the  $B^0 \rightarrow K^{*0} e^+ e^-$  branching fraction at low dilepton mass  
LHCb-Collaboration, R. Aaij *et al.*, JHEP **1305** (2013) 159.
- Measurement of CP violation and the  $B_s^0$  meson decay width difference with  $B_s^0 \rightarrow J/\psi K^+ K^-$  and  $B_s^0 \rightarrow J/\psi \pi^+ \pi^-$  decays  
LHCb-Collaboration, R. Aaij *et al.*, Phys. Rev. D **87** (2013) 11, 112010.
- Limits on neutral Higgs boson production in the forward region in  $pp$  collisions at  $\sqrt{s} = 7$  TeV  
LHCb-Collaboration, R. Aaij *et al.*, JHEP **1305** (2013) 132.
- Measurements of the branching fractions of  $B^+ \rightarrow p \bar{p} K^+$  decays  
LHCb-Collaboration, R. Aaij *et al.*, Eur. Phys. J. C **73** (2013) 2462.
- First measurement of the CP-violating phase in  $B_s^0 \rightarrow \phi \phi$  decays  
LHCb-Collaboration, R. Aaij *et al.*, Phys. Rev. Lett. **110** (2013) 24, 241802 [arXiv:1303.7125].
- Study of  $B^0 \rightarrow D^{*-} \pi^+ \pi^- \pi^+$  and  $B^0 \rightarrow D^{*0} K^+ \pi^- \pi^+$  decays  
LHCb-Collaboration, R. Aaij *et al.*, Phys. Rev. D **87** (2013) 092001.
- Search for CP violation in  $D^+ \rightarrow \phi \pi^+$  and  $D_s^+ \rightarrow K_S^0 \pi^+$  decays  
LHCb-Collaboration, R. Aaij *et al.*, JHEP **1306** (2013) 112.
- Observation of the suppressed ADS modes  $B^\pm \rightarrow [\pi^\pm K^\mp \pi^+ \pi^-]_D K^\pm$  and  $B^\pm \rightarrow [\pi^\pm K^\mp \pi^+ \pi^-]_D \pi^\pm$   
LHCb-Collaboration, R. Aaij *et al.*, Phys. Lett. B **723** (2013) 44.
- Search for direct CP violation in  $D^0 \rightarrow h^- h^+$  modes using semileptonic  $B$  decays  
LHCb-Collaboration, R. Aaij *et al.*, Phys. Lett. B **723** (2013) 33.
- Observation of the decay  $B_c^+ \rightarrow \psi(2S) \pi^+$   
LHCb-Collaboration, R. Aaij *et al.*, Phys. Rev. D **87** (2013) 071103.
- Search for rare  $B_{(s)}^0 \rightarrow \mu^+ \mu^- \mu^+ \mu^-$  decays  
LHCb-Collaboration, R. Aaij *et al.*, Phys. Rev. Lett. **110** (2013) 211801.
- Search for the decay  $B_s^0 \rightarrow D^{*\mp} \pi^\pm$   
LHCb-Collaboration, R. Aaij *et al.*, Phys. Rev. D **87** (2013) 071101.
- First observations of  $\bar{B}_s^0 \rightarrow D^+ D^-$ ,  $D_s^+ D^-$  and  $D^0 \bar{D}^0$  decays  
LHCb-Collaboration, R. Aaij *et al.*, Phys. Rev. D **87** (2013) 9, 092007.
- Measurements of the  $\Lambda_b^0 \rightarrow J/\psi \Lambda$  decay amplitudes and the  $\Lambda_b^0$  polarisation in  $pp$  collisions at  $\sqrt{s} = 7$  TeV  
LHCb-Collaboration, R. Aaij *et al.*, Phys. Lett. B **724** (2013) 27.
- Amplitude analysis and the branching fraction measurement of  $\bar{B}_s^0 \rightarrow J/\psi K^+ K^-$   
LHCb-Collaboration, R. Aaij *et al.*, Phys. Rev. D **87** (2013) 7, 072004.
- Measurement of the  $\Lambda_b^0$ ,  $\Xi_b^-$  and  $\Omega_b^-$  baryon masses  
LHCb-Collaboration, R. Aaij *et al.*, Phys. Rev. Lett. **110** (2013) 182001.
- Measurement of the fragmentation fraction ratio  $f_s/f_d$  and its dependence on  $B$  meson kinematics  
LHCb-Collaboration, R. Aaij *et al.*, JHEP **1304** (2013) 001.
- Electroweak Physics, QCD and Jets in the Forward Region  
N. Chiapolini *et al.*, Acta Physica Polonica B, **44**(7):1385.

articles in press

- Angular analysis of charged and neutral  $B \rightarrow K \mu^+ \mu^-$  decays  
LHCb-Collaboration, R. Aaij *et al.*, arXiv:1403.8045.

- Differential branching fractions and isospin asymmetries of  $B \rightarrow K^{(*)}\mu^+\mu^-$  decays  
LHCb-Collaboration, R. Aaij *et al.*, arXiv:1403.8044.
- Study of beauty hadron decays into pairs of charm hadrons  
LHCb-Collaboration, R. Aaij *et al.*, arXiv:1403.3606.
- Measurement of polarization amplitudes and  $CP$  asymmetries in  $B^0 \rightarrow \phi K^*(892)^0$   
LHCb-Collaboration, R. Aaij *et al.*, arXiv:1403.2888.
- Measurement of  $\psi(2S)$  polarisation in  $pp$  collisions at  $\sqrt{s} = 7$  TeV  
LHCb-Collaboration, R. Aaij *et al.*, arXiv:1403.1339.
- Observation of photon polarization in the  $b \rightarrow s\gamma$  transition  
LHCb-Collaboration, R. Aaij *et al.*, arXiv:1402.6852.
- Measurement of resonant and  $CP$  components in  $\bar{B}_s^0 \rightarrow J/\psi\pi^+\pi^-$  decays  
LHCb-Collaboration, R. Aaij *et al.*, arXiv:1402.6248.
- Precision measurement of the ratio of the  $\Lambda_b^0$  to  $\bar{B}^0$  lifetimes  
LHCb-Collaboration, R. Aaij *et al.*, arXiv:1402.6242.
- Measurement of charged particle multiplicities and densities in  $pp$  collisions at  $\sqrt{s} = 7$  TeV in the forward region  
LHCb-Collaboration, R. Aaij *et al.*, arXiv:1402.4430.
- A study of  $CP$  violation in  $B^\pm \rightarrow DK^\pm$  and  $B^\pm \rightarrow D\pi^\pm$  decays with  $D \rightarrow K_S^0 K^\pm \pi^\mp$  final states  
LHCb-Collaboration, R. Aaij *et al.*, arXiv:1402.2982.
- 96 - Measurements of the  $B^+$ ,  $B^0$ ,  $B_s^0$  meson and  $\Lambda_b^0$  baryon lifetimes  
LHCb-Collaboration, R. Aaij *et al.*, arXiv:1402.2554.
- Measurement of  $Y$  production in  $pp$  collisions at  $\sqrt{s} = 2.76$  TeV  
LHCb-Collaboration, R. Aaij *et al.*, arXiv:1402.2539.
- Searches for  $\Lambda_b^0$  and  $\Xi_b^0$  decays to  $K_S^0 p \pi^-$  and  $K_S^0 p K^-$  final states with first observation of the  $\Lambda_b^0 \rightarrow K_S^0 p \pi^-$  decay  
LHCb-Collaboration, R. Aaij *et al.*, arXiv:1402.0770.
- Measurement of the  $B_c^+$  meson lifetime using  $B_c^+ \rightarrow J/\psi\mu^+\nu_\mu X$  decays  
LHCb-Collaboration, R. Aaij *et al.*, arXiv:1401.6932.
- Observation of associated production of a  $Z$  boson with a  $D$  meson in the forward region  
LHCb-Collaboration, R. Aaij *et al.*, arXiv:1401.3245.
- Observation of  $B_{(s)}^0 \rightarrow J/\psi f_1(1285)$  decays and measurement of the  $f_1(1285)$  mixing angle  
LHCb-Collaboration, R. Aaij *et al.*, arXiv:1310.2145.

#### Conference contributions

- Albert Bursche: New LHCb measurement:  $Z$  plus  $D$  meson cross section  
The top charm frontier at the LHCb, 14 January 2014, CERN, Switzerland
- Albert Bursche: Measurements with electroweak gauge bosons at LHCb  
MPI@LHC, 2 - 6 December 2013, Antwerp, Belgium
- Christian Elsasser: The LHCb Silicon Tracker  
13th Topical Seminar on Innovative Particle and Radiation Detectors, 7 - 10 October, Siena, Italy
- Jonathan Anderson: Latest results on  $Z$  boson production from LHCb  
LHC seminar, 8 October 2013, CERN, Switzerland
- Olaf Steinkamp: LHCb overview talk  
16th Lomonosov Conference on Elementary Particle Physics, 22 - 28 August 2013, Moscow, Russia

- Espen E. Bowen: Studies of the electroweak penguin transitions and radiative  $B$  decays at LHCb  
DPF 13, 13 - 17 August 2013, Santa Cruz, USA
- Christian Elsasser: Latest results on  $B_s/B_d \rightarrow \mu\mu$  from CMS and LHCb  
Collider Cross Talk, 25 July 2013, CERN, Switzerland
- Nicola Serra: Studies of the electroweak penguin transitions  $b_s \rightarrow \mu\mu$  and  $b_d \rightarrow \mu\mu$  at LHCb  
EPS, 17 - 24 July 2013, Stockholm, Sweden
- Christian Elsasser: LHCb physics results  
2013 CHIPP Annual Plenary Meeting, 25 June 2013, Sursee, Switzerland
- Katharina Müller: Results and prospects on central exclusive production at LHCb  
Low-x workshop, 30 May - 4 June 2013, Rehovot and Eilat, Israel
- Christian Elsasser: Rare decays  
Large Hadron Collider Physics Conference, 13 - 18 May, 2013, Barcelona, Spain
- Marco Tresch: Rare decays at LHCb  
Phenomenology Symposium, 6 - 8 May 2013, Pittsburgh, USA

#### Public notes and technical reports

- LHCb Tracker Upgrade Technical Design Report  
LHCb collaboration, CERN-LHCC-2014-001 ; LHCb-TDR-015
- LHCb VELO Upgrade Technical Design Report  
LHCb collaboration, CERN-LHCC-2013-021 ; LHCb-TDR-013
- LHCb PID Upgrade Technical Design Report  
LHCb collaboration, CERN-LHCC-2013-022 ; LHCb-TDR-014
- VeloUT tracking for the LHCb Upgrade  
E. Bowen, B. Storacci, LHCb-PUB-2013-023; CERN-LHCb-PUB-2013-023

#### PhD thesis

- Track Reconstruction Efficiency and Analysis of  $B^0 \rightarrow K^{*0}\mu^+\mu^-$  at the LHCb Experiment  
Michel De Cian, PhD Thesis, Universität Zürich, 2013

### 21.2.6 CMS

#### Articles (including those in press)

- Measurement of the t-channel single-top-quark production cross section and of the  $|V_{tb}|$  CKM matrix element in pp collisions at  $\sqrt{s} = 8$  TeV  
V. Khachatryan *et al.* [CMS Collaboration], arXiv:1403.7366 [hep-ex].
- Measurement of WZ and ZZ production in pp collisions at  $\sqrt{s} = 8$  TeV in final states with b-tagged jets  
S. Chatrchyan *et al.* [CMS Collaboration], arXiv:1403.3047 [hep-ex].
- Alignment of the CMS tracker with LHC and cosmic ray data  
S. Chatrchyan *et al.* [CMS Collaboration], arXiv:1403.2286 [physics.ins-det].
- Studies of exotic hadrons at Tevatron and LHC  
V. Chiochia *et al.* [CDF and CMS and D0 and LHCb Collaborations], arXiv:1403.0823 [hep-ex].
- Search for new physics in the multijet and missing transverse momentum final state in proton-proton collisions at  $\sqrt{s} = 8$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], arXiv:1402.4770 [hep-ex].

- Measurements of the  $t\bar{t}$  charge asymmetry using the dilepton decay channel in pp collisions at  $\sqrt{s} = 7$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], arXiv:1402.3803 [hep-ex].
- Search for  $W'$  to tb decays in the lepton + jets final state in pp collisions at  $\sqrt{s} = 8$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], arXiv:1402.2176 [hep-ex].
- Measurement of the production cross sections for a Z boson and one or more b jets in pp collisions at  $\sqrt{s} = 7$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], arXiv:1402.1521 [hep-ex].
- Measurement of inclusive W and Z boson production cross sections in pp collisions at  $\sqrt{s} = 8$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], arXiv:1402.0923 [hep-ex].
- Evidence for the direct decay of the 125 GeV Higgs boson to fermions  
S. Chatrchyan *et al.* [CMS Collaboration], arXiv:1401.6527 [hep-ex].
- Evidence for the 125 GeV Higgs boson decaying to a pair of  $\tau$  leptons  
S. Chatrchyan *et al.* [CMS Collaboration], arXiv:1401.5041 [hep-ex].
- Studies of dijet pseudorapidity distributions and transverse momentum balance in pPb collisions at  $\sqrt{s_{NN}}=5.02$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], arXiv:1401.4433 [nucl-ex].
- Observation of the associated production of a single top quark and a W boson in pp collisions at  $\sqrt{s} = 8$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], arXiv:1401.2942 [hep-ex].
- Measurement of the  $t\bar{t}$  production cross section in the dilepton channel in pp collisions at  $\sqrt{s} = 8$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], arXiv:1312.7582 [hep-ex], JHEP **1402**, 024 (2014).
- 98 - Measurement of the production cross section for a W boson and two b jets in pp collisions at  $\sqrt{s} = 7$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], arXiv:1312.6608 [hep-ex].
- Measurement of four-jet production in proton-proton collisions at  $\sqrt{s}=7$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], arXiv:1312.6440 [hep-ex].
- Event activity dependence of  $Y(nS)$  production in  $\sqrt{s[NN]}=5.02$  TeV pPb and  $\sqrt{s}=2.76$  TeV pp collisions  
S. Chatrchyan *et al.* [CMS Collaboration], arXiv:1312.6300 [nucl-ex].
- Measurement of the muon charge asymmetry in inclusive  $pp \rightarrow W + X$  production at  $\sqrt{s}=7$  TeV and an improved determination of light parton distribution functions  
S. Chatrchyan *et al.* [CMS Collaboration], arXiv:1312.6283 [hep-ex].
- Study of double parton scattering using  $W + 2$ -jet events in proton-proton collisions at  $\sqrt{s} = 7$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], JHEP **1403**, 032 (2014).
- Measurement of the properties of a Higgs boson in the four-lepton final state  
S. Chatrchyan *et al.* [CMS Collaboration], arXiv:1312.5353 [hep-ex].
- Evidence of b-jet quenching in PbPb collisions at  $\sqrt{s_{NN}} = 2.76$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], arXiv:1312.4198 [nucl-ex].
- Search for flavor-changing neutral currents in top-quark decays  $t \rightarrow Zq$  in pp collisions at  $\sqrt{s}=8$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], arXiv:1312.4194 [hep-ex].
- Search for stop and higgsino production using diphoton Higgs boson decays  
S. Chatrchyan *et al.* [CMS Collaboration], arXiv:1312.3310 [hep-ex].
- Search for top-quark partners with charge 5/3 in the same-sign dilepton final state  
S. Chatrchyan *et al.* [CMS Collaboration], arXiv:1312.2391 [hep-ex].
- Studies of azimuthal dihadron correlations in ultra-central PbPb collisions at  $\sqrt{s_{NN}} = 2.76$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], JHEP **1402**, 088 (2014).

- Measurement of Higgs boson production and properties in the WW decay channel with leptonic final states  
S. Chatrchyan *et al.* [CMS Collaboration], JHEP **1401**, 096 (2014).
- Inclusive search for a vector-like T quark with charge  $\frac{2}{3}$  in pp collisions at  $\sqrt{s} = 8$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], Phys. Lett. B **729**, 149 (2014).
- Search for new physics in events with same-sign dileptons and jets in pp collisions at  $\sqrt{s} = 8$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], JHEP **1401**, 163 (2014).
- Measurement of the triple-differential cross section for photon+jets production in proton-proton collisions at  $\sqrt{s}=7$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], arXiv:1311.6141 [hep-ex].
- Probing color coherence effects in pp collisions at  $\sqrt{s} = 7$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], arXiv:1311.5815 [hep-ex].
- Search for pair production of excited top quarks in the lepton+jets final state  
S. Chatrchyan *et al.* [CMS Collaboration], arXiv:1311.5357 [hep-ex].
- Search for supersymmetry in pp collisions at  $\sqrt{s} = 8$  TeV in events with a single lepton, large jet multiplicity, and multiple b jets  
S. Chatrchyan *et al.* [CMS Collaboration], arXiv:1311.4937 [hep-ex].
- Measurements of  $t\bar{t}$  spin correlations and top-quark polarization using dilepton final states in pp collisions at  $\sqrt{s} = 7$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], arXiv:1311.3924 [hep-ex].
- Searches for light- and heavy-flavour three-jet resonances in pp collisions at  $\sqrt{s} = 8$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], Phys. Lett. B **730**, 193 (2014).
- Measurement of higher-order harmonic azimuthal anisotropy in PbPb collisions at a nucleon-nucleon center-of-mass energy of 2.76 TeV  
S. Chatrchyan *et al.* [CMS Collaboration], arXiv:1310.8651 [nucl-ex].
- Measurement of the differential and double-differential Drell-Yan cross sections in proton-proton collisions at  $\sqrt{s} = 7$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], JHEP **1312**, 030 (2013).
- Jet and underlying event properties as a function of charged-particle multiplicity in proton-proton collisions at  $\sqrt{s} = 7$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], Eur. Phys. J. C **73**, 2674 (2013).
- Search for the standard model Higgs boson produced in association with a W or a Z boson and decaying to bottom quarks  
S. Chatrchyan *et al.* [CMS Collaboration], Phys. Rev. D **89**, 012003 (2014).
- Rapidity distributions in exclusive Z + jet and  $\gamma$  + jet events in pp collisions at  $\sqrt{s}=7$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], Phys. Rev. D **88**, 112009 (2013).
- Search for baryon number violation in top-quark decays  
S. Chatrchyan *et al.* [CMS Collaboration], Phys. Lett. B **731**, 173 (2014).
- Measurement of the cross section and angular correlations for associated production of a Z boson with b hadrons in pp collisions at  $\sqrt{s} = 7$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], JHEP **1312**, 039 (2013).
- Measurement of associated W + charm production in pp collisions at  $\sqrt{s} = 7$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], JHEP **1402**, 013 (2014).
- Modification of jet shapes in PbPb collisions at  $\sqrt{s_{NN}} = 2.76$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], Phys. Lett. B **730**, 243 (2014).
- Observation of a peaking structure in the  $J/\psi\phi$  mass spectrum from  $B^\pm \rightarrow J/\psi\phi K^\pm$  decays  
S. Chatrchyan *et al.* [CMS Collaboration], arXiv:1309.6920 [hep-ex].



- Searches for new physics using the  $t\bar{t}$  invariant mass distribution in pp collisions at  $\sqrt{s}=8\text{TeV}$   
S. Chatrchyan *et al.* [CMS Collaboration], Phys. Rev. Lett. **111**, 211804 (2013).
- Measurement of the production cross section for  $Z\gamma \rightarrow \nu\bar{\nu}\gamma$  in pp collisions at  $\sqrt{s} = 7$  TeV and limits on  $ZZ\gamma$  and  $Z\gamma\gamma$  triple gauge boson couplings  
S. Chatrchyan *et al.* [CMS Collaboration], JHEP **1310**, 164 (2013).
- Search for a new bottomonium state decaying to  $Y(1S)\pi^+\pi^-$  in pp collisions at  $\sqrt{s} = 8$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], Phys. Lett. B **727**, 57 (2013).
- Measurement of the  $W\gamma$  and  $Z\gamma$  inclusive cross sections in pp collisions at  $\sqrt{s} = 7$  TeV and limits on anomalous triple gauge boson couplings  
S. Chatrchyan *et al.* [CMS Collaboration], arXiv:1308.6832 [hep-ex].
- Measurement of the W-boson helicity in top-quark decays from  $t\bar{t}$  production in lepton+jets events in pp collisions at  $\sqrt{s} = 7$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], JHEP **1310**, 167 (2013).
- Angular analysis and branching fraction measurement of the decay  $B^0 \rightarrow K^{*0}\mu^+\mu^-$   
S. Chatrchyan *et al.* [CMS Collaboration], Phys. Lett. B **727**, 77 (2013).
- Search for top-squark pair production in the single-lepton final state in pp collisions at  $\sqrt{s} = 8$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], Eur. Phys. J. C **73**, 2677 (2013).
- Measurement of the prompt  $J/\psi$  and  $\psi(2S)$  polarizations in pp collisions at  $\sqrt{s} = 7$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], Phys. Lett. B **727**, 381 (2013).
- Search for a Higgs boson decaying into a Z and a photon in pp collisions at  $\sqrt{s} = 7$  and 8 TeV  
S. Chatrchyan *et al.* [CMS Collaboration], Phys. Lett. B **726**, 587 (2013).
- Measurement of the  $B(s)$  to  $\mu^+\mu^-$  branching fraction and search for  $B_0$  to  $\mu^+\mu^-$  with the CMS Experiment  
S. Chatrchyan *et al.* [CMS Collaboration], Phys. Rev. Lett. **111**, 101804 (2013).
- Measurement of the top-quark mass in all-jets  $t\bar{t}$  events in pp collisions at  $\sqrt{s} = 7$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], Eur. Phys. J. C **74**, 2758 (2014).
- Study of the production of charged pions, kaons, and protons in  $p\text{Pb}$  collisions at  $\sqrt{s_{NN}} = 5.02$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], arXiv:1307.3442 [hep-ex].
- Determination of the top-quark pole mass and strong coupling constant from the  $t\bar{t}$  production cross section in pp collisions at  $\sqrt{s} = 7$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], Phys. Lett. B **728**, 496 (2014).
- The performance of the CMS muon detector in proton-proton collisions at  $\sqrt{s} = 7$  TeV at the LHC  
S. Chatrchyan *et al.* [CMS Collaboration], JINST **8**, P11002 (2013).
- Search for top squarks in R-parity-violating supersymmetry using three or more leptons and b-tagged jets  
S. Chatrchyan *et al.* [CMS Collaboration], Phys. Rev. Lett. **111**, 221801 (2013).
- Energy calibration and resolution of the CMS electromagnetic calorimeter in pp collisions at  $\sqrt{s} = 7$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], JINST **8**, P09009 (2013).
- Measurement of the  $W^+W^-$  Cross section in  $pp$  Collisions at  $\sqrt{s} = 7$  TeV and Limits on Anomalous  $WW\gamma$  and  $WWZ$  couplings  
S. Chatrchyan *et al.* [CMS Collaboration], Eur. Phys. J. C **73**, 2610 (2013).
- Measurement of the hadronic activity in events with a Z and two jets and extraction of the cross section for the electroweak production of a Z with two jets in pp collisions at  $\sqrt{s} = 7$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], JHEP **1310**, 101 (2013).

- Measurement of neutral strange particle production in the underlying event in proton-proton collisions at  $\sqrt{s} = 7$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], Phys. Rev. D **88**, 052001 (2013).
- Study of exclusive two-photon production of  $W^+W^-$  in  $pp$  collisions at  $\sqrt{s} = 7$  TeV and constraints on anomalous quartic gauge couplings  
S. Chatrchyan *et al.* [CMS Collaboration], JHEP **1307**, 116 (2013).
- Search for gluino mediated bottom- and top-squark production in multijet final states in  $pp$  collisions at 8 TeV  
S. Chatrchyan *et al.* [CMS Collaboration], Phys. Lett. B **725**, 243 (2013).
- Multiplicity and transverse momentum dependence of two- and four-particle correlations in pPb and PbPb collisions  
S. Chatrchyan *et al.* [CMS Collaboration], Phys. Lett. B **724**, 213 (2013).
- Searches for long-lived charged particles in  $pp$  collisions at  $\sqrt{s}=7$  and 8 TeV  
S. Chatrchyan *et al.* [CMS Collaboration], JHEP **1307**, 122 (2013).
- Measurement of the ratio of the inclusive 3-jet cross section to the inclusive 2-jet cross section in  $pp$  collisions at  $\sqrt{s} = 7$  TeV and first determination of the strong coupling constant in the TeV range  
S. Chatrchyan *et al.* [CMS Collaboration], Eur. Phys. J. C **73**, 2604 (2013).
- Measurement of the  $\Lambda_b^0$  lifetime in  $pp$  collisions at  $\sqrt{s} = 7$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], JHEP **07**, 163 (2013).
- Measurement of masses in the  $t\bar{t}$  system by kinematic endpoints in  $pp$  collisions at  $\sqrt{s} = 7$  TeV  
S. Chatrchyan *et al.* [CMS Collaboration], Eur. Phys. J. C **73**, 2494 (2013).

#### Conference proceedings

- Operation of the CMS silicon tracker  
S. Taroni [for the CMS Collaboration], Proceedings of Science (RD13) 002.
- Searches for heavy resonances decaying to pairs of massive vector bosons in CMS  
A. Hinzmann [for the CMS Collaboration], Proceedings of EPSHEP 2013, PoS(EPS-HEP 2013)283 (2014).
- Performance of the current CMS pixel detector  
S. Taroni [for the CMS Collaboration], Proceedings of the 2013 IEEE-NSS symposium, CMS CR-2013/096.
- Studies of exotic hadrons at Tevatron and LHC  
V. Chiochia [for the CDF, CMS, D0 and LHCb Collaborations], arXiv:1403.0823, Proceedings of Science (Hadron 2013) 009.

#### Oral presentations

- F. Canelli: Results from the LHC  
2013 APS meeting, plenary invited talk, April 15, 2013, Denver, Colorado, USA.
- C. Lange: Measurement of  $W/Z$  boson + heavy quark production at ATLAS  
XXI International Workshop on Deep-Inelastic Scattering and Related Subjects (DIS 2013), 22-26 April 2013, Mar-seilles, France.
- F. Canelli: The wisdom of the matrix element method  
2013 Matrix Element Technique Workshop, invited talk, May 27, 2013, Bruxelles, Belgium.
- F. Canelli: The future of the multivariate analyses  
KITP Workshop on LHC physics, invited talk, July 31, 2013, Santa Barbara, California, USA.
- B. Kilminster: New resonant particle searches at CMS  
Frontiers of Science seminar, Kavli Institute, July 2013, Santa Barbara, California, USA.
- S. Taroni: CMS Physics Results  
2013 CHIPP Plenary Meeting, June 25, 2013, Campus Sursee, Switzerland.

- S. Taroni: CMS Silicon Tracker operations  
11<sup>th</sup> Int. Conference on Large Scale Applications and Radiation Hardness of Semiconductor Detectors, July 3-5, 2013, Florence, Italy.
- A. Hinzmann: Searches for heavy resonances decaying to pairs of massive vector bosons in CMS  
EPSHEP 2013, July 2013, Stockholm, Sweden, 2014.
- M. Verzetti: Search for Higgs bosons at CMS in final states containing a tau  
21<sup>st</sup> International Conference on Supersymmetry and Unification of Fundamental Interactions, August 26-31, 2013, ICTP Trieste, Italy.
- V. Chiochia: Heavy flavor physics with the CMS experiment  
Seminar, Frankfurt University, September 25-26, 2013, Darmstadt/Frankfurt, Germany.
- B. Kilminster: CCD detectors for dark matter searches  
2nd CHIPP Workshop on Detector R&D, PSI Villigen, September 2013, Switzerland.
- B. Kilminster: Upgrade of the CMS detector  
2nd CHIPP Workshop on Detector R&D, PSI Villigen, September 2013, Switzerland.
- V. Chiochia: The Large Hadron Collider and the Higgs boson: latest news from the energy frontier  
Public lecture given at the Uni-Turm, Zurich University, October 8, 2013, Zurich, Switzerland.
- S. Taroni: Performance of the CMS pixel detector  
IEEE Nuclear Science Symposium, October 28, 2013, Seoul, Korea.
- V. Chiochia: Production and spectroscopy of exotic hadrons at hadron colliders  
XV International conference on hadron spectroscopy, November 4-8, 2013, Nara, Japan.
- V. Chiochia: Heavy flavor physics with the CMS experiment  
Seminar, DESY Hamburg and DESY Zeuthen, November 19-20, 2013, Hamburg/Berlin, Germany.
- B. Kilminster: Secrets of the universe beyond the Higgs boson  
Antrittsvorlesung, University of Zurich, December 2013, Zurich, Switzerland.
- V. Chiochia: Heavy flavor physics with the CMS experiment  
Seminar, Purdue University, January 24, 2014, West-Lafayette, Indiana, USA.
- V. Chiochia: The CMS pixel detector: from design to discoveries  
Seminar, LMU University Munich, January 31, 2014, Munich, Germany.
- C. Galloni: Measurement of  $R = B(t \rightarrow Wb) / B(t \rightarrow Wq)$  in Top-quark-pair Decays using Dilepton Events  
XLIXth Rencontres de Moriond Electroweak, March 15, 22, 2014, La Thuile, Italy.
- V. Chiochia: Heavy flavor physics with the CMS experiment  
Seminar, Imperial College London, March 25, 2014, London, UK.

102

## PhD theses

- Measurement of the production cross section of prompt J/psi mesons in association with a W boson in pp collisions at  $\sqrt{s}=7$  TeV with the ATLAS detector  
C. Melachrinos, University of Chicago, CERN-THESIS-2013-204
- Study of the Associated Production of a Z Boson with b Hadrons in Proton-Proton Collisions with the CMS Experiment  
C. Favaro, University of Zürich, CMS TS-2013/057.

## 21.3 Condensed matter

### 21.3.1 Superconductivity and Magnetism

#### Articles

- Tuning the static spin-stripe phase and superconductivity in  $\text{La}_{2-x}\text{Ba}_x\text{CuO}_4$  ( $x = 1/8$ ) by hydrostatic pressure  
Z. Guguchia, A. Maisuradze, G. Ghambashidze, R. Khasanov, A. Shengelaya, and H. Keller,  
*New J. Phys.* **15**, 093005 (2013).
- Magnetic phase diagram of low-doped  $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$  thin films studied by low-energy muon-spin rotation  
E. Stilp, A. Suter, T. Prokscha, E. Morenzoni, H. Keller, B. M. Wojek, H. Luetkens, A. Gozar, G. Logvenov, and I. Božović, *Phys. Rev. B* **88**, 064419 (2013).
- Nonlinear pressure dependence of  $T_N$  in almost multiferroic  $\text{EuTiO}_3$   
Z. Guguchia, K. Caslin, R.K. Kremer, H. Keller, A. Shengelaya, A. Maisuradze, J.L. Bettis Jr, J. Köhler, A. Bussmann-Holder, and M.-H. Whangbo, *J. Phys.: Condens. Matter* **255**, 376002 (2013).
- The low temperature magnetic phase diagram of  $\text{Eu}_x\text{Sr}_{1-x}\text{TiO}_3$   
Z. Guguchia, H. Keller, A. Bussmann-Holder, J. Köhler, and R.K. Kremer, *Eur. Phys. J. B* **86**, 409 (2013).
- Magnetic structure of superconducting  $\text{Eu}(\text{Fe}_{0.82}\text{Co}_{0.18})_2\text{As}_2$  as revealed by single-crystal neutron diffraction  
W.T. Jin, S. Nandi, Y. Xiao, Y. Su, O. Zaharko, Z. Guguchia, Z. Bukowski, S. Price, W.H. Jiao, G.H. Cao, and T. Bruckel, *Phys. Rev. B* **88**, 4516 (2013).
- Evidence for Cooper pair diffraction on the vortex lattice of superconducting niobium  
A. Maisuradze, A. Yaouanc, R. Khasanov, A. Amato, C. Baines, D. Herlach, R. Henes, P. Keppler, and H. Keller, *Phys. Rev. B* **88**, 140509(R) (2013).
- Photo-induced persistent inversion of germanium in a 200-nm-deep surface region  
T. Prokscha, K. H. Chow, E. Stilp, A. Suter, H. Luetkens, E. Morenzoni, G. J. Nieuwenhuys, Z. Salman, and R. Scheuermann, *Scientific Reports* **3**, 2569 (2013).
- Pressure Effects in the Iron Chalcogenides  
M. Bendele, E. Pomjakushina, K. Conder, R. Khasanov, and H. Keller,  
*J. Supercond. Nov. Magn.*, published online 14 November 2013.
- Effect of pressure on the Cu and Pr magnetism in  $\text{Nd}_{1-x}\text{Pr}_x\text{Ba}_2\text{Cu}_3\text{O}_{7-\delta}$  investigated by muon spin rotation  
A. Maisuradze, B. Graneli, Z. Guguchia, A. Shengelaya, E. Pomjakushina, K. Conder, and H. Keller,  
*Phys. Rev. B* **87**, 054401 (2013).
- Oxygen stoichiometry of low-temperature synthesized metastable  $T'$ - $\text{La}_2\text{CuO}_4$   
R. Hord, F. Pascua, K. Hofmann, G. Cordier, J. Kurian, H. Luetkens, V. Pomjakushin, M. Reehuis, B. Albert, and L. Alff, *Supercond. Sci. Technol.* **26**, 105026 (2013).
- Low temperature ballistic spin transport in the  $S=1/2$  antiferromagnetic Heisenberg chain compound  $\text{SrCuO}_2$   
H. Maeter, A.A. Zvyagin, H. Luetkens, G. Pascua, Z. Shermadini, R. Saint-Martin, A. Revcolevschi, C. Hess, B. Buechner, and H.H. Klauss, *J. Phys.: Condens. Matter* **25**, 365601 (2013).
- Short-range magnetic order and effective suppression of superconductivity by manganese doping in  $\text{LaFe}_{1-x}\text{Mn}_x\text{AsO}_{1-y}\text{F}_y$   
R. Frankovsky, H. Luetkens, F. Tambornino, A. Marchuk, G. Pascua, A. Amato, H.H. Klauss, and D. Johrendt,  
*Phys. Rev. B* **87**, 174515 (2013).
- Evidence for superconductivity with broken time-reversal symmetry in locally noncentrosymmetric  $\text{SrPtAs}$   
P.K. Biswas, H. Luetkens, T. Neupert, T. Stuerzer, C. Baines, G. Pascua, A.P. Schnyder, M.H. Fischer, J. Goryo, M.R. Lees, H. Maeter, F. Brueckner, H.H. Klauss, M. Nicklas, P.J. Baker, A.D. Hillier, M. Sgrist, A. Amato, and D. Johrendt, *Phys. Rev. B* **87**, 180503 (2013).
- Lattice and polarizability mediated spin activity in  $\text{EuTiO}_3$   
K. Caslin, R.K. Kremer, Z. Guguchia, H. Keller, J. Köhler, and A. Bussmann-Holder,  
*J. Phys.: Condens. Matter* **26**, 022202 (2014).

- Existence of anisotropic spin fluctuations at low temperature in the normal phase of the superconducting ferromagnet UCoGe  
M. Taupin, L. Howald, D. Aoki, J. Flouquet and J. P. Brison, *Phys. Rev. B* **89**, 041108 (2014).
- Modifications of the Meissner screening profile in  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  thin films by gold nanoparticles  
E. Stilp, A. Suter, T. Prokscha, Z. Salman, E. Morenzoni, H. Keller, C. Katzer, F. Schmidl and M. Döbeli, *Phys. Rev. B* **89**, 020510(R) (2014).
- Magnetic field distribution and characteristic fields of the vortex lattice for a clean superconducting niobium sample in an external field applied along a three-fold axis  
A. Yaouanc, A. Maisuradze, N. Nakai, K. Machida, R. Khasanov, A. Amato, P.K. Biswas, C. Baines, D. Herlach, R. Henes, P. Keppeler, and H. Keller, *Phys. Rev. B* **89** 184503 (2014).

## PhD theses

- Investigations of Superconductivity and Magnetism in Iron-Based and Cuprate High-Temperature Superconductors  
Zurab Guguchia, PhD Thesis, Physik-Institut, Universität Zürich, 2013.
- Torque Magnetometry Studies of High-Temperature Superconductors and Magnetic Materials  
Saskia Bosma, PhD Thesis, Physik-Institut, Universität Zürich, 2013.
- Structural and Magnetic Properties of the Insulating  $T'$ - $\text{RE}_2\text{CuO}_4$  Parent Compounds of Electron-Doped Superconductors  
Gwendolyne Banasan Pascua, PhD Thesis, Physik-Institut, Universität Zürich, 2014.

## Articles in press

104

- Superconductivity in a new layered bismuth oxyselenide:  $\text{LaO}_{0.5}\text{F}_{0.5}\text{BiSe}_2$   
A. Krzton-Maziopa, Z. Guguchia, E. Pomjakushina, V. Pomjakushin, R. Khasanov, H. Luetkens, P.K. Biswas, A. Amato, H. Keller, and K. Conder, *J. Phys.: Condens. Matter*.

## Conference reports

- Influence of photo illumination on the Meissner screening profile of underdoped  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$   
E. Stilp, A. Suter, E. Morenzoni, T. Prokscha, Z. Salman, H. Keller, P. Pahlke, R. Huehne, J. C. Baglo, R. Liang, R. F. Kiefl,  
Swiss Workshop on Materials with Novel Electronic Properties, Les Diablerets, Switzerland, June 24-28, 2013.
- Microscopic Coexistence and Competition of Magnetism and Superconductivity in  $\text{Ba}_{1-x}\text{K}_x\text{Fe}_2\text{As}_2$  : A Structural, Magnetic, and Superconducting Phase Diagram  
G. Pascua, H. Luetkens, E. Wiesenmayer, Z. Shermadini, R. Khasanov, A. Amato, H. Maeter, H.-H. Klauss, H. Keller, E. Morenzoni, and D. Johrendt,  
Swiss Workshop on Materials with Novel Electronic Properties, Les Diablerets, Switzerland, June 24-28, 2013.
- Strong Pressure Dependence of the Magnetic Penetration Depth in Single Crystals of the Heavy-Fermion Superconductor  $\text{CeCoIn}_5$  Studied by Muon Spin Rotation  
L. Howald, A. Maisuradze, P. Dalmas de Reötier, A. Yaouanc, C. Baines, G. Lapertot, K. Mony, J.-P. Brison and H. Keller,  
Joint Annual Meeting of the Austrian Physical Society and Swiss Physical Society, Linz, September 3-6, 2013.
- Magnetic phase diagram of thin film  $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$  studied by low energy muon spin rotation  
E. Stilp, B. M. Wojek, H. Keller, A. Suter, T. Prokscha, H. Luetkens, E. Morenzoni, A. Gozar, G. Logvenov, and I. Bozovic, APS March Meeting, Denver, USA, March 3-7, 2014.
- Probing Spin Fluctuations in the Paramagnetic Phase of  $\text{EuTiO}_3$  by Muon Spin Rotation techniques  
Z. Guguchia, H. Keller, A. Shengelaya, J. Köhler, and A. Bussmann-Holder,  
APS March Meeting, Denver, USA, March 3-7, 2014.
- Muon-spin rotation and magnetization studies of chemical and hydrostatic pressure effects in  $\text{EuFe}_2(\text{As}_{1-x}\text{P}_x)_2$   
Z. Guguchia, A. Shengelaya, A. Maisuradze, L. Howald, Z. Bukowski, M. Chikovani, H. Luetkens, S. Katrych, J. Karpinski, and H. Keller, APS March Meeting, Denver, USA, March 3-7, 2014.

- Lattice and polarizability mediated spin activity in  $\text{EuTiO}_3$ : muon spin rotation and magnetization studies  
Z. Guguchia, K. Caslin, R. Kremer, P. Reuvenkamp, H. Keller, A. Shengelaya, J. Köhler, and A. Busmann-Holder, German Physical Society (DPG) Spring Meeting, Dresden, Germany, March 31 - April 4, 2014.

#### Invited lectures

- E. Stilp: Direct investigation of the Meissner screening in  $\text{YBa}_2\text{Cu}_3\text{O}_{6+x}$  by low-energy muon-spin rotation  
Colloquia at the Institute of Solid State Physics, Friedrich-Schiller-University Jena, Germany, July 6, 2013.
- Z. Guguchia: Tuning the Structural and Magnetic Phase Transitions of  $\text{EuTiO}_3$  by Sr Doping: the Phase Diagram of  $\text{Eu}_x\text{Sr}_{1-x}\text{TiO}_3$   
13<sup>th</sup> International Meeting on Ferroelectricity, Krakow, Poland September 2-6, 2013.
- Z. Guguchia: Probing Spin Fluctuations in the Paramagnetic Phase of  $\text{EuTiO}_3$  by Muon Spin Rotation  
13<sup>th</sup> International Meeting on Ferroelectricity, Krakow, Poland September 2-6, 2013.
- H. Keller: The interplay of magnetism and lattice dynamics in the perovskite oxide system  $\text{Sr}_{1-x}\text{Eu}_x\text{TiO}_3$  ( $0 \leq x \leq 1$ )  
European Congress and Exhibition on Advanced Materials and Processes, EUROMAT 2013, Sevilla (Spain), September 8 - 13, 2013.
- L. Howald: Superconductivity, Quantum Critical Points and Magnetism in the Heavy Fermion System  $\text{CeCoIn}_5$   
Seminar of the Laboratory for Synchrotron Radiation and Condensed Matter (LSC), Paul Scherrer Institut, Villigen, Switzerland, November 27, 2013.

### 21.3.2 Phase transitions and superconducting photon detectors

#### Articles

- Separating the bulk and surface n- to p-type transition in the topological insulator  $\text{GeBi}_{4-x}\text{Sb}_x\text{Te}_7$   
S. Muff, F. von Rohr, G. Landolt, B. Slomski, A. Schilling, R. J. Cava, J. Osterwalder and J. H. Dil,  
*Phys. Rev. B* **88** (2013) 035407.
- AC-magnetic susceptibility in the peak-effect region of  $\text{Nb}_3\text{Sn}$   
O. Bossen, A. Schilling, and N. Toyota, *Physica C* **492** (2013) 133-137.
- Structure and magnetic interaction in the solid solution  $\text{Ba}_{3-x}\text{Sr}_x\text{Cr}_2\text{O}_8$   
H. Grundmann, A. Schilling, C. A. Marjerrison, H. A. Dabkowska and B. D. Gaulin,  
*Mat. Res. Bull.* **48** (2013) 3108-3111.
- Conventional superconductivity and CDW ordering in  $\text{Ba}_{1-x}\text{Na}_x\text{Ti}_2\text{Sb}_2\text{O}$   
F. von Rohr, A. Schilling, R. Nesper, C. Baines and M. Bendele, *Phys. Rev. B* **88** (2013) 140501(R).
- Numerical analysis of detection-mechanism models of superconducting nanowire single-photon detector  
A. Engel and A. Schilling, *J. Appl. Phys.* **114**, (2013) 214501.
- Superconductivity in rubidium substituted  $\text{Ba}_{1-x}\text{Rb}_x\text{Ti}_2\text{Sb}_2\text{O}$   
F. von Rohr, R. Nesper and A. Schilling, *Phys. Rev. B* **89** (2014) 094505.
- Low-temperature magnetic fluctuations in the Kondo insulator  $\text{SmB}_6$   
P.K. Biswas, Z. Salman, T. Neupert, E. Morenzoni, E. Pomjakushina, F. von Rohr, K. Conder, G. Balakrishnan,  
M. Ciomaga Hatnean, M.R. Lees, D. McK. Paul, A. Schilling, C. Baines, H. Luetkens, R. Khasanov, and A. Amato,  
*Phys. Rev. B* **89**, (2014) 161107(R).

#### PhD-Theses

- Superconducting Nanowires for Soft X-Ray Single-Photon Detectors  
Kevin Inderbitzin, PhD thesis, Physik-Institut, Universität Zürich, 2013.
- Calorimetric and Magnetic Studies on the Vortex Lattice of Low- $T_c$  Superconductors  
Olaf Bossen, PhD thesis, Physik-Institut, Universität Zürich, 2013.

## Contributed Conference Presentations

- A. Engel: Superconducting Nanowires for Soft X-Ray Single-Photon Detection  
Swiss Workshop on Materials with Novel Electronic Properties 2013, Les Diablerets, 27.6.2013.
- F. von Rohr: Characterization of the Bulk Properties and Surface States of the Topological Insulator  $\text{GeBi}_4\text{Te}_7$   
14<sup>th</sup> European Conference on Solid State Chemistry (ECSSC14), Bordeaux (France), 10.7.2013.
- A. Engel: Vortices in SNSPD: Magnetic field dependence of dark and photon count rates  
11<sup>th</sup> European Conference on Applied Superconductivity (EUCAS 2013), Genova (Italy), 16.9.2013.
- A. Engel: Detection mechanism in SNSPD: comparison of numerical models with experimental data (Poster)  
11<sup>th</sup> European Conference on Applied Superconductivity (EUCAS 2013), Genova (Italy), 18.9.2013.
- F. von Rohr: Chemistry of Topological Insulators  
Christmas Symposium at the Laboratory of Inorganic Chemistry, ETH Zürich, 11.12.2013.

## Invited Lectures

- A. Engel: Detection-mechanism models of superconducting single-photon detectors  
Quantum Optics Seminar, University of Leiden, The Netherlands, 8.11.2013.
- A. Schilling: Experimental tests for macroscopic phase coherence of magnetic-quasiparticle condensates in insulating spin systems  
Solid-State Physics Seminar, ETH Zürich, 12.12.2013.

106

## 21.3.3 Surface Physics

## Articles

- Immobilizing individual atoms beneath a corrugated single layer of boron nitride  
H. Y. Cun, M. Iannuzzi, A. Hemmi, S. Roth, J. Osterwalder, and T. Greber, *Nano Letters* 13, 2098 (2013).
- Chemical vapor deposition and characterization of aligned and incommensurate graphene/hexagonal boron nitride heterostack on Cu(111)  
S. Roth, F. Matsui, T. Greber, J. Osterwalder, *Nano Letters* 13, 2668 (2013).
- Separating the bulk and surface n- to p- transition in the topological insulator  $\text{GeBi}_{4-x}\text{Sb}_x\text{Te}_7$   
S. Muff, F. von Rohr, G. Landolt, B. Slomski, A. Schilling, R. J. Cava, J. Osterwalder, J. H. Dil, *Phys. Rev. B* 88, 035407 (2013).
- Bulk and surface Rashba splitting in single termination  $\text{BiTeCl}$   
G. Landolt, S. V. Eremeev, O. E. Tereshchenko, S. Muff, B. Slomski, A. Kokh, M. Kobayashi, T. Schmitt, V. N. Strocov, J. Osterwalder, E. V. Chulkov, J. H. Dil, *New J. Phys.* 15, 085022 (2013).
- Tuning of the Rashba effect in Pb quantum well states via a variable Schottky barrier  
B. Slomski, G. Landolt, G. Bihlmayer, J. Osterwalder, J. H. Dil, *Sci. Rep.* 3, 1963 (2013).
- Trends in adsorption characteristics of benzene on transition metal surfaces: role of surface chemistry and van der Waals interactions  
H. Yildirim, T. Greber, A. Kara, *J. Phys. Chem. C* 117, 20572 (2013).
- Moiré beatings in graphene on Ru(0001)  
M. Iannuzzi, I. Kalichava, H. F. Ma, S. J. Leake, H. T. Zhou, G. Li, Y. Zhang, O. Bunk, H. J. Gao, J. Hutter, P. R. Willmott, T. Greber, *Phys. Rev. B* 88, 125433 (2013).
- Note: an ion source for alkali metal implantation beneath graphene and hexagonal boron nitride monolayers on transition metals  
L. H. de Lima, H. Y. Cun, A. Hemmi, T. Kälin, T. Greber, *Rev. Sci. Instrum.* 84, 126104 (2013).

- Interband spin-orbit coupling between anti-parallel spin states in Pb quantum well states  
B. Slomski, G. Landolt, S. Muff, F. Meier, J. Osterwalder, J. H. Dil, *New J. Phys.* 15, 125031 (2013).
- Implantation length and thermal stability of interstitial Ar atoms in boron nitride nanotents  
H. Y. Cun, M Iannuzzi, A. Hemmi, J. Osterwalder, T. Greber, *ACS Nano* 8, 1014 (2014).
- Spin texture of Bi<sub>2</sub>Se<sub>3</sub> thin films in the quantum tunneling limit  
G. Landolt, S. Schreyeck, S. V. Eremeev, B. Slomski, S. Muff, J. Osterwalder, E. V. Chulkov, C. Gould, G. Karczewski, K. Brunner, H. Buhmann, L. W. Molenkamp, J. H. Dil, *Phys. Rev. Lett.* 112, 057601 (2014).
- Versatile attosecond beamline in a two-foci configuration for simultaneous time-resolved measurements  
R. Locher, M. Lucchini, J. Herrmann, M. Sabbar, M. Weger, A. Ludwig, L. Castiglioni, M. Greif, M. Hengsberger, L. Gallmann, U. Keller, *Rev. Sci. Instrum.* 85, 013113 (2014).
- Low-cost photoelectron yield setup for surface process monitoring  
A. Hemmi, H. Y. Cun, S. Roth, J. Osterwalder, T. Greber, *J. Vac. Sci. Technol. A* 32, 02302 (2014).
- Tunneling, remanence, and frustration in dysprosium-based endohedral single-molecule magnets  
R. Westerström, J. Dreiser, C. Piamonteze, M. Muntwiler, S. Weyeneth, K. Krämer, S. X. Liu, S. Decurtins, A. Popov, S. F. Yang, L. Dunsch, T. Greber, *Phys. Rev. B* 89, 060406(R) (2014).
- High-quality single-atomic-layer deposition of hexagonal boron nitride on single-crystalline Rh(111) four-inch wafers  
A. Hemmi, C. Bernard, H. Y. Cun, S. Roth, M. Klöckner, T. Kälin, M. Weinl, S. Gsell, M. Schreck, J. Osterwalder, T. Greber, *Rev. Sci. Instrum.* 85, 035101 (2014).

#### PhD thesis

- Graphene on metal surfaces and hexagonal boron nitride  
Silvan Roth, PhD Thesis, Physik-Institut, Universität Zürich, 2013.

107

#### Contributed conference presentations

- Growth and characterization of graphene/hexagonal boron nitride heterostructure on Cu(111)  
J. Osterwalder, *Graphene 2013*, Bilbao, Spain, 26.04.13
- Reaction of tetrahydrofuran on Si(001) studied by STM and XPS  
G. Mette, *Gordon Research Conference - Chemical Reactions at Surfaces, Les Diablerets*, 29.04.13
- Nanotents - immobilizing single atoms beneath a monolayer of boron nitride  
H. Y. Cun, *Graphene Week 2013*, Chemnitz, Germany, 07.06.13
- Adsorption of tetrahydrofuran on a Si(001) surface studied by STM, XPS and UPS  
G. Mette, *8th MolCHsurf Discussion Meeting*, Bern, 10.06.13
- A novel route towards absolute photoemission delays from surfaces by sub-cycle-resolved laser-assisted photoemission  
L. Castiglioni, *ATTO 2013*, Paris, France, 10.07.2013
- Tunneling, remanence, and frustration in endohedral single-molecule magnets on surfaces  
R. Westerström, *International Symposium on Atomic-Level Characterization (ALC'13)*, Kona, Hawaii, USA, 14.12.2013
- Nanoscale lateral segregation on h-BN/PtRh(111)  
T. Greber, *Symposium on Surface Science (3S Conference)*, St. Christoph, Austria, 12.03.14

#### Invited lectures

- T. Greber: Single atom magnets on surfaces: from spin shuttles to nanotents  
*Workshop on Surface Supported Molecular Nanostructures: Foundations and Functionality*, Institute of Advanced Studies Garching, 11.04.13
- T. Greber: UZH on the Graphene Flagship  
*Kick-off Meeting, Work Package Materials, Flagship Graphene*, Madrid, Spain, 20.06.13



- T. Greber:  $sp^2$ -hybridized single layers: from templates to nanotents  
International Workshop on Nanomaterials and Nanodevices, Beijing, China, 02.07.13
- T. Greber: Endohedral single-molecule magnets 1-2-3  
International Workshop on Nanomaterials and Nanodevices, Guilin, China, 05.07.13
- J. Osterwalder: Surface science approach to graphene and boronitrene (keynote talk)  
1st Hayashi Conference, Hayama, Japan, 19.07.13.
- J. Osterwalder: A surface scientist's view on topological insulators  
12th PSI Summer School on Condensed Matter Research, Zuoz, 21.08.13
- J. Osterwalder: Functionalities from corrugated  $sp^2$ -bonded monolayers  
International Vacuum Congress (IVC-19), Paris, France, 13.09.13
- T. Greber: Nanotents and controlled 2 nm hole formation in single layers of graphene and hexagonal boron nitride  
International Symposium on Atomic Level Characterization (ALC'13), Kona, Hawaii, USA, 15.12.13
- T. Greber: Ion implantation beneath a boron nitride super-honeycomb: nanotent formation and 'can-opener' effect  
Seminar, Abt. Kern, Max-Planck-Institut für Festkörperphysik, Stuttgart, Germany, 18.12.13
- T. Greber: Nanotents  
Symposium on Surface and Nano Science (SSNS14), Furano, Japan, 17.01.14
- T. Greber: Spin shuttles: single-molecule magnets on surfaces  
Seminar, Nara Institute of Science and Technology (NAIST), Nara, Japan, 20.01.14
- 108 - M. Hengsberger: Attosecond dynamics of photoexcitations in solids  
4th Assembly Meeting of the NCCR MUST, Engelberg, 08.01.14
- T. Greber: Physics with a monolayer of hexagonal boron nitride: from nanomesh to nanotents  
Solid State Physics Seminar, ETHZ, 20.03.14
- T. Greber: Building blocks for molecular spintronics: from  $C_{60}$  to spin shuttles on surfaces  
Hauptvortrag, Frühjahrstagung der Deutschen Physikalischen Gesellschaft, Dresden, Germany, 31.03.14

### 21.3.4 Biological systems

#### Articles

- Coherent microscopy at resolution beyond diffraction limit using post-experimental data extrapolation  
T. Latychevskaia and H.-W. Fink, *Appl. Phys. Lett.* 103(20), 204105 (2013).
- Graphene Unit Cell Imaging by Holographic Coherent Diffraction  
J.-N. Longchamp, T. Latychevskaia, C. Escher, and H.-W. Fink, *Phys. Rev. Lett.* 110(25), 255501 (2013).
- Pulsed electron holography  
M. Germann, T. Latychevskaia, C. Escher, and H.-W. Fink, *Appl. Phys. Lett.* 102(20), 203115 (2013).
- Coherent diffraction and holographic imaging of individual biomolecules using low-energy electrons  
T. Latychevskaia, J.-N. Longchamp, C. Escher, and H.-W. Fink,  
in *Present and Future Methods for Biomolecular Crystallography* (Springer, 2013).
- Resolution enhancement in digital holography by self-extrapolation of holograms  
T. Latychevskaia and H.-W. Fink, *Optics Express* 21(6), 7726-7733 (2013).
- Electron beam collimation with a 40 000 tip metallic double-gate field emitter array and in-situ control of nanotip sharpness distribution  
P. Helfenstein, V. A. Guzenko, H.-W. Fink, S. Tsujino, *J. Appl. Phys.* 113(4) 043306 (2013).

## Articles in press

- Low-energy electron holographic imaging of gold nanorods supported by ultraclean graphene  
J.-N. Longchamp, C. Escher, T. Latychevskaia, and H.-W. Fink, *Ultramicroscopy*, (2014).
- On artefact-free reconstruction of low-energy (30–250 eV) electron holograms  
T. Latychevskaia, J.-N. Longchamp, C. Escher, and H.-W. Fink, *Ultramicroscopy*, (2014).

## Oral presentations

- T. Latychevskaia, J.-N. Longchamp, and H.-W. Fink:  
On the reconstruction of ultra low-energy electron holograms and diffraction pattern  
Microscopy Conference, Regensburg (Germany), 25-30 August 2013.
- J.-N. Longchamp, C. Escher and H.-W. Fin: Ultra-clean freestanding graphene by Pt-metal catalysis  
Graphene 2013 Bilbao, Spain, April 23 - 26, 2013.
- T. Latychevskaia, Jessica Britschgi and H.-W. Fink: Holographic time-resolved particle tracking using 3D-deconvolution  
Digital Holography and 3-D Imaging 2013, OSA Meeting, Hawaii, 21-25 April 2013.
- T. Latychevskaia and H.-W. Fink: Imaging outside the box: Resolution enhancement by hologram self-extrapolation  
Digital Holography and 3-D Imaging 2013, OSA Meeting, Hawaii, 21-25 April 2013.
- J.-N. Longchamp, T. Latychevskaia, C. Escher and H.-W. Fink: Probing the surface of graphene by means of low-energy electron coherent diffraction and holographic imaging  
Symposium on Surface Science, Åre (Sweden), March 3-9, 2013.

109

## 21.3.5 Disordered and Biological Soft Matter

### Articles

- Mechanical Control of Organ Size in the Development of the Drosophila Wing Disc  
T. Schluck, U. Nienhaus, T. Aegerter-Wilmsen, and C.M. Aegerter, *PLoSOne* **8**, e76171 (2013).
- Coarsening dynamics of three dimensional levitated foams: from wet to dry  
N. Isert, G. Maret, and C.M. Aegerter, *Europ. Phys. J. E*, **36**, 116 (2013).
- Reply to comment on Direct determination of the transition to localization of light in three dimensions  
G. Maret, T. Sperling, W. Bührer, A. Lubatsch, R. Frank, and C.M. Aegerter, *Nature Photonics* **7**, 934 (2013).
- Direct imaging of fluorescent structures behind turbid layers  
G. Ghielmetti, and C.M. Aegerter, *Optics Express* **22**, 1981 (2014).

### Theses

- On growth and Form and Patterning of Drosophila Wing Imaginal Discs  
U. Nienhaus, PhD Thesis, Universität Zürich, 2013.
- Mechanical Perturbation and Stimulation of Drosophila Wing Imaginal Discs  
T. Schluck, PhD Thesis, Universität Zürich, 2013.
- Experimental Study on bending properties of zebrafish fins  
S. Puri, Master Thesis, Universität Zürich, 2014.

### Conference reports

- Direct determination of the transition to Anderson localization of light (poster)  
T. Sperling, W. Bührer, C.M. Aegerter, and G. Maret,  
Workshop "ondes et images", Cargèse, France (May 27 - June 1, 2013)

- Determination of the transmission matrix through thick turbid samples (poster)  
M. Ackermann, T. Sperling, G. Maret, and C.M. Aegerter,  
Workshop "ondes et images", Cargese, France (May27 - June 1, 2013)
- Mechanical stresses and boundaries. (poster)  
U. Nienhaus, and C.M. Aegerter, Swiss Drosophila Day; ETH, Zurich, Switzerland (June 7, 2013).
- Mechanical growth regulation of Drosophila wing discs. (poster)  
U. Nienhaus, T. Aegerter-Wilmsen, T. Schluck, M.B. Heimlicher, K. Basler and C.M. Aegerter,  
Gordon Research Conference on soft condensed matter; Colby College, New London, USA (August 19-23, 2013).
- Transition in the coarsening dynamics of foams with different liquid content. (poster)  
N. Isert, G. Maret and C.M. Aegerter,  
Gordon Research Conference on soft condensed matter; Colby College, New London, USA (August 19-23, 2013).
- Transition in the coarsening dynamics of foams with different liquid content. (poster)  
N. Isert, G. Maret and C.M. Aegerter, Soft Matter Conference; Rome, Italy (September 16-19, 2013).
- The role of mechanical forces in the regulation of organ growth (poster)  
D. Eder, C.M. Aegerter, and K. Basler, Physics of living matter, Cambridge, UK (September 19-20, 2013)
- Mechanical growth regulation of Drosophila wing discs. (poster)  
T. Aegerter-Wilmsen, T. Schluck, U. Nienhaus, M.B. Heimlicher, K. Basler and C.M. Aegerter,  
Physics of Biology meeting; Geneva, Switzerland (November 26-28, 2013).

110

## Invited lectures

- C.M. Aegerter: Light transport in turbid media: from Anderson localization to imaging  
Physics Colloquium, University of Bayreuth, Germany (07.05.2013).
- C.M. Aegerter: Transition in the coarsening dynamics of foams with different liquid content  
ESA workshop "emulsions in space", Noordwijk, The Netherlands (13.05.2013).
- C.M. Aegerter: Mechanical growth control in the wing imaginal disc of Drosophila  
The Physics of emergent behaviour, Brighton, U.K. (24.06.2013).
- C.M. Aegerter: Microscopy with scattered light  
Biophysics Seminar at the Ecole Normale Supérieure, Paris, France. (13.09.2013).
- C.M. Aegerter: Growth control via mechanical feedback in the wing disc of Drosophila  
International Soft Matter conference, Rome, Italy (16.09.2013).
- C.M. Aegerter: Die Physik der Farben  
Weiterbildung für Gymnasiallehrpersonen, University of Zurich (24.10.2013).
- C.M. Aegerter: Growth control via mechanical feedback in the wing disc of Drosophila  
Workshop on "Mechanics and growth of tissues: From Development to Cancer", Institut Curie, Paris, France (14.01.2014).
- C.M. Aegerter: Spannung mit Strom und Magneten  
Project day in Physics, Primarschule Elsau, Switzerland, (24.01.2014).
- C.M. Aegerter: Growth control via mechanical feedback in the wing disc of Drosophila  
MRC Laboratory for molecular cell biology, University College London, London, UK (29.01.2014).

## 21.4 Bachelor and Master Theses

### 21.4.1 Bachelor theses

- Rating and Ranking Method for Financial Market Assets Based on Stability Criteria  
Michael F. Dimmler
- 4d particle tracking by holography  
Jessica Britschgi
- Study of charge sharing in the LHCb Tracker Turicensis using proton-proton collisions at the LHCb  
Philipp Gloor
- Generation of ultrashort pulses via hollow fiber compression  
Michael Locher
- Mass model of Abell 2029  
Christina Wentz
- Hydrodynamic simulations of collisions between planets and protoplanets  
Christian Reinhardt
- Jitter-Messungen an TaN-basierten supraleitenden Einzelphotonenzählern  
Daniel Destraz
- Strukturelle und magnetische Eigenschaften des Spin-Dimer-Systems  $\text{Ba}_{3-x}\text{Sr}_x\text{Cr}_2\text{O}_8$   
Leonie Ulrich
- Nanostruktur der Zebrafischhaut  
Rubina Arulanantham
- Höhenstrahlungsexperiment  
Nathalie E. Chételat Soto
- Comparison of Measured and Simulated Light Yield in Plastic Scintillators  
Markus Baumgartner
- Avalanche Photodiode Testing in Liquid Xenon  
Michael Miloradovic
- Monte Carlo simulation of the liquid xenon detector response to low-energy neutrons  
Dario Biasini
- Photomultiplier Tube Test in Liquid Xenon for Direct Dark Matter Detection Experiments  
Andrea Gmür
- Aufbau eines Teststandes für die Produktion einer AMC Kleinserie  
Michael Hochstrasser
- Calculation of two Master Integrals for  $qq \rightarrow VV$   
Yanick Volpez
- Der Stern-Gerlach Versuch - Stolpersteine eines historischen Experiments  
Ruth Bründler Denzer
- Towards Freestanding Hexagonal Boron Nitride: Delamination by Etching and Bubbling  
Ronny Rüttimann

21.4.2 Master theses

- Inbetriebnahme einer spinpolarisierten Elektronenquelle und Nachweis der Spinpolarisation  
Eveline U. Eisenring
- Study of the molecular switch of TBA/Au(111) by photoelectron diffraction and absorption spectroscopy  
Adrian Schuler
- Angle-Resolved Photoemission Spectroscopy of the Topological Insulator  $\text{GeBi}_{4-x}\text{Sb}_x\text{Te}_7$   
Stefan Muff
- Determination of the Binding Energy of Water to GFP with TDS  
Simon Obrecht
- Constraints on Scalar Field Models from Tests of General Relativity  
Andreas Schärer
- The Role of Mergers in the Formation of Boxy Galaxies  
Rebekka Bieri
- Optical Characterisation of Quantum Dots  
Michael Locher
- A study on 3-pt Hanbury-Brown and Twiss Interferometry  
Christina Wentz
- Study of molecular switch of TBA/Au(111) by photoelectron diffraction and absorption spectroscopy  
Adrian Schuler