MAX-PLANCK-INSTITUT FÜR PHYSIK

(WERNER-HEISENBERG-INSTITUT)

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Cover Photo:

The cover photo shows two crystals to be used for the CRESST (Cryogenic Rare Event Search with Superconducting Thermometers) experiment located at the Laboratori Nazionali del Gran Sasso (LNGS) in Italy. The CRESST experiment is designed for direct detection of weakly interacting massive particles, accounting for the dark matter observed in the universe. The Max-Planck-Institut für Physik is substantially contributing to all essential aspects of the experiment.

Contents

Chapter 1

The ATLAS Experiment at the Large Hadron Collider LHC

1.1 The Muon Spectrometer

The muon spectrometer [1, 2] of the ATLAS experiment is equipped with three layers of muon detectors in a toroidal magnetic field of $3-6$ Tm bending power generated by a superconducting air-core magnet system. The spectrometer is designed to provide muon momentum resolution of better than 10% for transverse momenta up to 1 TeV/c over a pseudo-rapidity range of $|\eta| \leqslant 2.7$. This requires a very accurate track sagitta measurement with three layers of muon detectors which have to be aligned relative to each other with an accuracy of up to 30 μm in the bending direction in the magnetic field. Drift chambers with very high spatial resolution of 40 μm, the Monitored Drift Tube (MDT) chambers, have been developed to cover the active area of the spectrometer of 5500 m^2 with only 5% gaps mainly in the region of the detector feet.

The cylindrical central part of the spectrometer (barrel) contains eight race-track shaped magnet coils of 25 m length and 5 m radial width. The layout of the muon chambers follows the eightfold symmetry of the magnet around the proton beam axis in eight small and eight large azimuthal sectors (see Fig. 1.1). The barrel part of the spectrometer is complemented by two endcaps each consisting of eight superconducting coils housed in a common cryostat fitting into the inner bore of the barrel toroid magnet and three wheel-shaped layers of muon detectors.

The MDT chambers built in Munich consist of two triple layers of 30 mm diameter aluminium drift tubes of 3.8 m length equipped with a central gold-plated tungsten-rhenium sense wire which are separated by an aluminum space frame. The drift tubes are operated with Ar:CO_2 (93:7) gas mixture at a pressure of 3 bar and a gas amplification of 20,000 (corresponding to a operating voltage between tube wall and wire of 3080 V) and provide a position resolution of about 80 μm . The sense wires are positioned within a chamber with an accuracy of better than 20 μm in order to achieve the required spatial resolution of the chambers [3].

In the years 2001 to 2006, 88 MDT chambers were constructed at the MPI [4] containing about 36000 drift tubes of 3.8 m length. They cover about 15% of the active area of the spectrometer. The installation of these chambers in the outermost layer of the barrel part of the spectrometer took place in 2005 and 2006. The commissioning of the chambers in the ATLAS detector was completed in summer 2008, just before the start of LHC data taking [5, 6, 7]. The one year long interruption of the LHC operation caused by severe beam magnet failures in September 2008 was used to calibrate and align the muon spectrometer and to commission the muon identification with muons from cosmic rays.

1.1.1 Muon Detector Software

The MPI group is contributing to all aspects of the software development for the analysis of the ATLAS muon detector data, including the calibration of the space drift-time relationsship of the MDT chambers [8, 9, 10, 11, 12, 13, 14, 15], the alignment of the muon spectrometer with muon tracks [17, 18, 19, 20, 21], the evaluation and monitoring of the data quality of the muon detector [22, 23], optimization of the muon reconstruction for the high background rates expected at the LHC [19, 24], and the Monte Carlo simulation programs for the muon spectrometer [25, 26]. The first two projects which are of central importance for the operation and performance of the ATLAS muon spectrometer and in which the MPI group plays a leading role are discussed in more detail in the following.

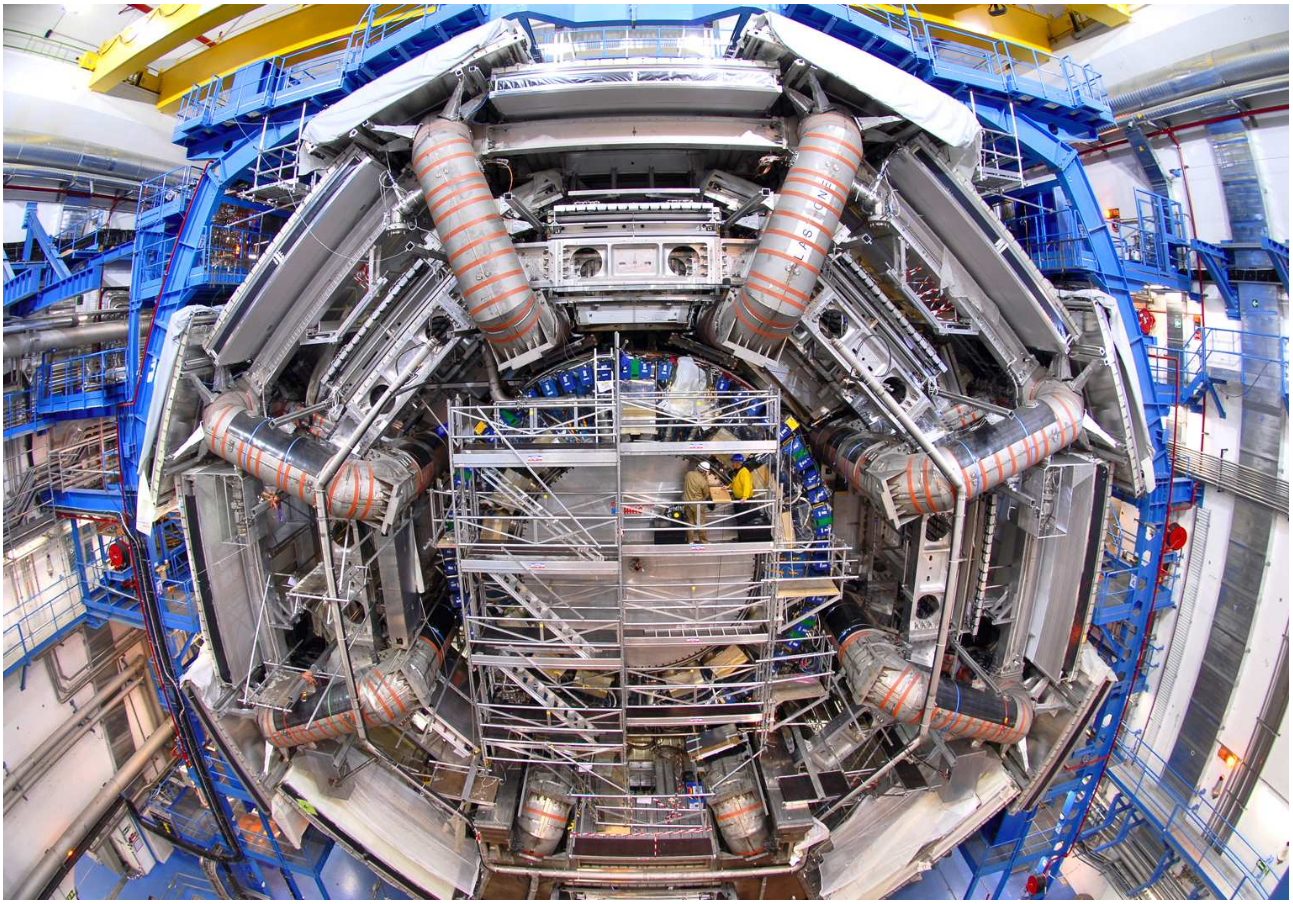

Figure 1.1: The barrel part of the ATLAS muon spectrometer viewed from the LHC tunnel after completion of the muon chamber installation in November 2006. The MDT chambers built in Munich are mounted on rails on the outside of the eight superconducting magnet coils.

Drift Tube Calibration

The pressurized drift-tube technology has been chosen for the ATLAS muon tracking chambers because of the high spatial resolution of better than 80 μm which can be achieved for individual drift tubes by measuring the drift time of the ionization electrons to the sense wires. In order to reach the required spatial resolution of the chambers of 40 μm not only the the sense wires have to be positioned in a chamber with an accuracy of 20 μm but also the space drift-time relationship of the approximately 400,000 drift tubes in ATLAS has to be known with the same precision. The drift properties of the electrons depend on the temperature and pressure of the drift gas as well as on the magnetic field and the rate of background hits from neutrons and photons which can be very high at the Large Hadron Collider (LHC). For the regular calibration of the space drift-time relationship, correlations between the positions measurements of the drift tubes hit by a traversing muon can be used.

We have developed fast and efficient algorithms for the determination of the space drift-time relationship [8, 9] and of the spatial resolution [10] of the MDT chambers which are now part of the ATLAS data reconstruction software. The algorithms have been extensively tested with simulated data, cosmic ray commissioning data [8, 6, 7], in a muon beam at CERN [11, 12] and under LHC operating conditions, in magnetic fields and at high background rates, using test beam data taken by our group at the Gamma Irradiation Facility at CERN [13]. A model for magnetic field corrections to the space drift-time relationship has been derived from the measurements [14].

The large sample of cosmic ray muons recorded by the ATLAS detector in 2008 and 2009 allowed detailed studies of the robustness of the calibration algorithms. The r-t calibration algorithm showed robust operation for all the chambers apart from the chambers with muons at 30° incidence angles where all drift radii are equal. The r-t calibration method originally applied

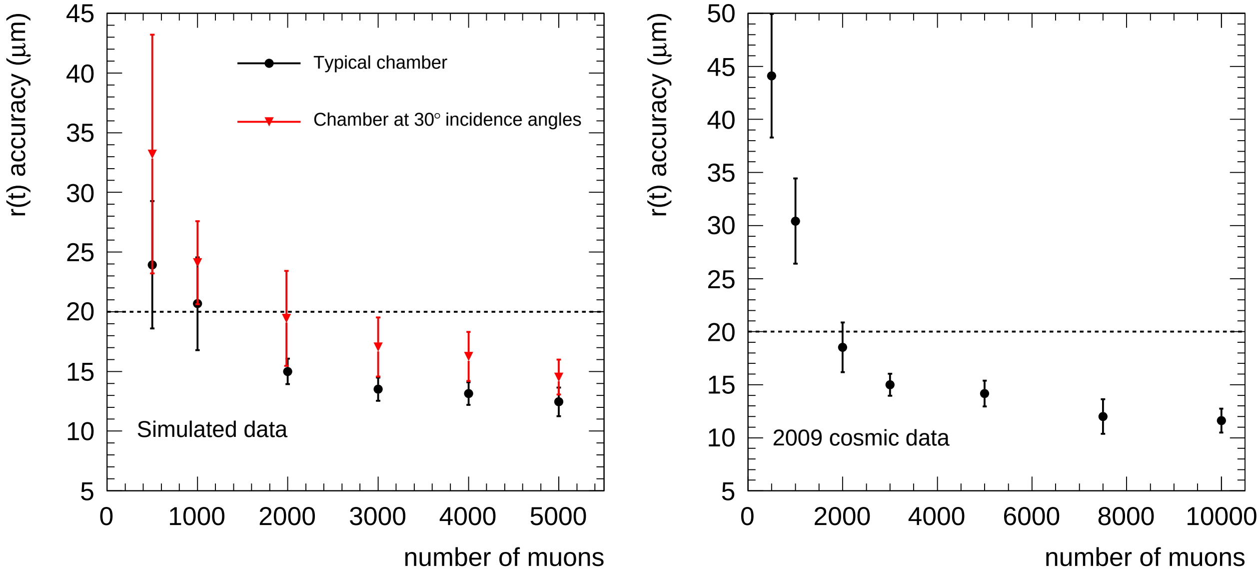

Figure 1.2: Accuracy of the calibration of the space drift-time relationship of the drift tubes of the ATLAS MDT chambers as a function of the number of cosmic muon tracks used per chamber. Left: Simulated data. Right: Cosmic ray data confirming the predicted *r*-*t* accuracies.

to straight track segments in triplelayers of the muon chambers had to be extended to curved track segments in the muon chambers to achieve the same level of robustness for all muon chambers [27]. Figure 1.2 shows the accuracy of the space drift-time relationship provided by the improved calibration algorithm as a function of the number of collected muon track segments in a chamber for simulation and cosmic ray data. The required accuracy of 20 μm is realibly achieved with 3000 muons per chamber for all chambers of the muon spectrometer. The predicted accuracy is confirmed by the studies with muons from cosmic rays.

The dependence of the drift time on the magnetic field strength measured with cosmic rays in the ATLAS detector agrees well with the model based on the test beam measurements (see Fig. 1.3).

The MPI group is operating one of the three computing centres dedicated to the calibration and the alignment of the ATLAS muon spectrometer [15] using a special data stream of muon tracks reconstructed by the ATLAS second level trigger algorithms. The commitment of the MPI group to calibrate roughly one third of the MDT chambers and to align the muon detectors with muon trajectories includes the development of fully automated calibration and alignment procedures and monitoring tools [16].

Muon Chamber Alignment with Tracks

To achieve the required momentum resolution of the ATLAS muon spectrometer up to the highest muon energies, the relative positions of the chambers have to be continuously monitored and misalignment corrections have to be applied to the measured track sagitta with an accuracy of 30 μm. The MPI group contributed significantly to the development and test of the high-precision optical alignment monitoring system for the muon spectrometer [1]. The group also developed algorithms for the alignment of the ATLAS muon spectrometer with muon tracks [17, 18, 19, 20, 21].

In the barrel part of the spectrometer, only the large chamber sectors mounted in between the magnet coils can be fully aligned with optical sensor measurements. The small chamber sectors mounted on the coils (see Fig. 1.1) have to be aligned with respect to the large sectors with muon tracks passing through the overlap regions between the the small and large sectors. The MPI group is providing these alignment corrections using the muon calibration data at the Munich calibration and alignment computing centre [15, 17].

Straight muon tracks measured while the toroid magnets are turned off are needed for the precise determination the initial chamber positions after installation as a starting point for the monitoring of further chamber movements by the optical sensors mounted on the chambers. An efficient algorithm has been de-

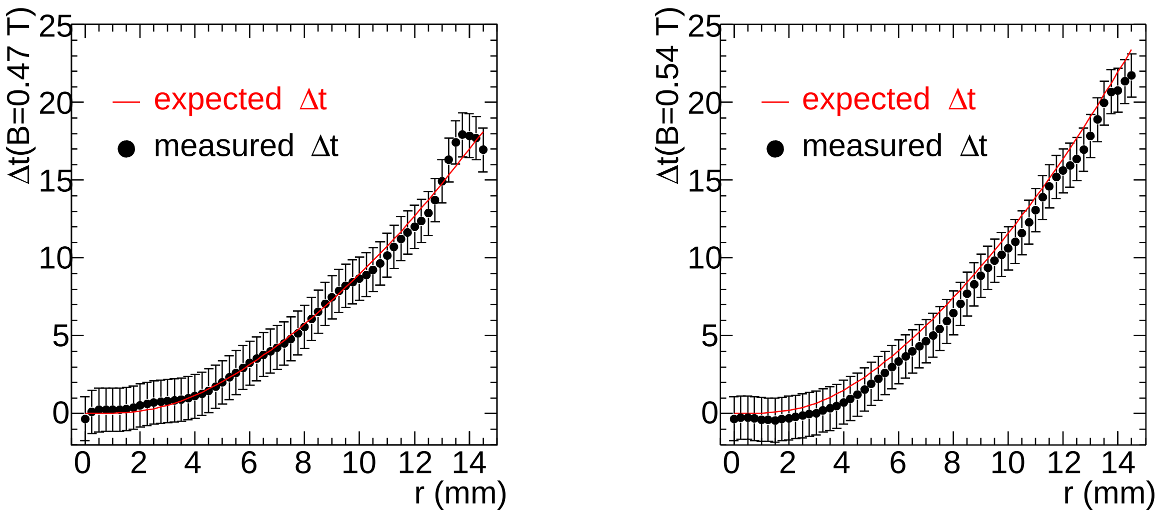

Figure 1.3: Magnetic field corrections to the drift time t in different regions of magnetic-field strength (0.47 T on the left, 0.54 T on the right) in MDT chambers in the middle layer of the large sectors of the barrel muon spectrometer as a function of the drift distance r. The measured difference in the drift times with and without magnetic field B agrees well with the model expectation in red derived from test beam measurements. The error bars of data points correspond to the estimated r-t accuracy of 20 *mu*m. The drift time correction increases with the distance to the wire because of the deflection of the drifting electrons in the magnetic field oriented in the direction of the tube axis.

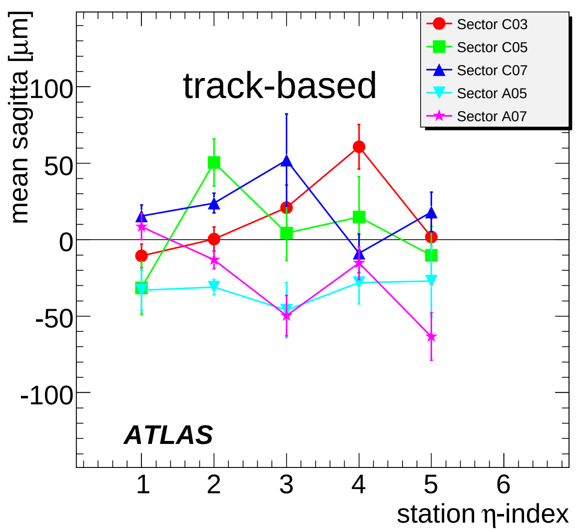

Figure 1.4: Mean values of the apparent sagittas of straight muon tracks after the initial alignment with straight muon track in ATLAS cosmic ray data. The station η-index labels the chamber position from the inside to the outside of the barrel of the muon spectrometer. The results are shown for large barrel chambers; similar results are obtained for the small barrel chambers.

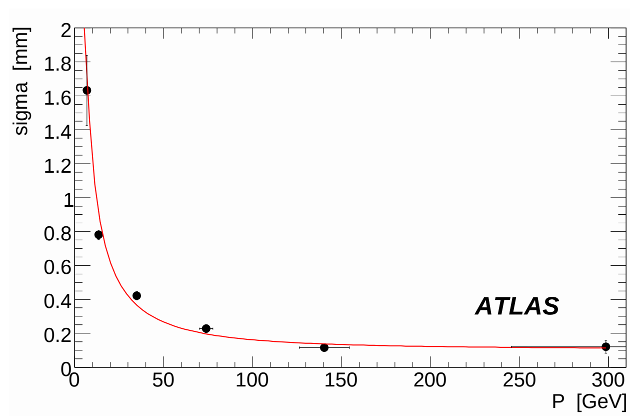

Figure 1.5: Resolution of the sagitta measurement as a function of the muon momentum as measured in ATLAS cosmic ray data. The red line illustrated the fitted resulation which is the quadratic sum of a term proportional to the inverse momentum taking into account multiple scattering and a constant term (of 100 μm) reflecting the limitation of the resolution by the spatial resolution and the alignment of the muon chambers.

veloped and successfully applied to cosmic ray commissioning data [18]. Figure 1.4 shows the mean value of the apparent sagitta of straight cosmic muon tracks after the initial alignment with straight cosmic muon tracks. The accuracy of the initial alignment is of the order of 50 μm or better and close to the desired ultimate accuracy of 30 μm. Improvements of the alignment accuracy are expected when chamber deformations will be taken into account in the track reconstruction. The measurement of the sagitta resolution of straight tracks in the muon spectrometer as a function of the muon momentum measured by the inner detector is presented in Figure 1.5. It improves with increasing momentum as multiple scattering decreases with increasing momentum ans reaches a plateau value of about 100 μm at high momenta reflecting the limited spatial resolution and the residual misalignment of the muon chambers. The achieved resolution is about a factor 2 larger than the target value of 50 μm because the chambers are only aligned with 50 μm instead of 30 μm precision.

The method is being extended to the alignment of the muon chambers with curved muon tracks in the magnetic field during normal operation of the experiment in order to verify the optical alignment corrections. This requires an independent measurement of the muon momentum which is insensitive to misalignment of the MDT chambers along the muon track. The MDT chambers with their two triple or quadruple layers of precisely positioned drift tubes measure not only track coordinates with high accuracy but also the local track direction. This feature can be utilized for independent momentum determination from measurement of the track deflection angles between the inner and the outer chamber layer and between the two multilayers of the chambers in the middle layer located inside the magnetic field. Studies with simulated data showed that the required alignment accuracy can be achieved within two days of data taking at the nominal LHC luminosity of 10^{33} cm^{-2}s^{-1} [19, 21].

1.1.2 Measurement of the Performance of the Muon Identification in ATLAS

The huge sample of cosmic ray muons made it possible to study the performance of the muon identification in great detail up to muon momenta of 300 GeV/c [28, 29]. Figure 1.6 shows the track reconstruction efficiency in the ATLAS muon spectrometer for cosmic ray muons reconstructed in the inner detector. The efficiency is close to 100% in the instrumented regions of the muon spectrometer. The drop of the efficiency at $|\eta| = 0$ is caused by the acceptance gap of the muon spectrometer which is needed for the services of the inner detector and the calorimeters.

The momentum of cosmic ray muons traversing the entire ATLAS detector are measured twice, first in the top part of the muon spectrometer, then in the bottom part of the muon spectrometer. The comparison of the two momentum measurements allowed us to measure the fractional momentum resolution of the muon spectrometer up to muon with $p_T = 300$ GeV/c (see Figure 1.7). The measured momentum resolution is in agreement with the expected momentum resolution for $p_T \lesssim 100$ GeV/c, but is a factor 2-3 worse than expected above 300 GeV/c due to the residual misalignment of the muon spectrometer.

The muon reconstruction efficiency and the momentum scale and resolution will be measured with $Z \rightarrow \mu^+\mu^-$ decays in pp collision data at the LHC

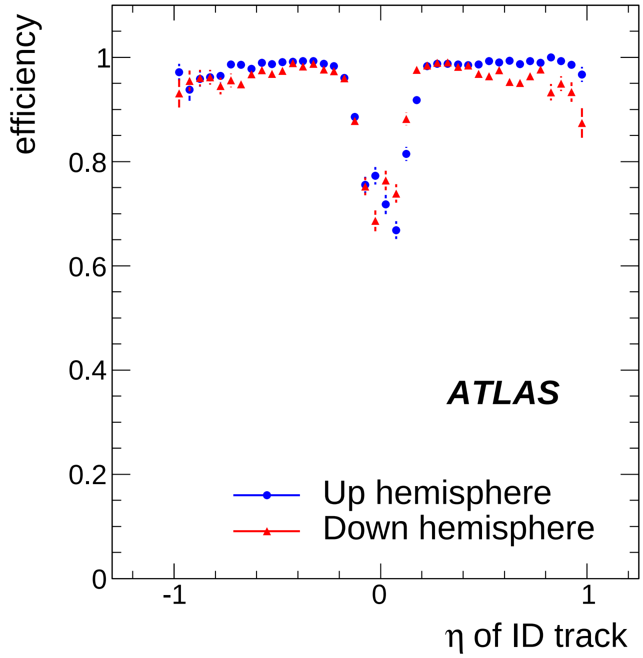

Figure 1.6: Track reconstruction efficiency in the muon spectrometer as a function of the pseudorapidity of the cosmic ray muon reconstructed by the inner detector. The muon momentum in the inner detector was requested to be greater than 5 GeV for the top part and greater than 9 GeV for the bottom part. The loss of efficiency in the region near $|\eta| = 0$ is due to acceptance holes of the muon spectrometer needed for services of the inner detector and the calorimeters.

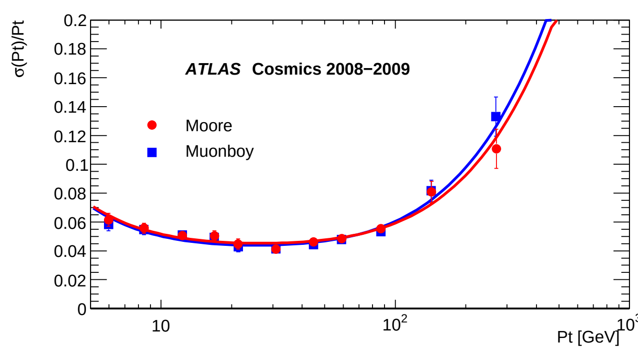

Figure 1.7: Transverse momentum resolution of the muon spectrometer evaluated by comparing the momentum of cosmic ray muons measured in the top part of the spectrometer with the momentum in the bottom part of the spectrometer in the barrel region of the muon spectrometer. The results of two complementary track reconstruction algorithms show similar performance.

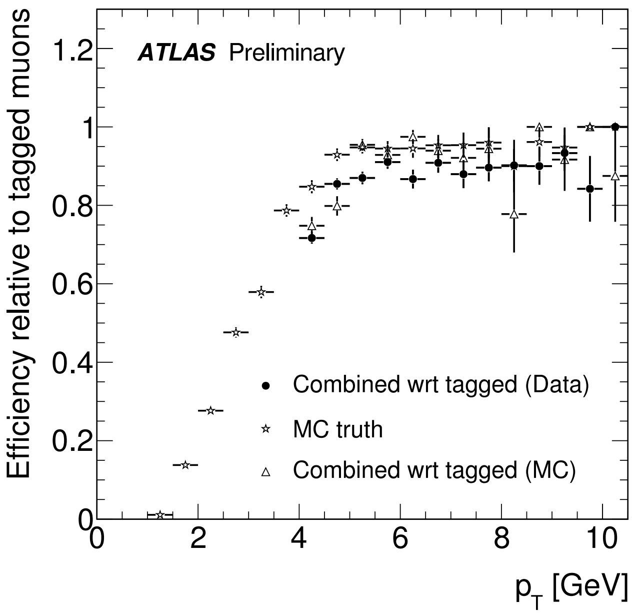

Figure 1.8: Comparison of the relative efficiency of the standard muon reconstruction algorithm with respect to reference muons as defined in the text with the Monte-Carlo prediction for $p_T > 4$ GeV/c. The star-shaped symbols labelled as MC truth show the standard muon reconstruction efficiency for muons identified as true muons in the simulation.

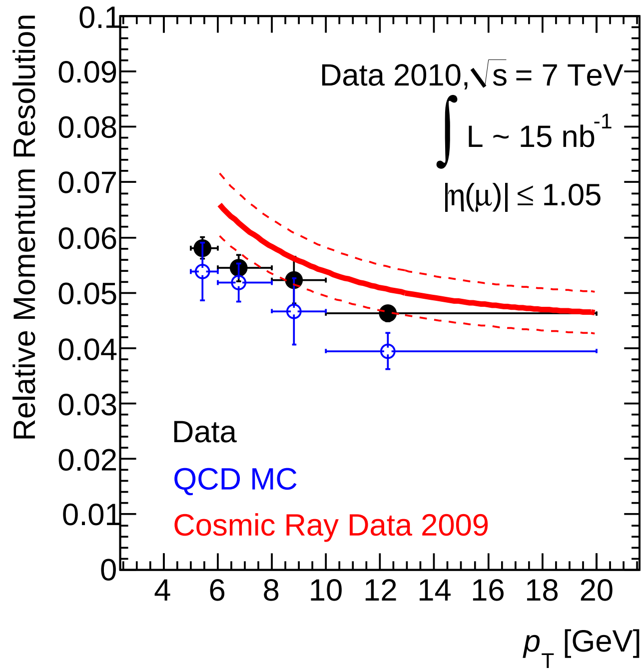

Figure 1.9: Comparison of the momentum resolution in the barrel part of the muon spectrometer measured with muons from pp collisions in comparison with the expected resolution from Monte-Carlo data and the analysis of cosmic ray data. The measured resolution agrees with the prediction within the measurement uncertainties.

[30, 31]. The position of the Z resonance peak is a measure for the momentum scale, its width a measure for the momentum resolution. The muon reconstruction efficiency will be measured by the so-called ”tag-and-probe method”. In the tag-and-probe method events with an isolated muon and an inner detector track giving an invariant mass compatible with the Z boson mass are selected. The fact that one of the two tracks is identified as muon ensure that the second track is also a muon and one can count how often the second track is reconstructed as a muon. The method has been studied on Monte-Carlo data and is able to reproduce the muon reconstruction efficiency with a systematic uncertainty of 0.2%.

In the early phase of the LHC operation the rate of dimuon decays of Z bosons is too low for the tag-and-probe method and alternative methods have to be used to get a handle on the muon spectrometer reconstruction efficiency. The efficiency of the standard muon reconstruction is measured with respec to an alternative muon identification approach. In the alternative approach an inner detector track which deposits only little energy in the calorimeters and which can be matched with a track segment in the muon spectrometer is identified as muon. The relative efficiency of the standard muon reconstruction with respect to the alternative selection is shown as a function of the transverse muon momentum in Figure 1.8 [32]. The relative efficiency agrees with the Monte-Carlo prediction within errors. It is lower than the true efficiency as the alternative muon selection has a lower rejection power against muons from pion and kaon decays in flight than the standard reconstruction.

At transverse momenta below 20 GeV/c the momentum resolution in the momentum resolution is significantly larger than in the inner detector and can be measured by comparing the momentum measured in the muon spectrometer with the momentum measured in the inner detector. The resolution measured this way is in agreement with the Monte-Carlo prediction and the measurement with cosmic ray muons within the measurement uncertainties (see Figure 1.9) [33].

The analysis of cosmic ray data and the first results of the analysis of pp collision data confirm the expected performance of the muon spectrometer.

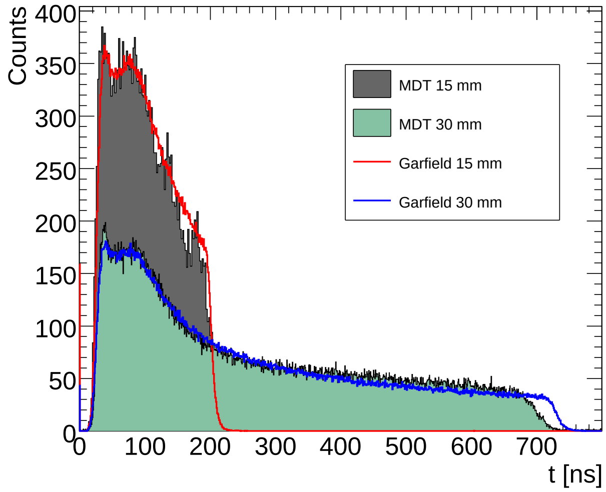

Figure 1.10: Comparison of the drift-time spectra of 30 mm and 15 mm diameter drift tubes with Ar:CO_2 (93:7) gas mixture at 3 bar and the same gas amplification of 20,000 which are in good agreement with the simulations with the GARFIELD program. The 15 mm diameter tubes show the same drift time spectrum as the 30 mm diameter tubes up to the cut off at the maximum drift time of 180 ns which corresponds to the smaller tube diameter.

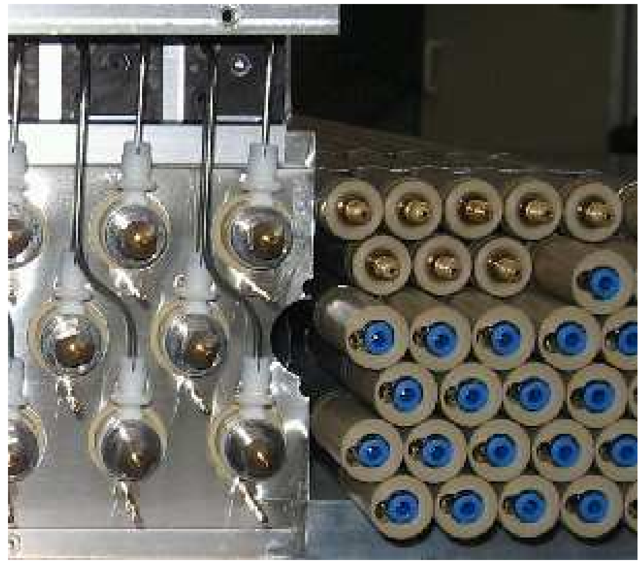

Figure 1.11: Front view of bundles of drift tubes with 30 mm (left) and 15 mm (right) diameter.

1.1.3 Detector Development for ATLAS Upgrades

For the searches for the Higgs boson and other new phenomena at the LHC, as high as possible luminosity of the accelerator is desirable. The design luminosity of the LHC of $10^34\,cm^{-2}s^{-1}$ is expected to be reached after a few years of data taking at lower luminosity. With a series of upgrades of the CERN accelerator complex a further increase of the LHC luminosity by an order of magnitude can be envisaged (Super-LHC or SLHC). Then, at the latest, a major upgrade of the ATLAS detector will be necessary including parts of the muon spectrometer, in particular in the forward regions with respect to the proton beams where the background rates will be the highest. The planning of a possible detector upgrade has started already within the ATLAS collaboration. In this context, we have developed a research program and submitted proposals for the development of improved muon drift tube detectors [34], of radiation tolerant readout electronics [35] and of methods to reduce the data volume [36] or increase the bandwidth of the data acquisition system of the MDT chambers [35] for operation of the ATLAS detector at very high luminosities.

Already at the design luminosity, the MDT chambers have to cope with unprecedentedly high background count rates from neutrons and photons as byproducts of the proton-proton collisions. The effects of high count rates in the MDT chambers of up to 500 Hz/cm^2 at the design luminosity in the inner layers of the forward regions have been studied by our group in a muon beam at the Gamma Irradiation Facility at CERN [13]. In addition to a degradation of the spatial resolution of the drift tubes from 80 μm without background to about 100 μm at the highest rates caused by fluctuations of the increasing space charge in the tubes, the muon detection efficiency of the tubes deteriorates quickly from 94% to 70%. New muon chambers with faster response time and high track reconstruction efficiency are required for the ten times higher background rates expected at a Super-LHC in the spectrometer endcap regions, and are desirable for the highest-rate regions already at the LHC design luminosity.

The development of faster muon detectors for Super-LHC at MPI builds on the extensive experience with the design and operation of the present ATLAS MDT chambers. First tests [37] confirmed the expectation that by reducing the drift tube diameter by a factor of two while leaving the gas mixture, pressure and gain unchanged, the maximum drift time is reduced by a factor of 3.5 (see Fig. 1.10). At the same time, the count rates caused by neutron and photon conversions in the drift tube walls will decrease proportional to the tube circumference by a factor of two, reducing the drift tube occupancy (the product of maximum drift time and count rate) and, consequently, the efficiency loss by a factor of 7. In addition, the number of drift tube layers fitting into the same volume as the present muon chambers can be increased by up to a factor of two (see Fig. 1.11) improving the chamber resolution and track reconstruction efficiency.

A concept for the drift tube and chamber design has been developed with the aim to construct and test a prototype chamber in 2008. The development of new radiation hard readout electronics for the MDT chambers has also started.

References

[1] ATLAS Collaboration, *Technical Design Report for the ATLAS Muon Spectrometer*, CERN/LHCC/97-22, May 1997.

[2] The ATLAS collaboration, *The ATLAS Experiment at the CERN Large Hadron Collider*, JINST-3, 2008.

[3] J. Dubbert, S. Horvat, O. Kortner, S. Kotov, H. Kroha, S. Mohrdieck-Möck, R.Richter, *Final Evaluation of the Mechanical Precision of the ATLAS Muon Drift Tube Chambers*, proceedings of the 2006 IEEE Nuclear Science Symposium, San Diego, USA, 29 October–4 November 2006, MPI report, MPP-2006-167, November 2006.

[4] F. Bauer et al., *Construction and Test of MDT Chambers for the ATLAS Muon Spectrometer*, Nucl. Instr. and Methods **A461** (2001) 17;
Construction and Test of the Precision Drift Chambers for the ATLAS Muon Spectrometer, IEEE Trans. Nucl. Sci., Vol. 48 (2001) 302;
The First Precision Drift Tube Chambers for the ATLAS Muon Spectrometer, Nucl. Instr. and Methods **A478** (2002) 153;
Large-Scale Production of Monitored Drift Tube Chambers for the ATLAS Muon Spectrometer, Nucl. Instr. and Methods **A518** (2004) 69.

[5] J. Dubbert et al., *Integration, Commissioning and Installation of Monitored Drift Tube Chambers for the ATLAS Barrel Muon Spectrometer*, proceedings of the 10^{th} Pisa Meeting on Advanced Detectors, Isola d'Elba, Italy, 21.–27.5.2006, Nucl. Instr. and Methods **A572** (2007) 53;
Integration, Commissioning and Installation of Large Drift-Tube Chambers for the ATLAS Barrel Muon Spectrometer, proceedings of the 2006 IEEE Nuclear Science Symposium, San Diego, USA, 29 October–4 November 2006, Nuclear Science Symposium Conference Record 2006, IEEE, Volume 3, pp 1368-1372, 2006, MPI report, MPP-2006-164, November 2006.

[6] J. Dubbert (for the ATLAS collaboration), *First Experience with the ATLAS Muon Spectrometer*, proceedings of the 11^{th} Vienna Conference on Instrumentation, Vienna, Austria, 19.–24.2.2007, Nucl. Instr. and Methods **A581** (2007) 507.

[7] J. von Loeben (for the ATLAS collaboration), *First Cosmic Ray Results of the ATLAS Muon Spectrometer with Magnetic Field*, proceedings of the 2007 IEEE Nuclear Science Symposium, Honolulu, Hawaii, USA, 28 October–2 November 2007, MPI report, MPP-2007-175, November 2007.

[8] J. von Loeben, M. Deile, N. Hessey, O. Kortner, H. Kroha, A. Staude, *An Efficient Method to Determine the Space-to-Drift Time Relationship of the ATLAS Monitored Drift Tube Chambers*, proceedings of the 2007 IEEE Nuclear Science Symposium, Honolulu, Hawaii, USA, 28 October–2 November 2007, MPI report, MPP-2007-176, November 2007.

[9] J. von Loeben, *Test und Kalibrierung der Präzisionsdriftrohrkammern des ATLAS-Myonspektrometers*, Diploma Thesis, Technische Universität München, MPI report, MPP-2006-241, December 2006.

[10] S. Horvat, O. Kortner, H. Kroha, *Determination of the Spatial Drift-Tube Resolution Using Muon Tracks*, ATLAS Note, ATL-MUON-PUB-2006-008, July 2006.

[11] C. Adorisio et al., *System Test of the ATLAS Muon Spectrometer at the H8 Beam at the CERN SPS*, Nucl. Instr. and Meth. **A593** (2008) 232-254;

[12] C. Adorisio et al., *Study of the ATLAS MDT Spectrometer Using High Energy CERN Combined Test Beam Data*, Nucl. Instr. and Meth. **A598** (2009) 400-415.

[13] M. Deile et al., *Performance of the ATLAS Precision Muon Chambers under LHC Operating Conditions*, proceedings of the 9^{th} Pisa Meeting on Advanced Detectors, Isola d'Elba, Italy, 25–31 May 2003, Nucl. Instr. and Methods **A518** (2004) 65;
Resolution and Efficiency of the ATLAS Muon Drift-Tube Chambers at High Background Rates, proceedings of the 10^{th} Vienna Conference on Instrumentation, Vienna, Austria, 16–21 February 2004, Nucl. Instr. and Methods **A535** (2004) 212;
S. Horvat et al., *Operation of the ATLAS Muon Drift-Tube Chambers at High Background Rates and in Magnetic Fields*, IEEE Transactions on Nuclear Science, Vol. 53, No. 2 (2006) 562.

[14] J. Dubbert et al., *Modelling of the Space-to-Drift-Time Relationship of the ATLAS Monitored Drift-Tube Chambers in the Presence of Magnetic Fields*, Nucl. Instr. and Methods **A572** (2007) 50.

[15] P. Bagnaia, O. Biebel, C. Guyot, H. Kroha, D. Orestano, B. Zhou, *A Proposal for the Calibration and Alignment of the ATLAS Muon Spectrometer*, ATLAS Note, ATL-MUON-INT-2006-006, October 2005;
P. Bagnaia et al., *Calibration Model for the MDT Chambers of the ATLAS Muon Spectrometer*, ATLAS Note, ATL-COM-MUON-2008-006, February 2008.

[16] M. Cirilli et al., *Conditions Database and Calibration Software Framework for ATLAS Monitored Drift Tube Chambers*, Nucl. Instr. and Methods **A572** (2007) 38.

[17] Ch. Amelung et al., *The ATLAS Muon Alignment System*, proceedings of the First LHC Alignment Workshop, CERN, Geneva, Switzerland, 4–6 September 2006, CERN report, CERN-2007-004, 2007;
J.C. Barriere et al., *The Alignment System of the Barrel Part of the ATLAS Muon Spectrometer*, ATLAS Note, ATL-MUON-PUB-2008-007, April 2008.

[18] I. Potrap, O. Kortner, S. Kotov, H. Kroha, *Alignment of the ATLAS Muon Spectrometer with Straight Tracks Using MILLEPEDE Method*, ATLAS Note, ATL-COM-MUON-2007-017, December 2007.

[19] O. Kortner, S. Kotov, H. Kroha, J. Schmaler, Ch. Valderanis, *Alignment of the ATLAS Muon Spectrometer with Tracks and Muon Identification at High Background Rates*, Nucl. Instr. and Methods **A581** (2007) 545-548.

[20] O. Kortner, S. Kotov, H. Kroha, I. Potrap, J. Schmaler, *New Methods for the Alignment of the ATLAS Muon Spectrometer with Tracks*, proceedings of the 2007 IEEE Nuclear Science Symposium, Honolulu, Hawaii, USA, 28 October–2 November 2007, MPI report, MPP-2007-177, November 2007.

[21] J. Schmaler, *Test and Alignment of the ATLAS Precision Muon Chambers*, Diploma Thesis, Technische Universität München, MPI report, MPP-2007-30, March 2007; B. Bittner, *Alignment of the ATLAS Muon Spectrometer Using Muon Tracks*, Diploma Thesis, Technische Universität München, MPI Report, MPP-2008-270, November 2008; St. Kaiser, *Search for the Higgs Boson in the Process $pp \to Hqq$, $H \to WW$ with the ATLAS Detector*, PhD Thesis, Technische Universität München, MPI Report, MPP-2010-38, CERN-THESIS-2010-043, January 2010.

[22] M. Schott, N. Benekos, L. Chevalier, J.-F. Laporte, *Impacts of Misalignment on the Reconstructed Z-Boson Resonance at the ATLAS Muon Spectrometer*, proceedings of the 10^{th} Pisa Meeting on Advanced Detectors, Isola d'Elba, Italy, 21–27 May 2006, Nucl. Instr. and Methods **A572** (2007) 16;
Z-Boson Resonance as a Calibration and Alignment Process for the ATLAS Muon Spectrometer, proceedings of the 2006 IEEE Nuclear Science Symposium, San Diego, 10 October–4 November 2006, MPI report, MPP-2006-173, November 2006.

[23] N. Benekos, M. Schott, *Study of Z-Boson Measurements at the ATLAS Experiment*, proceedings of the "Physics at LHC" conference, Cracow, Poland, 3–8 July 2006, MPI report, MPP-2006-174, July 2006.

[24] D. Primor, O. Kortner, G. Mikenberg, H. Messer, *A Novel Approach to Track Finding in a Drift Tube Detector*, Journal of INstrumentation, JINST **2** P01009, January 2007.

[25] S. Baranov et al., *Muon Detector Description as built and its Simulation for the ATLAS Experiment*, proceedings of the 10^{th} Pisa Meeting on Advanced Detectors, Isola 'Elba, Italy, 21–27 May 2006, Nucl. Instr. and Methods **A572** (2007) 14;
D. Rebuzzi et al., *Muon Detector Description as built and its Simulation for the ATLAS Experiment*, proceedings of the 2006 IEEE Nuclear Science Symposium, San Diego, 10 October–4 November 2006, MPI report, MPP-2006-170, November 2006.

[26] D. Rebuzzi et al., *GEANT4 Muon Digitization in the ATHENA Framework*, proceedings of the 2006 Computing in High Energy Physics Conference, Mumbai, India, 13–17 February 2006, MPI report, MPP-2006-178, February 2006.

[27] J. von Loeben, *Calibration of the ATLAS Muon Precision Chambers and Study of the Decay $\tau \to \mu\mu\mu$ at the LHC*, doctoral thesis, Technical University Munich, 2010.

[28] O. Kortner on behalf of the ATLAS collaboration, *Commissioning of the Charged Lepton Identification with Cosmic Rays in ATLAS*, PoS (HCP2009) 009.

[29] The ATLAS collaboration, *Commissioning of the ATLAS Muon Spectrometer with Cosmic Rays*, arXiv:1006.4384, submitted to EPJC (18 Jun 2010).

[30] The ATLAS collaboration, *Expected Performance of the ATLAS Experiment: Detector, Trigger and Physics*, arXiv:0901.0512; CERN-OPEN-2008-020, 2008.

[31] M. Antonelli et al., *n-situ determination of the performance of the ATLAS muon spectrometer*, Nucl. Phys. Proc. Suppl. **177-178** (2008) 326.

[32] The ATLAS collaboration, *Muon Performance in Minimum Bias pp Collision Data at $\sqrt{s}$=7 TeV with ATLAS*, ATLAS conference note ATLAS-CONF-2010-036, 2010.

[33] The ATLAS collaboration, *Muon Reconstruction Performance*, ATLAS conference note ATLAS-CONF-2010-036, 2010.

[34] O. Biebel, J. Dubbert, S. Horvat, O. Kortner, H. Kroha, R. Richter, D. Schaile, *Expression of Interest: R&D on Precision Drift Tube Detectors for Very High Background Rates at SLHC*, ATLAS document, ATL-M-MN-0006, March 2007.

[35] O. Biebel, J. Dubbert, S. Horvat, O. Kortner, H. Kroha, R. Richter, D. Schaile, *Upgrade of the MDT Readout Chain for the SLHC*, ATLAS document, ATL-M-MN-0003, March 2007.

[36] O. Biebel, J. Dubbert, S. Horvat, O. Kortner, H. Kroha, R. Richter, D. Schaile, *Upgrade of the MDT Electronics for the SLHC Using Selective Readout*, ATLAS document, ATL-M-MN-0005, March 2007.

[37] J. Dubbert, S. Horvat, O. Kortner, H. Kroha, F. Legger, R. Richter, F. Rauscher, *Development of Precision Drift Tube Detectors for the Very High Background Rates at the Super-LHC*, proceedings of the 2007 IEEE Nuclear Science Symposium, Honolulu, Hawaii, USA, 28 October–2 November 2007, MPI report, MPP-2007-172, November 2007.

[38] . Dubbert, O. Kortner, H. Kroha, F. Legger, R. Richter, A. Engl, R. Hertenberger, F. Rauscher, *Precision Drift Tube*

Chambers for the ATLAS Muon Spectrometer at Super-LHC, proceedings of the 2008 IEEE Nuclear Science Symposium, Dresden, Germany, 19–25 October 2008, MPI report, MPP-2008-191, November 2008.

[39] . Bittner, S. Kaiser, O. Kortner, S. Kotov, H. Kroha, I. Potrap, R. Harrington, J. Love, N. Nation, *Alignment of the ATLAS Muon Spectrometer with Muon Tracks*, proceedings of the 2008 IEEE Nuclear Science Symposium, Dresden, Germany, 19–25 October 2008, MPI report, MPP-2008-192, November 2008.

[40] . Potrap, B. Bittner, S. Kaiser, O. Kortner, S. Kotov, H. Kroha, *Alignment of the ATLAS Muon Spectrometer with Tracks*, proceedings of the 11th Pisa Meeting on Advanced Detectors, Isola d'Elba, Italy, 24–29 May 2009, Nucl. Instr. and Meth. **A617** (2010) 186-187.

[41] . Bittner, J. Dubbert, O. Kortner, H. Kroha, F. Legger, R. Richter, O. Biebel, A. Engl, R. Hertenberger, F. Rauscher, *Development of Muon Drift-Tube Detectors for High-Luminosity Upgrades of the Large Hadron Collider*, proceedings of the 11th Pisa Meeting on Advanced Detectors, Isola d'Elba, Italy, 24–29 May 2009, Nucl. Instr. and Methods **A617** (2010) 169.

[42] . Bittner, J. Dubbert, S. Horvat, O. Kortner, H. Kroha, F. Legger, R. Richter, S. Adomeit, O. Biebel, A. Engl, R. Hertenberger, F. Rauscher, A. Zibell, *Development of Fast High-Resolution Muon Drift-Tube Detectors for High Counting Rates*, proceedings of the 12th Vienna Conference on Instrumentation, Vienna, Austria, 15–20 May 2010, MPI report, MPP-2010-xx, February 2010, submitted to Nucl. Instr. and Methods.

1.2 ATLAS Physics Analysis

Parallel to the construction of the detector components the MPI ATLAS group started the preparation of physics analysis of hadron collision data at the LHC. The results obtained in the years 1997-2006, including preparatory work based on Tevatron data, are described in the previous reports [1, 2], and references therein.

The present physics studies for the ATLAS experiment cover a broad physics range. Already at an early stage of data taking, a number of Standard Model processes will occur in abundance. These processes allow for detailed studies of the detector performance, as well as the precision measurement of QCD and electroweak observables, the top-quark physics being of particular interest. Good understanding of the Standard Model processes is essential also for the new discoveries. The ATLAS discovery potential is explored in the searches for the Higgs boson both in the Standard Model and in supersymmetric extensions, as well as in a generic search for supersymmetric particles.

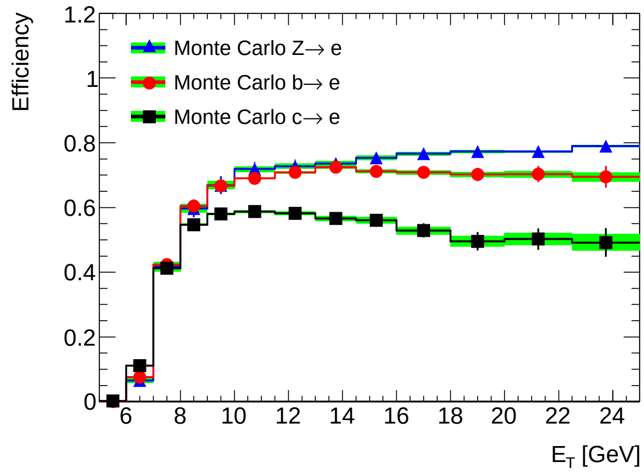

Figure 1.12: Monte-Carlo prediction of electron reconstruction efficiency for electrons from heavy quark and Z boson decays after the optimization of the electron identification cuts.

The ongoing studies are described in more detail below.

1.2.1 Measurement of inclusive lepton cross sections

At the LHC pp collision events with highly energy electrons and muons in the final provide clean signatures for many physics processes of interest. A good understanding of the inclusive electron and muon cross section is therefore of great importance. The MPI group contributes to the measurement of the inclusive electron and muon cross section.

At the LHC electrons are produced predominantly produced in decays of heavy quarks for transverse momenta below about 30 GeV/c and in decays of W and Z boson at higher transverse momenta. The MPI group significantly contributed to the optimization of the electron selection criteria to arrive at an electron selection efficiency which is flat in the transverse electron momentum (see Figure 1.12). The first measured inclusive electrons spectrum at a centre-of-mass energy of 7 TeV at the LHC shown in Figure 1.13 agrees with the prediction of the Pythia minimum bias Monte-Carlo prediction within about 20%. The MPI group contributes to the analysis of this discrepancy with increasing statistics of the inclusive electron sample.

The MPI group is also involved in the measurement of the inclusive muon cross section contributing with its experience in muon performance studies. The measured inclusive muon p_T spectrum is presented

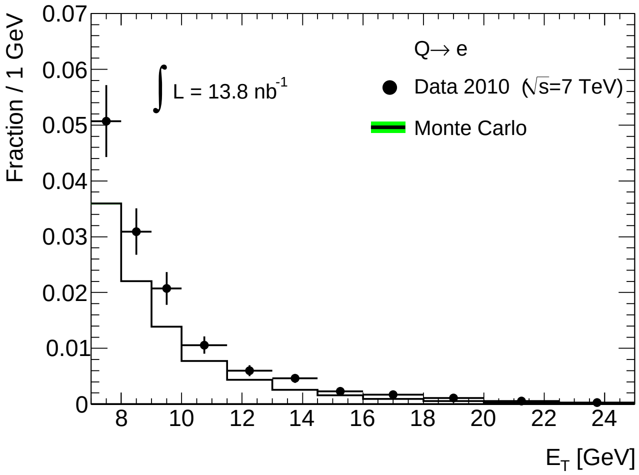

Figure 1.13: Comparison of the measured distribution of the transverse energies of prompt electrons from c and b decays with the Pythia 6.4 minimum bias Monte-Carlo predictions.

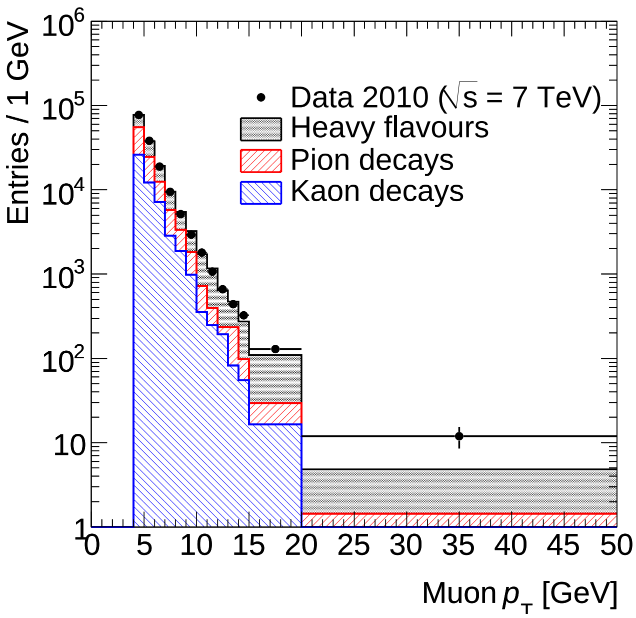

Figure 1.14: Comparison of the measured inclusive muon transverse momentum spectrum with the Pythia 6.4 minimum bias Monte-Carlo prediction. The Monte-Carlo data is decomposed into the three sources of muons, namely in-flight decays of charged pions and kaons and the decays of heavy-flavour hadrons.

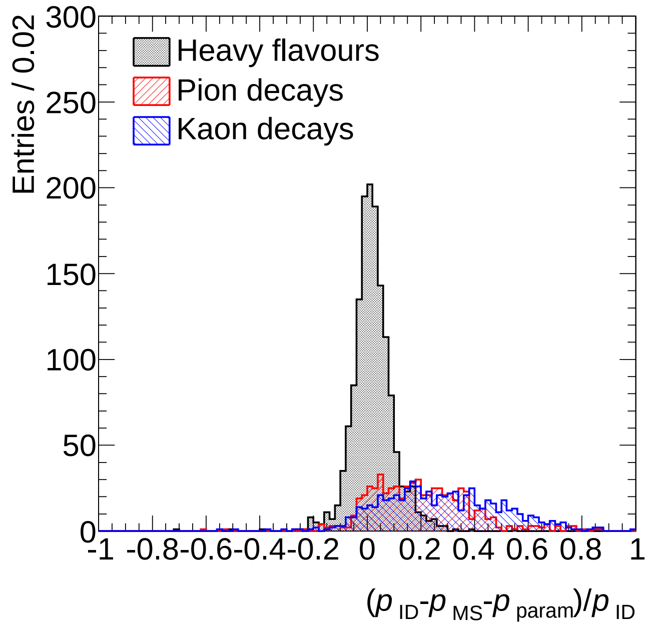

Figure 1.15: Distribution of the difference of the muon momentum measurements in the inner detector and the muon spectrometer normalized to the inner detector momentum measurements in simulated data. Decays of pions and kaons in flight lead to a large tail to positive values as the inner detector measures the pion and kaon momentum while the muon spectrometer measures the momentum of the decay muon.

in Figure 1.14 where it is compared with the Pythia 6.4 minimum bias Monte-Carlo prediction. The measured spectrum is well reproduced by the Monte-Carlo simulation. The main sources of the muon at transverse momenta below 20 GeV/c are in-flight decays of charged pions and kaons and the decays of heavy-flavour hadrons according to the Monte-Carlo simulation. Decays of W and Z bosons become important for $p_T > 20$ GeV/c. The contribution of pion and kaon decays in-flight to the inclusive muon spectrometer will be estimated from data by comparing the momentum measured in the inner detector with the momentum measured in the muon spectrometer. For late pion and kaon decays in the inner detector lead to a large momentum inbalance between the inner detector and muon spectrometer as illustrated in Figure 1.15.

1.2.2 Study of Standard Model Processes

Standard Model processes are studied with the motivation of estimating the backgrounds to the production of Higgs bosons and supersymmetric particles from the data and to improve the Monte Carlo simulations. The processes under investigation are QCD high p_T and multi-jet production, forward jet production, b jet production, inclusive W, Z and $t\bar{t}$ production as well as $Z \to \tau^+\tau^-$ decays. $Z \to e^+e^-$ and $\mu^+\mu^-$ decays are being studied for the purpose of detector calibration and data quality monitoring. The analysis methods developed will be applied to first measurements of multi-jet, $b\bar{b}$ and inclusive W and Z production cross-sections with the early data.

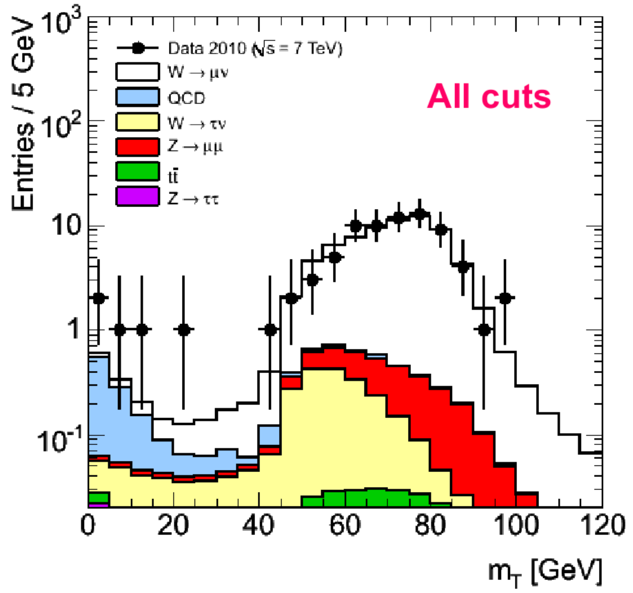

Figure 1.16: Transverse mass distribution of $W \rightarrow \mu\nu_\mu$ candidates found in the first 16 nb^{-1} of pp collision data collected by ATLAS.

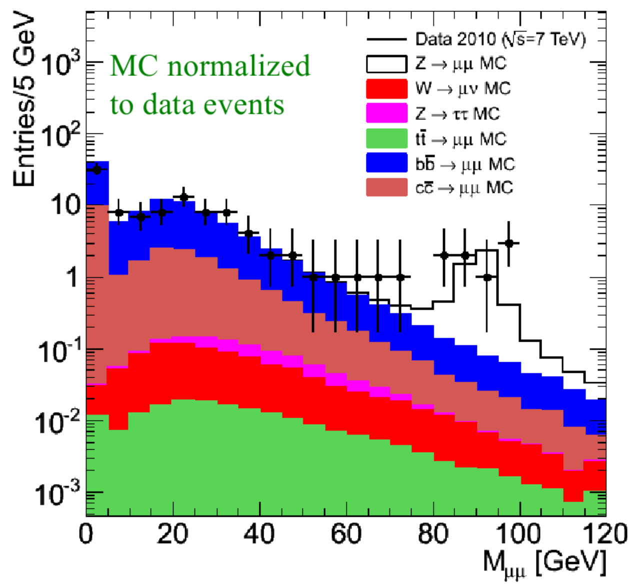

Figure 1.17: Invariant dimuon invariant mass distribution for isolated muonss in the first 16 nb^{-1} of pp collision data collected by ATLAS. An excess of 8 Z events is visible in the distribution consistent with the Monte-Carlo prediction.

Figure 1.16 shows the transverse mass distribution of the $W \rightarrow \mu\nu_\mu$ candidates in the first 16 nb^{-1} of pp collision data collected by ATLAS. The measured distribution is consistent with the Monte-Carlo prediction and has a negligible background contamination. In the same set of pp collision data ATLAS has observed 8 Z boson candidates as can be seen as an excess of entries at the Z mass in the dimuon mass spectrum of Figure 1.17.

1.2.3 Top-Quark Physics

The top-quark is by far the heaviest elementary building block of matter. Therefore it should have the strongest couplings to any mechanism that generates mass, which makes it a very interesting object for an unbiased search for this mechanism. In addition, the precise knowledge of the quantum numbers of the top-quark helps to further constrain the parameters of the Standard Model, and is a mandatory prerequisite for any study of new physics that will almost inevitably suffer from top-quark reactions as background processes.

The main interest of the top-physics analyses work of the MPI group is the investigation of the $t\bar{t}$ production process, and particularly the determination of the mass of the top-quark and the $t\bar{t}$ production cross-section in the reaction $t\bar{t} \rightarrow b\bar{b}W^+W^-$. The emphasis in these two measurements is rather different. For the mass measurement all systematic effects that may change the obtained mass and resolution are important, in contrast, for the cross-section measurement the main emphasis is on the detailed understanding of all efficiencies.

The analyses use two decay channels of the W-boson pair, the semi-leptonic channel, where the W-boson pair decays into $\ell\nu qq'$ with $\ell = e, \mu$, (30% branching ratio) and the full-hadronic channel, where both W-bosons decay into a qq' pair (44% branching ratio). In both channels, the mass of the top-quark will be obtained from hadronically decaying W-bosons and the corresponding b-jet.

The main background reactions, as determined from Monte Carlo simulations, are the W+N-jets production and that fraction of the $t\bar{t}$ production, where the W-boson pair decays into the other decay channels. An additional potential background process is the QCD multi-jet production, especially for the analyses of the full-hadronic channel. For this background, in the semi-leptonic channel, the lepton candidate stems either from a semi-leptonic decay of a heavy quark of the QCD multi-jet final state, or from instrumental background. Before any selection, this background is huge, such that event samples covering the full phase space cannot be simulated, and eventually this background contribution has to be obtained from the data themselves. At present, only initial studies of this back-

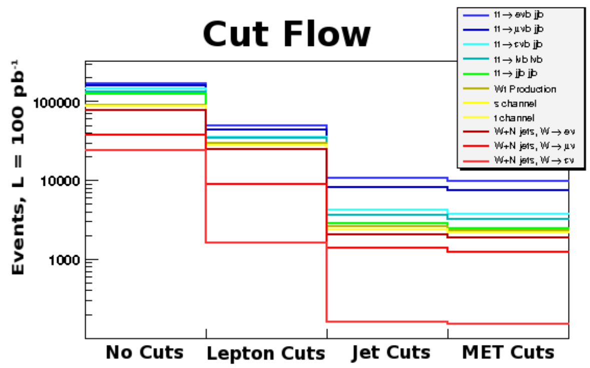

Figure 1.18: Event composition in the semi-leptonic sample.

ground have been performed, and it is not included in the numbers quoted below. In the semi-leptonic channel the charged leptons with high transverse momenta from the decay of one W-boson are utilized to identify the event and to efficiently suppress background from the QCD multi-jet production. In the full-hadronic channel only kinematic requirements can be used, therefore, this channel suffers from a much higher background from QCD multi-jet production.

The event selection for the semi-leptonic channel requires an isolated electron or muon within the good acceptance of the detectors, which has a transverse momentum of more that 20 GeV and lies within the rapidity range of $|\eta| < 2.5$. To account for the neutrino, a missing transverse energy of more than 20 GeV is required. In addition, at least four jets are required within the same range of rapidity, and having transverse momenta of more than 40 GeV for the three highest p_t-jets, and more than 20 GeV for the fourth jet. All jets should be well separated from the identified lepton. The event composition for the main steps of the selection are shown in Fig. 1.18. With this selection, an average signal efficiency of about 20 (30)% is reached for the electron (muon) samples, and the signal to background ratio improves by a factor of ten to about 1.6. For the full-hadronic channel the requirements on the isolated lepton and the missing transverse energy are inverted. In addition, at least six jets, well separated from electrons, are required within the same region of rapidity, and having transverse momenta of more than 20 GeV. Here, the selection efficiency is about 25 % but the amount of QCD and W+N-jets background has yet to be evaluated.

The $t\bar{t}$ production is not only of prime physics interest, but also presents a very clean event sample to improve on the reconstruction algorithms. Of key importance are the b-tagging performance and the calibration of the jet energy scale, which at present constitutes the most important uncertainty on the mass of the top-quark as determined at the Tevatron collider. Since a rather clean sample of $t\bar{t}$ events can be selected without employing b-tagging, and the b-quarks are mostly the highest p_t jets, the performance of the b-tagging algorithms can be studied in an rather unbiased sample. The jet calibration can make use of the fact that the invariant mass of the qq' pair stemming from the W-boson decay has to match the known W-boson mass.

The steering of the b-tagging algorithm is a compromise of efficiency and purity, while attaining an acceptable rejection rate for jets originating from light quarks. This light jet rejection rate is most important for suppressing events from QCD multi-jet production, which is dominated by jets from light quarks. Similarly, it helps to suppress the W+N-Jets background. The b-tagging performance has been studied for a standard ATLAS algorithm as a function of the jet algorithms, when requesting a 50% b-tagging efficiency for all collections. In this situation, the light jet rejection varies from about 100 to 700 with the inclusive k_t-jet algorithm for $R = 0.4$ (see below for a definition) giving the best performance.

Both semi-leptonic and full hadronic top-pair events allow for a so-called in-situ calibration of the jet energy scale. The known mass of the W can be used to constrain the energy of the light quark jets from the hadronic W decays either to apply a final calibration step especially in early data taking where the uncertainty in the jet energy scale is expected to be large, or to verify the applied calibration.

Based on generated $t\bar{t}$ events from the MC@NLO Monte Carlo program, and W+N-jets as predicted by the Alpgen generator, an analysis has been performed to obtain the mass of the top-quark in the semi-leptonic channel. For each event, the four jets with the highest transverse momenta are assumed to stem from the $b\bar{b}$ and qq' systems. They are grouped to obtain the estimate of the masses of the hadronically decaying W-boson and the associated top-quark. At present, the three jet combination which maximizes the transverse momentum is chosen to form the hadronically decaying top-quark. Out of this, the two jet combination that results in an invariant mass closest to the known W-boson mass is taken to represent the W-boson. In future other choices will be compared to this. The spectrum in Fig. 1.19 is fitted with a Gaussian function to parameterize the correct combinations leading to the

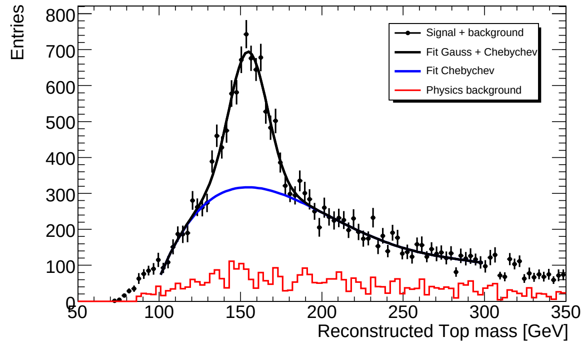

Figure 1.19: Fit to reconstruct the top-quark mass for a sample containing $t\bar{t}$ and W+N-Jets events.

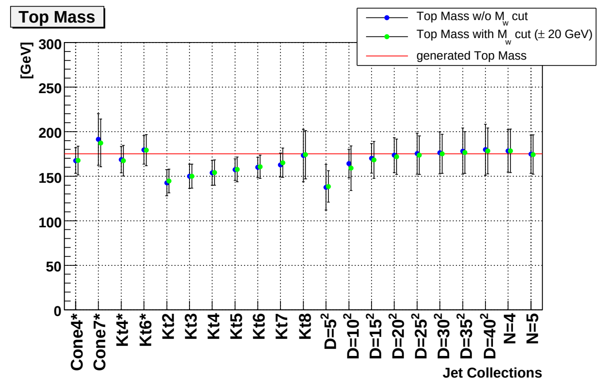

Figure 1.20: Top-quark mass value and uncertainty as a function of the parameters of the jet algorithms.

top-quark mass and width, and a sum of Chebyshev polynomials used to describe the background stemming from the W+N-jets events and wrong jet combinations in signal events. This figure shows the result when using the inclusive k_t-jet algorithm and $R = 0.4$. The central value of the fitted spectrum as well as the width of the distribution strongly depend on the choice of the jet algorithm and jet steering parameters, the calibration of the calorimeters, and various other details of the analysis. Using the present status of the knowledge of the jet energy scale, a detailed study of the dependence of the reconstructed top-quark mass on the jet algorithms and their parameters has been performed [4] using only $t\bar{t}$ events where at least on W-boson decays leptonically, and with a top-quark mass of 175 GeV. Fig. 1.20 shows the results for the cone-jet algorithm, and the k_t-jet algorithm in the E recombination scheme, and using both the inclusive and the exclusive mode, as function of the parameters of the jet algorithms. The abbreviations at the horizontal axis denote the algorithm and the values for the steering parameters, i.e. the value of R for the radius of the cone-algorithm and the distance parameter R for the k_t-jet algorithm. The exclusive k_t-jet algorithm modes are indicated by the invariant mass cut, e.g. $D = 5^2\,\text{GeV}^2$, or the requested jet multiplicity, e.g. $N = 4$. All collections use calibrated top cluster as input, the * denotes an additional calibration based on cone-jets with $R = 0.4$. In this study, for the first time the k_t-jet algorithm has been used in top physics analyses at ATLAS. Because of its better stability against divergences, this algorithm is theoretically preferred over the traditionally applied cone-jet algorithm. One result of the investigation is that values of the R-parameter of $R = 0.4 - 0.5$ (Kt4 and Kt5 in Fig. 1.20) are much preferred over the default value of $R = 1$ (not shown anymore), since for the latter choice for many events the two jets stemming from the W-Boson decay are merged into one reconstructed jet, thereby resulting in a loss of the event. On the vertical axis Fig. 1.20 the mean value and the sigma of the Gaussian are shown for the standard selection described above, and when using the additional requirement that the reconstructed mass of the W-boson coincides with the known mass to within 20 GeV. A good performance is signalled by small variations of the mean value when changing the steering parameter, and a small ratio of width and mean. In contrast, the absolute value mainly reflects the present level of calibration, which can be seen e.g. be comparing Kt4 and Kt4*. This means the best performance is achieved with the inclusive k_t-jet algorithm and medium values for R, around $R = 0.4 - 0.5$. The requirement on the W-boson mass does not improve on the mass determination. Clearly, the final value of the R-parameter needs to be found once the calibration of the hadronic calorimeters is finalized.

As stated above, the jet assignment to the W-boson and top decay products is not unique and also not very efficient. For comparison, at the Tevatron ist has been found that the correct jet-to-quark assignment is only achieved in about 40% of the cases. This led to the development of the matrix element method in which, rather than choosing one particular combination, each combination is considered, and weighted by the corresponding probability, given by the matrix element. In order to better understand the jet assignment and resolution, and to find new observables to further suppress the W+N-Jets background, an analysis has been performed investigating the correlation of jets reconstructed from stable hadrons to jets reconstructed from calo topo clusters. Here, a pair of jets is called matched

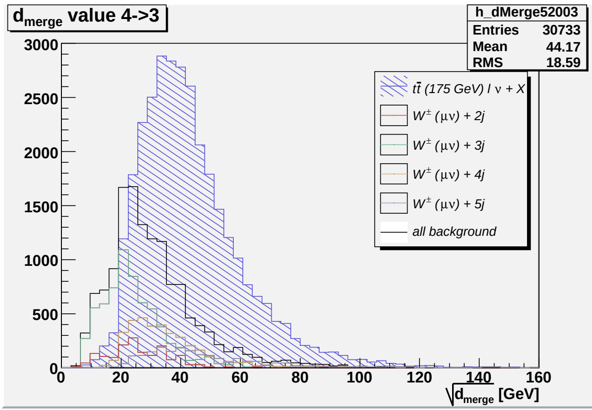

Figure 1.21: The $d_{\text{merge}}(4 \rightarrow 3)$ distribution for signal and background.

if for a stable hadron jet the closest reco jet falls within a distance of $\Delta R = 0.15$, where each reco jet can only be assigned to one stable hadron jet. For the signal sample, it has been found that the overall matching efficiency is 92%, rather constant in rapidity but with a steep turn-on at low transverse momenta.

The separation of jets can be monitored when running the k_t-jet algorithm by studying the $d_{\text{merge}}(M \rightarrow M-1)$ values at which an M-Jet configuration is reduced to an (M-1)-Jet configuration. For sufficiently different jet structure in signal and background events, this event shape variable can be used as discriminator. As an example, the $d_{\text{merge}}(4 \rightarrow 3)$ distribution is shown in Fig. 1.21 for signal and W+N-Jets background events with $N = 2-5$ and $W \rightarrow \mu\nu$ deacys. For this distribution, the semi-leptonic event selection has been performed. Clearly, the tail at low values is more pronounced for the background events, e.g. requiring $d_{\text{merge}}(4 \rightarrow 3) > 20\,\text{GeV}$ reduces the signal efficieny by only about 2%, while improving the purity by about 5%. The implication on the reconstructed top-quark mass is under study.

Concerning the cross-section measurement a self consistent analysis has been performed for the semi-leptonic channel by declaring one tenth of the signal and background samples as data, and using the remaining events to obtain the signal efficiency and perform the background subtraction. With this, the input cross-section could be recovered and the analysis now moves on to obtain systematic uncertainties.

Inevitably, one main initial uncertainty will come from the luminosity determination, which is provided by external measurements. Another important ingredient is the trigger efficiency. For the semi-leptonic channel it is found that an efficient trigger is provided by the leptons of high transverse momenta. The trigger efficiency for the signal sample is about 80 (90)% for the electron (muon) sample, rather flat in rapidity (when excluding crack regions), and with a steep turn-on at transverse momenta around 20 GeV. A sub-sample of these events is also triggered by jet triggers, allowing for an unbiased determination of the lepton trigger efficiencies. Utilising this, the next step is to obtain a trigger efficiency grid in transverse momenta and rapidity of the leptons for correcting the data.

In conclusion, initial analyses have been performed for both the mass and the cross-section measurements investigating some sources of systematic uncertainties. The future work will concentrate on investigations of other sources of systematic uncertainties.

1.2.4 Searches for the Higgs Boson

The Standard Model Higgs Boson

The origin of particle masses is one of the most important open questions in particle physics. In the Standard Model, the answer to this question is connected with the prediction of a new elementary particle with spin 0, the Higgs boson H. The discovery of the Higgs boson, the last missing particle of the Standard Model, is the main motivation for the LHC experiments. The mass of the Higgs boson is not predicted by the theory. The present experimental lower bound of 115 GeV/c^2 and the theoretical upper limit of about 1 TeV/c^2 require a wide mass range to be explored. The preferred Standard Model Higgs mass range derived from the precision measurements of the parameters of the electroweak gauge theory is below 200 GeV/^{2}.

In the mass range above 180 GeV/c^2, the key discovery channel which also provides a direct measurement of the Higgs boson mass is the Higgs decay into four charged leptons via two intermediate Z bosons. The lower mass range can be covered by searches for several Higgs decay modes (see Fig. 1.22). Although the ATLAS detector has been designed for a discovery of the Higgs boson over the full mass range, Higgs boson searches at the Large Hadron Collider remain challenging because of the high cross sections of the background processes exceeding the signal by many orders of magnitude. Selective triggers, efficient background suppression and reliable prediction of the background contributions are essential.

Our present studies focus on the preparation for an early discovery of the Higgs boson during the first years of running at the initial LHC luminosity

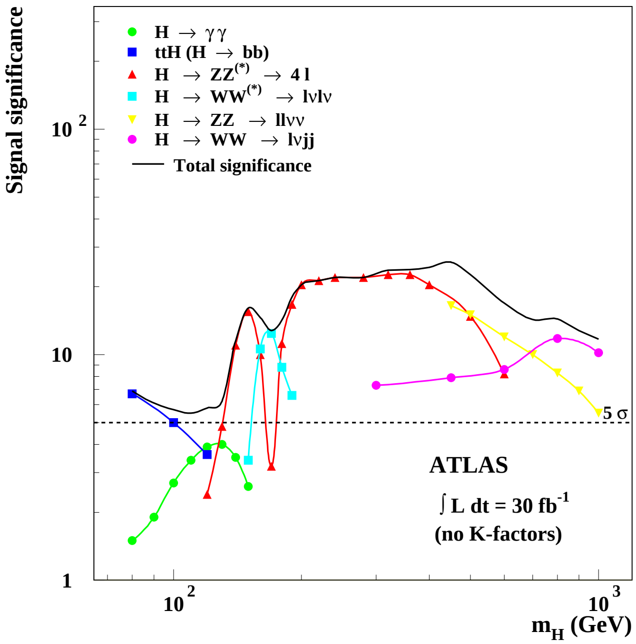

Figure 1.22: Discovery potential of the ATLAS experiment for the Standard Model Higgs boson. The statistical significance expected for an integrated luminosity of 30 fb^{-1} is shown for the different Higgs decay modes discussed in the text and their combination as a function of the Higgs boson mass in the range below 200 GeV/c^2 preferred by previous precision tests of the Standard Model. The grey shaded region has been excluded by direct Higgs boson searches of the experiments at the LEP e^+e^- collider.

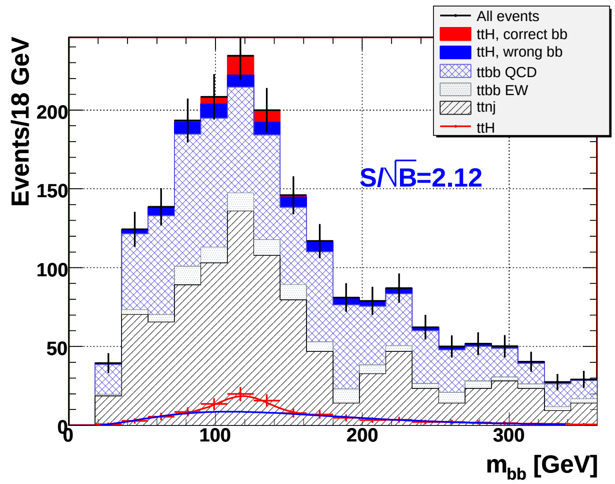

Figure 1.23: Invariant mass distribution of reconstructed $b\bar{b}$ jet pairs in simulated $pp \to t\bar{t}H$, $H \to b\bar{b}$ events with a Higgs mass of 120 GeV/c^2 together with the contributions from $t\bar{t}b\bar{b}$ and $t\bar{t}jj$ background for an integrated luminosity of 30 fb^{-1}. The red and the blue curves show the correct and the wrong $b\bar{b}$ combinations in the signal events, respectively.

of 10^{33} cm^{-2}s^{-1}. In the first year of LHC operation, accumulation of a data sample corresponding to an integrated luminosity of 1 − 10 fb^{-1} is expected. Within three years of stable running of the experiment, 30 fb^{-1} of data can be collected. As described in the following, most of the Higgs boson decay channels which are promising for a discovery are investigated by our group. Detection and comparison of signals in several decay modes will be crucial to confirm the existence of the Higgs boson and to distinguish between the predictions of the Standard Model and of its possible extensions. The analyses are performed with detailed Monte Carlo simulations of the signal and background processes in the ATLAS detector using the latest description of the detector geometry and performance.

In the mass region below 120 GeV/c^2, the Higgs boson predominantly decays into $b\bar{b}$ pairs. Due to large QCD background in the gluon-fusion production mode, this decay can only be triggered and discriminated from the background in the production mode of the Higgs boson in association with a $t\bar{t}$ pair. Our analysis [5] uses a neural network based discrimination method to study the observability of the $t\bar{t}H \to (\ell\nu b)(qqb)(b\bar{b})$ channel, where one top quark decays semileptonically providing a high momentum lepton trigger and the other one hadronically. Four bottom quark jets have to be identified in these complex final states.

Fig. 1.23 shows the invariant-mass distributions of the correct and the wrong $b\bar{b}$ combinations in the signal events, as well as the contributions from irreducible ($pp \to t\bar{t}b\bar{b} + X$) and reducible ($pp \to t\bar{t}jj + X$) background. The signal significance $S/\sqrt{B} \approx 2$ determined from the numbers of signal (S) and background (B) events in a $2\sigma_m$ mass window around the simulated Higgs mass of 120 GeV/c^2 does not include systematic uncertainties. Due to the relatively low efficiency of the b jet reconstruction and the similarity of the $b\bar{b}$ invariant mass distributions for signal and background, high integrated luminosity and a precise determination of the Standard Model background contributions from data is needed for an observation of the Higgs boson in this channel. We work on improvements of the signal discrimination from the background and on methods to estimate the background contributions from the first LHC data which are essential for the detection of the Higgs boson in this decay channel.

A feasibility study has been performed of the d tection of $H \to b\bar{b}$ decays in the Higgs productic process by W or Z gauge boson fusion [6]. As f other Higgs decay modes (see below), the associate forward-jet production and corresponding central j suppression provide signatures for additional bac ground rejection. The trigger efficiency for this pr cess with standard ATLAS lepton and jet triggers wa found to be acceptable. However, the background rat especially from direct $b\bar{b}$ production, is too high f identifying a signal in this channel.

The second most frequent Higgs decay mode whic can be observed in the mass range below 140 GeV/c is the decay into a $\tau^+\tau^-$ pair. This decay can on be discriminated against background processes in th Higgs production mode via vector-boson fusion whe two additional forward jets in the final state provide signature for background rejection. The decay mode with both τ leptons decaying leptonically as well a with a hadronic and a leptonic τ decay have been stu ied. The selection criteria have been optimized usir multivariate analysis techniques. The $\tau^+\tau^-$ invaria mass is determined under the approximate assumptic that all τ decay products are emitted in the directic of the τ lepton. The expected invariant mass distribu tion for the signal of a 120 GeV/c^2 Higgs boson ar backgrounds is shown in (Fig. 1.24).

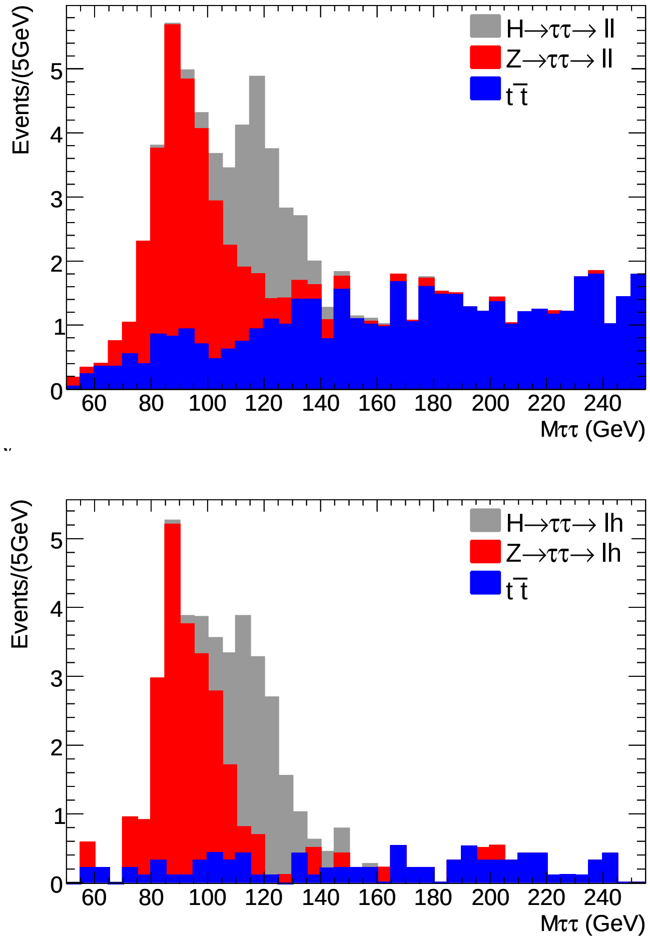

Figure 1.24: Invariant τ pair mass distribution in simulated $H \to \tau^+\tau^-$ decays in vector-boson fusion production with a Higgs mass of 120 GeV/c^2 together with background contributions from $t\bar{t}$ and $Z+$jets production for an integrated luminosity of 30 fb^{-1}. The two τ leptons have been reconstructed either both in purely leptonic decays (top picture) or one in leptonic and the other one in hadronic decay mode (bottom picture).

The mass range above 130 GeV/c^2 can be covered with the decay $H \to W^+W^- \to (\ell\nu)(\ell\nu)$ both in gauge-boson fusion and, at higher masses, in gluon fusion production. Parallel to the optimization of the event selection for these channels, we are studying the performance of the forward-jet reconstruction and of the veto against central jet production, which are used for the suppression of the $t\bar{t}$ and $WW+$jets backgrounds to the vector boson fusion production processes. A new jet reconstruction algorithm using particle tracks in the inner detector instead of energy deposition in the calorimeters has been developed [7]. The tracks forming a jet can be associated to a common vertex suppressing the reconstruction of spurious jets in the presence of multiple proton-proton interactions per beam collision (pile-up events) and, thereby, improving the effiency of the central jet veto.

While this decay channel allows for fast Higgs boson discovery with an integrated luminosity of less than 10 fb^{-1}, it cannot provide a precise measurement of the Higgs mass because of the two neutrinos in the final state. Precise determination of the background contributions is, therefore, required to observe an excess of signal events. For this pupose, we are studying the measurement of the Standard Model background processes with the early LHC data.

Above a Higgs mass of 130 GeV/c^2 the clearest signature is found in the four-lepton decay $H \to ZZ^{(*)} \to 4\ell$ which also allows for precise Higgs mass measurement. The reconstruction of this channel strongly relies on the high lepton-identification efficiency and good momentum resolution of the ATLAS detector. Our initial analysis of the four-muon final state [8] has been extended to include also the four-electron and $2e2\mu$ final states. The reducible $pp \to t\bar{t}+X$ background can be rejected by requiring lepton isolation and cutting on the masses of the reconstructed Z bosons.

After the optimization of the cuts, the contributior of the $t\bar{t}$ and $Z + b\bar{b}$ backgrounds become small com pared to the irreducible $pp \to ZZ^{(*)} + X$ backgroun Fig. 1.25 shows the four-lepton invariant mass distr butions for $H \to ZZ^{(*)} \to 4\ell$ decays with 130 GeV/c and 300 GeV/c^2 Higgs mass and for the backgroun processes corresponding to an integrated luminosity c 10 fb^{-1} [9]. The first one is the most difficult case a the lower end of the sensitive mass range where th decay branching ratio becomes very small. For com parion, for a Higgs mass of 300 GeV/c^2, the $H \to Z$ decay reaches the maximum of its branching ratio an is the best channel for discovering the Higgs boson Our recent studies include the precise determinatio of the background contributions from the data and the influence of pile-up events and radiation background in the ATLAS cavern.

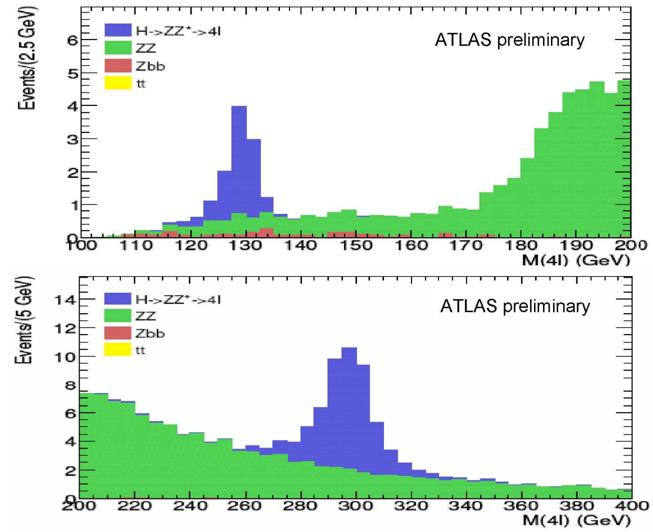

Figure 1.25: Four lepton invariant mass distribution in simulated $pp \to H \to ZZ^{(*)} \to 4\ell$ events with a Higgs mass of 130 GeV/c^2 (top picture) and of 300 GeV/c^2 (bottom picture) together with the background contributions from $t\bar{t}$ and $ZZ^{(*)}$ production for an integrated luminosity of 10 fb^{-1} [9].

Higgs Bosons Beyond the Standard Model

The minimal supersymmetric extension of the Standard Model (MSSM) predicts the existence of five Higgs bosons, a relatively light neutral one h behaving like the Standard model Higgs boson, two heavy neutral ones H and A and two heavy charged Higgs bosons $H^{\pm}$. Their production cross sections and decay branching ratios are determined by two independent parameters, e.g. the ratio $\tan\beta$ of the vacuum expectation values of the two Higgs doublets in this model and the pseudoscalar Higgs boson mass m_A where the production cross sections increase with $\tan\beta$ and fall with increasing m_A.

The neutral Higgs decay modes into two intermediate gauge bosons are suppressed in this model. On the other hand, the A or H boson decays into charged lepton pairs, $\mu^+\mu^-$ and $\tau^+\tau^-$, are enhanced compared to the Standard Model. The latter decay channel has an about three hundred times higher branching ratio than the first one but is more difficult to reconstruct and provides a less precise Higgs mass determination. Final states with both τ leptons with one hadronic and one leptonic τ decay have been studied.

In spite of the enhanced MSSM production rate, the signal events are still hidden under large $Z \to \mu^+\mu^-/\tau^+\tau^-$ and $t\bar{t}$ backgrounds. The detection of the b quark jets in the $gg \to b\bar{b}(A/H) + X$ production process, which dominates for large $\tan\beta$ and m_A, allows for strong background rejection. Additional background suppression is achieved by requiring large angular separation between the two decay leptons. Fig. 1.26 shows the invariant mass distributions of the lepton pairs in MSSM $A/H \to \mu^+\mu^-$ [10] and $A/H \to \tau^+\tau^-$ [11] decays together with the constributions from competing background processes corresponding to 30 fb^{-1} of integrated luminosity. In Fig. 1.27, the regions of the $\tan\beta$–m_A parameter space in which the $A/H/h \to \mu^+\mu^-$ and the $A/H \to \tau^+\tau^-$ signal, respectively, can be detected with a significance of at least 5 standard deviations are shown for an integrated luminosity of 10 fb^{-1} [10],[11]. The discovery region for the $A/H \to \tau^+\tau^-$ decays is extended compared to the $A/H \to \mu^+\mu^-$ channel to smaller $\tan\beta$ values by about a factor of 5 at the lower end of the A boson mass range and more with increasing m_A.

The light neutral MSSM Higgs boson is difficult to distinguish from the Standard Model Higgs boson. Clear evidence for physics beyond the Standard Model would be provided by the discovery of charged scalar Higgs bosons. We have studied the search for the charged MSSM Higgs bosons in the decay channel $H^{\pm} \to \tau^{\pm}\nu_{\tau}$ which dominates for relatively small Higgs masses below 200 GeV/c^2. The charged Higgs bosons are produced in top quark decays in $pp \to t\bar{t} \to (bH^{\pm})(bW^{\mp})$ events. The τ leptons from $H^{\pm}$ decays are reconstructed in their hadronic decay modes while the W bosons from top quark decays are required to decay leptonically. Since the $H^{\pm}$ mass cannot be re-

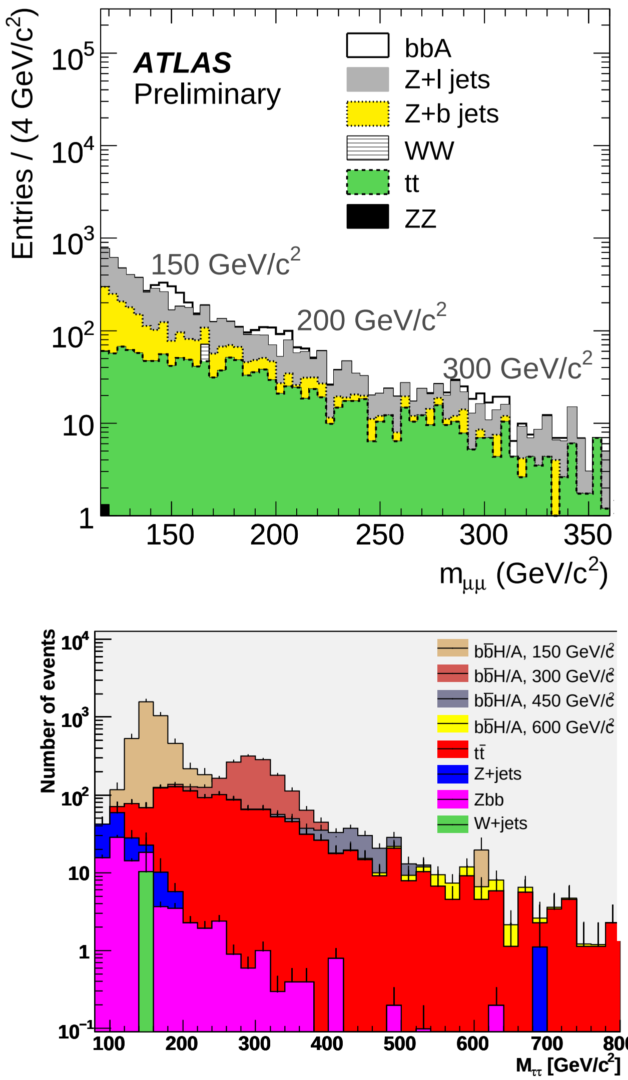

Figure 1.26: Invariant mass distributions of muon pairs in MSSM $A/H \to \mu^+\mu^-$ decays for Higgs masses m_A of 150, 200 and 300 GeV/c^2 (top picture) and of τ pairs in MSSM $A/H \to \tau^+\tau^-$ events for $m_A = 150$, 300, 450 and 600 GeV/c^2 together with the expected background contributions for $\tan\beta = 30$ and an integrated luminosity of 30 fb^{-1}.

constructed because of the undetected neutrinos in the final state, these events can only be distinguished as an excess of events with reconstructed τ leptons and large missing transverse energy above the high background of Standard model decays of top quark pairs and of $Z \to \tau\tau$ decays. In Fig. 1.28, the 5σ discovery region in the $\tan\beta$–$m_{H^\pm}$ plane for a charged Higgs boson in the above production and decay mode is shown for an integrated luminosity of 1 fb^{-1} assuming a systematic error on the background estimation of 10% [12]. We are developing methods for a reliable determination of

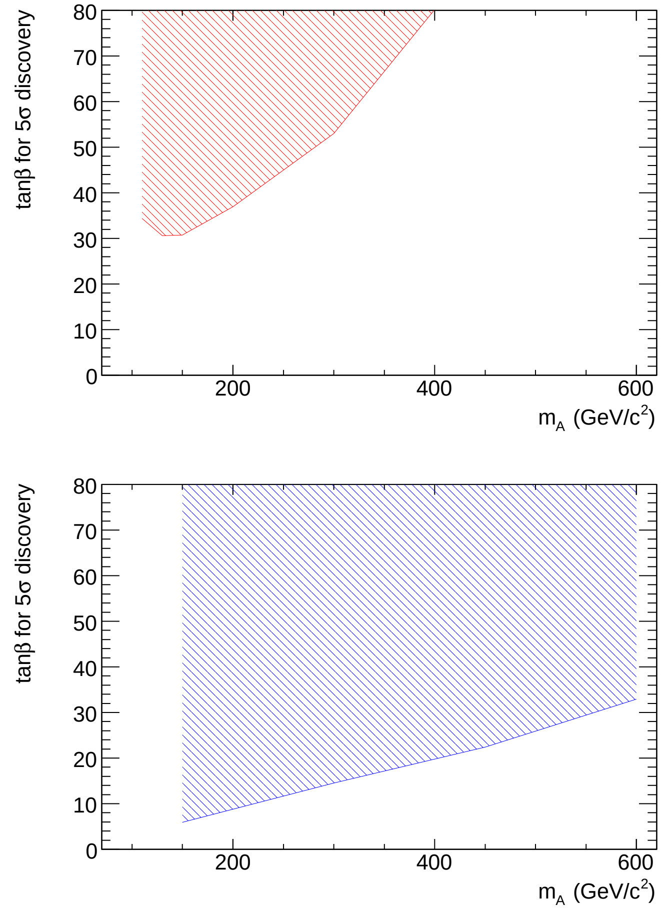

Figure 1.27: The regions of the $\tan\beta$-m_A parameter space (hatched) in which $A/H/h \to \mu^+\mu^-$ (top picture) and $A/H \to \tau^+\tau^-$ decays (bottom picture) can be observed with at least 5σ significance for an integrated luminosity of 10 fb^{-1}.

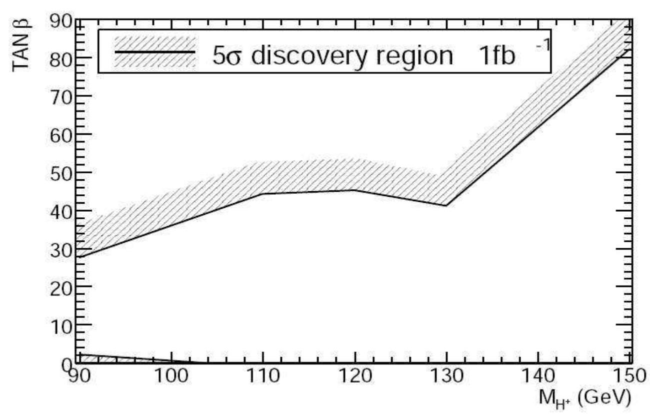

Figure 1.28: The region of the $\tan\beta$-$m_{H^\pm}$ parameter space (hatched region and above) in which charged Higgs decays $H^\pm \to \tau^\pm \nu_\tau$ can be observed with at least 5σ significance for an integrated luminosity of 1 fb^{-1}.

the background contributions from the LHC data using methods similar to the ones described in the next section.

1.2.5 Searches for Supersymmetric Particles

Supersymmetry (SUSY) is the most favoured extension of the Standard Model. The new symmetry uniting fermions and bosons predicts for each Standard Model particle a new supersymmetric partner with spin quantum number differing by $1/2$. Supersymmetry provides a natural explanation for Higgs boson masses near the electroweak scale if the supersymmetry breaking scale is not much higher. If, as expected in this case, the superpartners of the Standard Model particles, in particular squarks and gluinos (the superpartners of quarks and gluons with spin 0 and $1/2$, respectively) have masses below 1 TeV/c^2, they will be copiously produced at the LHC. Since details of the SUSY breaking mechanism are not known, possible supersymmetric extensions of the Standard Model populate a large parameter space preventing a prediction of the superpartner masses.

In supersymmetric models without R-parity violation, the superpartners eventually decay into the lightest supersymmetric particle which is stable and weakly interacting and escapes detection. Typical signatures for decays of supersymmetric particles in the ATLAS experiment are, therefore, large missing energy, energetic hadron jets and up to three leptons produced in the decay chain.

Our studies concentrate on the early discovery of such inclusive signatures of supersymmetric particle production and decays. The ATLAS detector is well equipped for such measurements. Reliable estimation of the background contributions from $t\bar{t}$, $W/Z+$jets and generic QCD jet production is the main concern. $t\bar{t}$ production is the dominant background for large missing energies where the signal is expected. With Monte Carlo simulations we have studied methods for determining the $t\bar{t}$ background from data [13]. First a pure background sample is selected using kinematic constraints specific for $t\bar{t}$ production. The properties of this control sample are then extrapolated to the SUSY signal region by replacing parts of the event topology by signatures specific for the signal events.

Fig. 1.29 shows the missing transverse energy distributions for supersymmetric particle decays with one and with two leptons in the final state, respectively, for a representative SUSY model together with the expected $t\bar{t}$ background after accumulation of only

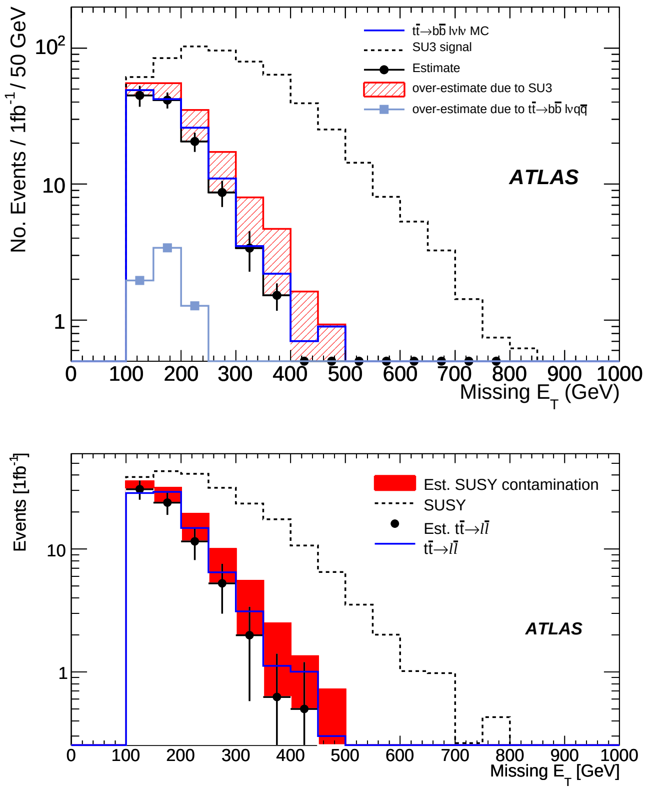

Figure 1.29: Missing transverse energy E_T^{miss} distributions for simulated supersymmetric particle decays with one (top pictures) and with two leptons (bottom picture) in the final state in a representative SUSY model (SU3) together with the $t\bar{t}$ backgrounds estimated from a control data sample (see text) for an integrated luminosity of 1 fb^{-1} [13]. The uncertainties in the background estimates due to contamination of the control sample with signal events are indicated.

1 fb^{-1} of integrated luminosity. The uncertainties in the background estimates due to contamination of the control sample with signal events are also shown. For the model studied, a clear excess of SUSY events above the background is visible at large missing transverse energy.

In addition, we persue searches for long-lived particles detectable only in the muon spectrometer and for lepton number violating τ decays into three muons which occur in various extensions of the Standard Model including many supersymmetric models.

References

[1] The MPI ATLAS group, *ATLAS Analysis*, Report to the Fachbeirat 1997–2003, (2004), 82-84.

[2] The MPI ATLAS group, *ATLAS Analysis*, Report to the Fachbeirat 2004–2006 Part II, (2006), 106-112.

[3] ATLAS Collaboration, *Detector and Physics Performance Technical Design Report*, CERN, Geneva (1999), LHCC 99-14/15.

[4] ATLAS collaboration, *Light jets in $t\bar{t}$ events*, ATLAS public note, May 2008.

[5] S. Kotov, S. Horvat, O. Kortner, H. Kroha, S. Mohrdieck-Möck, J. Yuan, *Search for the Standard Model Higgs Boson in the $H \to b\bar{b}$ Decay Channel in Associated Production with $t\bar{t}$ Using Neural Network Techniques*, ATLAS note, ATL-COM-PHYS-2007-099, December 2007.

[6] S. Horvat, O. Kortner, S. Kotov, H. Kroha, J. Yuan, *Feasibility Study of the Observability of the $H \to b\bar{b}$ Decay in Vector Boson Fusion Production with the ATLAS Detector*, ATLAS note, ATL-COM-PHYS-2008-007, January 2008.

[7] S. Kaiser, S. Horvat, O. Kortner, H. Kroha, *Study of Track Jets in VBF $H \to WW$ Production with Pile-up*, ATLAS Note, ATL-COM-PHYS-2008-019, March 2008.

[8] S. Horvat, *Study of the Higgs Discovery Potential in the Process $pp \to H \to 4\mu$*, Ph.D. thesis, Zagreb University and Max-Planck-Institut für Physik, MPI report, MPP-2005-35, April 2005.

[9] ATLAS collaboration, *Search for the Standard Model $H \to ZZ^{(*)}$ Decay with the ATLAS Detector*, ATLAS public note, May 2008.

[10] ATLAS collaboration, *Search for the Neutral MSSM Higgs Bosons in the Decay Channel $A/H/h \to \mu + \mu^-$*, ATLAS public note, May 2008.

[11] G. Dedes, *Study of the Higgs Boson Discovery Potential in the Process $pp \to H/A \to \mu^+\mu^-/\tau^+\tau^-$ with the ATLAS Detector*, Ph.D. thesis, Technische Universität München, MPI Report, MPP-2008-32, April 2008.

[12] ATLAS collaboration, *ATLAS Charged Higgs Boson Searches*, ATLAS public note, May 2008.

[13] ATLAS collaboration, *Data-driven determinations of W, Z and top background to supersymmetry searches at the LHC*, ATLAS public note, May 2008.

1.3 Publications

ATLAS Collaboration. *The ATLAS Experiment at the CERN Large Hadron Collider* Accepted for publication to JINST.

D. Costanzo, I. Hinchliffe, and S. Menke (Atlas). *Analysis Model Forum Report* ATL-GEN-INT-2008-001, MPP-2007-273.

W. Lampl, S. Laplace, H. Ma, S. Menke, and G. Unal (Atlas). *Digitization of LAr calorimeter for CSC simulations* ATL-LARG-PUB-2007-011, MPP-2007-272.

Klaus Gottstein. *Why do governments need independent scientific advice? Discussion remark following presentation of paper MPP-2007-270* 66–68. MPP-2007-271.

Klaus Gottstein and Nele Matz. *Political Problems Facing Governments in Using Scientific Advice, and Legal and Other Problems Facing Scientists when Trying to Give Independent Advice to Governments* . Atti Dei Convegni Lincei **230**, (2007), 33–45. MPP-2007-270.

Klaus Gottstein. *The State of Science Advising in Europe* . Atti dei Convegni Lincei **230**, (2007), 27–32. MPP-2007-269.

Klaus Gottstein. *Erinnerungen an Pugwash und an die Rolle der VDW als deutsche Pugwash-Gruppe* , vol. 332, 35–47 (MPI für Wissenschaftsgeschichte, Berlin). MPP-2007-268 (2007).

C. Alt, V. Eckardt, N. Schmitz, P. Seyboth, et al. (NA49). *Energy Dependence of Multiplicity Fluctuations in Heavy Ion Collisions* MPP-2007-267, `nucl-ex/0610046`.

C. Alt, V. Eckardt, N. Schmitz, P. Seyboth, et al. (NA 49). *Anisotropic Flow of Strange Particles at SPS* . PoS MPP-2007-266, `nucl-ex/0611003`.

J. Adams, V. Eckardt, N. Schmitz, P. Seyboth, et al. (STAR). *Two-particle correlations on transverse momentum and momentum dissipation in Au-Au collisions at $\sqrt{s_{NN}}$ = 130 GeV* . J.Phys.G **34**, (2007), 799–816. MPP-2007-265.

W Seidel, G Angloher, M Bauer, I Bavykina, A Bento, A Brown, C Bucci, C Ciemniak, C Coppi, G Deuter, Fv Feilitzsch, D Hauff, S Henry, P Huff, J Imber, S Ingleby, C Isaila, J Jochum, M Kiefer, M Kimmerle, H Kraus, J-C Lanfranchi, R Lang, M Malek, R McGowan, V Mikhailik, E Pantic, F Petricca, S Pfister, W Potzel, F Pröbst, S Roth, K Rottler, C Sailer, K Schäffner, J Schmaler, S Scholl, L Stodolsky, B Tolhurst, I Usherow-Marshak, and W Westphal. *The CRESST Dark Matter Search* . J.Phys.Conf.Ser. MPP-2007-264.

François Arleo, Redamy Perez Ramos, and Bruno Machet. *hadronic single inclusive k_T distributions inside one jet beyond MLLA* . Phys.Rev.Lett. **100**, (2008), 052002. MPP-2007-263, `arxiv:0707.3391`.

Redamy Perez Ramos, Francois Arleo, and Bruno Machet. *Next-to-MLLA corrections to single inclusive k_T distributions and 2-particle correlations in a jet* MPP-2007-262, `arxiv:0712.2212`.

The collaboration (OPAL). *Inclusive Jet Production in Photon-Photon Collisions at $\sqrt{(s_{ee})}$ from 189 to 209 GeV.* Phys.Lett.B **658**, (2008), 185–192. CERN-PH-EP/2007-016, MPP-2007-261, `arxiv:0706.4382`.

The collaboration (OPAL). *Search for invisibly decaying Higgs bosons in e+e- -> Z0h0 production at $\sqrt{(s)}$ = 183 - 209 GeV* CERN-PH-EP/2007-018, MPP-2007-260, `arxiv:0707.0373`.

The collaboration (OPAL). *Search for Direc Magnetic Monopoles in e+e- Collisions with the OPAL Detector at LEP2* CERN-PH-EP/2007-019, MPP-2007-259, `arxiv:0707.0404`.

The collaboration (OPAL). *Bose-Einstein study of position-momentum correlations of charged pions in hadronic Z0 decays* . Eur.Phys.J.C **52**, (2007), 787–803. CERN-PH-EP/2007-025, MPP-2007-258, `arxiv:0708.1122`.

The collaboration (OPAL). *Measurement of the e+e- -> W+W- cross section and W decay branching fractions at LEP* . Eur.Phys.J.C **52**, (2007), 767–785. CERN-PH-EP/2007-027, MPP-2007-257, `arxiv:0708.1311`.

The collaboration (LEP Collaborations, ALEPH , DELPHI , L3 , OPAL , the LEP Electroweak Working Group). *Precision Electroweak Measurements and Constraints on the Standard Model* CERN-PH-EP/2007-039, MPP-2007-256, `arxiv:0712.0929`.

Roland Härtel. *Alignment of the ATLAS Inner Detector* . PoS MPP-2007-255.

B. I. Abelev, V. Eckardt, N. Schmitz, P. Seyboth, et al. (STAR). *Measurement of Transverse Single-Spin Asymmetries for Di-Jet Production in Proton-Proton Collisions at* $\sqrt{s} = 200$ *GeV* . Phys.Rev.Lett. **99**, (2007), 142003. MPP-2007-254, `arxiv:0705.4629`.

B. I. Abelev, V. Eckardt, N. Schmitz, P. Seyboth, et al. (STAR). *Transverse momentum and centrality dependence of high-pt non-photonic electron suppression in Au+Au collisions at* $\sqrt{s_{NN}}$ *= 200 GeV* . Phys.Rev.Lett. **98**, (2007), 192301. MPP-2007-253, `nucl-ex/0607012`.

B. Abelev, V. Eckardt, N. Schmitz, P. Seyboth, et al. (STAR). *Partonic flow and* ϕ*-meson production in Au+Au collisions at* $\sqrt{s_{NN}}$ *= 200 GeV* . Phys.Rev.Lett. **99**, (2007), 112301. MPP-2007-252, `nucl-ex/0703033`.

J. Adams, V. Eckardt, N. Schmitz, P. Seyboth, et al. (STAR). *Scaling Properties of Hyperon Production in Au+Au Collisions at* $\sqrt{s_{NN}}$ *= 200 GeV* . Phys.Rev.Lett. **98**, (2007), 062301. MPP-2007-251, `nucl-ex/0606014`.

B. Abelev, V. Eckardt, N. Schmitz, P. Seyboth, et al. (STAR). *Forward Lambda Production and Nuclear Stopping Power in d + Au Collisions at* $\sqrt{s_{NN}}$ *= 200 GeV* . Phys.Rev.C **76**, (2007), 064904. MPP-2007-250, `arxiv:0706.0472`.

B. Abelev, V. Eckardt, N. Schmitz, P. Seyboth, et al. (STAR). *Rapidity and species dependence of particle production at large transverse momentum for d+Au collisions at* $\sqrt{s_{NN}} = 200\,GeV$. Phys.Rev.C **76**, (2007), 054903. MPP-2007-249, `nucl-ex/0609021`.

B. I. Abelev, V. Eckardt, N. Schmitz, P. Seyboth, et al. (STAR). *Global polarization measurement in Au+Au collisions* . Phys.Rev.C **76**, (2007), 024915. Star-05-11-2007, MPP-2007-248, `arxiv:0705.1691`.

B. Abelev, V. Eckardt, N. Schmitz, P. Seyboth, et al. (STAR). *Strangelet Search in AuAu Collisions at 200 GeV* . Phys.Rev.C **76**, (2007), 011901. MPP-2007-247, `nucl-ex/0511047`.

B. Abelev, V. Eckardt, N. Schmitz, P. Seyboth, et al. (STAR). *Measurements of Strange Particle Production in* $p + p$ *Collisions at* $\sqrt{s}$*= 200 GeV* . Phys.Rev.C **75**, (2007), 064901. MPP-2007-246, `nucl-ex/0607033`.

B. Abelev, V. Eckardt, N. Schmitz, P. Seyboth, et al. (STAR). *Mass, quark-number, and* $\sqrt{s_{NN}}$ *dependence of the second and fourth flow harmonics in ultra-relativistic nucleus-nucleus collisions* . Phys.Rev.C **75**, (2007), 054906. MPP-2007-245, `nucl-ex/0701010`.

J. Adams, V. Eckardt, N. Schmitz, P. Seyboth, et al. (STAR). *Delta- phi Delta- eta Correlations in Central Au+Au Collisions at* $\sqrt{s_{NN}}$ *= 200 Gev* . Phys.Rev.C **75**, (2007), 034901. MPP-2007-244, `nucl-ex/0607003`.

B. Abelev, V. Eckardt, N. Schmitz, P. Seyboth, et al. (STAR). *Energy dependence of charged pion, proton and anti-proton transverse momentum spectra for Au+Au collisions at* $\sqrt{s_{NN}}$ *= 62.4 and 200 GeV* . Phys.Lett.B **655**, (2007), 104–113. MPP-2007-243, `nucl-ex/0703040`.

J. Adams, V. Eckardt, N. Schmitz, P. Seyboth, et al. (STAR). *The energy dependence of* p_t *angular correlations inferred from mean-*p_t *fluctuation scale dependence in heavy ion collisions at the SPS and RHIC* . J.Phys.G **33**, (2007), 451–466. MPP-2007-242, `nucl-ex/0605021`.

C. Alt, V. Eckardt, N. Schmitz, P. Seyboth, et al. (NA49). *Rapidity and energy dependence of the electric charge correlations in A+A collisions at the SPS energies* . Phys.Rev.C **76**, (2007), 024914. MPP-2007-240, `arxiv:0705.1122`.

C. Alt, V. Eckardt, N. Schmitz, P. Seyboth, et al. (NA49). *Centrality and system size dependence of multiplicity fluctuations in nuclear collisions at 158 AGeV* . Phys.Rev.C **75**, (2007), 064904. MPP-2007-239, `nucl-ex/0612010`.

C. Alt, V. Eckardt, N. Schmitz, P. Seyboth, et al. (NA49). *Elliptic flow of Lambda hyperons in Pb+Pb collisions at 158A GeV* . Phys.Rev.C **75**, (2007), 044901. AS-IP-06-001, MPP-2007-238, `nucl-ex/0606026`.

D. M. Gingrich et al. (The ATLAS Hadronic End-Cap Calorimeter Group). *Construction, assembly and testing of the ATLAS hadronic end-cap calorimeter* . J.Inst. **2**, (2007), P05005. ATL-LARG-PUB-2007-009, ATL-COM-LARG-2007-006, MPP-2007-237.

C. Alt, V. Eckardt, N. Schmitz, P. Seyboth, et al. (NA49). *Inclusive production of charged pions in p+C collisions at 158 GeV/c beam momentum* . Eur.Phys.J.C **49**, (2007), 897–917. MPP-2007-236, `hep-ex/0606028`.

P. Holl, R. Andrischke, R. Eckhardt, R. Hartmann, C. Koitsch, G. Lutz, N. Meidinger, R. H. Richter, G. Shaller, H. Soltau, L. Strüder, and G. Valceanu. *A new high-speed,* *single photon imaging CCD for the optical* . IEEETransactionsonNuclearScience06CH **37832**. MPP-2007-235.

P. Lechner, L. Andricek, K. Heinzinger, S. Herrmann, N. Kimmel, T. Lauf, G. Lutz, R. H. Richter, M. Porro, G. Schaller, M. Schnecke, F. Schopper, H. Soltau, L. Strüder, J. Treis, S. Wölfl, and Zhang Chen. *The wide field imager of the European X-ray observatory* . IEEE-TransactionsonNuclearScience06CH **37832**. MPP-2007-234.

S. Wölfl, S. Herrmann, P. Lechner, G. Lutz, M. Porro, R. H. Richter, L. Strüder, and J. Treis. *A novel way of single optical photon detection: beating the 1/f noise limit with ultra high resolution DEPFET-RNDR devices* . IEEE Transactions on Nuclear Science **4**, (2007), 1311–1318. MPP-2007-233.

J. Velthuis, R. Kohrs, M. Mathes, A. Raspereza, L. Reuen, L. Andriecek, M. Koch, Z. Dolezal, P. Fischer, A. Frey, F. Giesen, P. Kodys, C. Kreidl, H. Krüger, P. Lodomez, G. Lutz, H. G. Moser, R. H. Richter, C. Sandow, D. Scheirich, E. Torne, M. Trimpl, Q. Wei, and N. Wermes. *DEPFET, a monolithic active pixel sensor for the ILC* . Nucl.Instrum.Meth.A **2**, (2007), 685–689. MPP-2007-232.

G. Lutz, R. Andritschke, L. Andricek, R. Eckhardt, J. Englhauser, G. Fuchs, O. Hälker, R. Hartmann, K. Heinzinger, S. Herrmann, P. Holl, N. Kimmel, P. Lechner, N. Meidinger, M. Porro, R. H. Richter, G. Schaller, M. Schnecke, F. Schopper, H. Soltau, L. Strüder, J. Treis, U. Weichert, and S. Wölfl. *Spectroscopic silicon imaging detectors: past achievements and new developments* . Nucl.Instrum.Meth.A **2**, (2007), 960–967. MPP-2007-231.

J. Ninkovic, R. Eckhardt, R. Hartmann, P. Holl, C. Koitsch, G. Lutz, C. Merck, R. Mirzoyan, H. G. Moser, N. Otte, R. Richter, G. Schaller, F. Schopper, H. Soltau, M. Teshima, and G. Valceanu. *The avalanche drift diode - a black illumination drift silicon photomultiplier* . Nucl.Instrum.Meth.A **2**, (2007), 1013–1015. MPP-2007-230.

P. Fischer, L. Andricek, S. Herrmann, M. Karagounis, R. Kohrs, C. Kreidl, H. Krüger, G. Lutz, G. G. Moser, I. Peric, M. Porro, L. Reuen, R. H. Richter, S. Rummel, C. Sandow, L. Strüder, E. Torne, J. Treis, M. Trimpl, J. Velthuis, and N. Wermes. *Progress towards a large area, thin DEPFET detector module* . Nucl.Instrum.Meth.A **3**, (2007), 843–848. MPP-2007-229.

J. Albert and E. Aliu (MAGIC). *Implementation of the Random Forest method for the Imaging Atmospheric Cherenkov Telescope MAGIC* . Nucl.Instrum.Meth.A MPP-2007-228.

The collaboration (ZEUS). *Leading neutron energy and pT distributions in deep inelastic scattering and photoproduction at HERA* . Nucl.Phys.B **776**, (2007), 1–37. DESY-07-011, MPP-2007-227, `hep-ex/0702028`.

The collaboration (ZEUS). *Measurement of D*+- meson production in ep scattering at low Q^2* . Phys.Lett.B **649**, (2007), 111–121. DESY-07-012, MPP-2007-226, `hep-ex/0702034`.

S. Chekanov (ZEUS). *Diffractive Photoproduction of D*+/-(2010) at HERA* . Eur.Phys.J.C **51**, (2007), 301–315. DESY-07-039, MPP-2007-225, `hep-ex/0703046`.

The collaboration (ZEUS). *Measurement of D mesons Production in Deep Inelastic Scattering at HERA* . JHEP **0707**, (2007), 074. DESY-07-052, MPP-2007-224, `arxiv:0704.3562`.

The collaboration (ZEUS). *Multijet production at low xBj in deep inelastic scattering at HERA* . Nucl.Phys.B **786**, (2007), 152–180. DESY-07-062, MPP-2007-223, `arxiv:0705.1931`.

The collaboration (ZEUS). *Measurement of (anti)deuteron and (anti)proton production in DIS at HERA* . Nucl.Phys.B DESY 07-070, MPP-2007-222, `arxiv:0705.3770`.

The collaboration (ZEUS). *Bose-Einstein Correlations of Charged and Neutral Kaons in Deep Inelastic Scattering at HERA* . Phys.Lett.B **652**, (2007), 1–12. DESY-07-069, MPP-2007-221, `arxiv:0706.2538`.

S. Chekanov (ZEUS). *High-E_T dijet photoproduction at HERA* . Phys.Rev.D **76**, (2007), 072011. DESY 07-092, MPP-2007-220, `arxiv:0706.3809`.

S. Chekanov (ZEUS). *Forward-jet production in deep inelastic ep scattering at HERA.* . Eur.Phys.J.C **52**, (2007), 515–530. MPP-2007-219, `arxiv:0707.3093`.

S. Chekanov (ZEUS). *Three- and four-jet final states in photoproduction at HERA.* . Nucl.Phys.B **792**, (2008), 1–47. MPP-2007-218, `arxiv:0707.3749`.

S. Chekanov et al. (ZEUS). *Dijet production in diffractive deep inelastic scattering at HERA.* . Eur.Phys.J.C **52**, (2007), 813–832. DESY-07-126, MPP-2007-217, `arxiv:0708.1415`.

Allen Caldwell and Guenter Grindhammer. *In the heart of matter. (In German)* . Physik Journal **11**, (2007), 39–45. MPP-2007-215.

S. Chekanov (ZEUS). *Exclusive rho^0 production in deep inelastic scattering at HERA* . PMC Phys.A **1**, (2007), 6. DESY-07-118, MPP-2007-214, `arxiv:0708.1478`.

The collaboration (H1). *Measurement of Inclusive Jet Production in Deep-Inelastic Scattering at High Q^2 and Determination of the Strong Coupling* . Phys.Lett.B **653**, (2007), 134–144. DESY 07-073, MPP-2007-213, `arxiv:0706.3722`.

G. Mennessier, P. Minkowski, S. Narison, and W. Ochs. *Can the gamma-gamma processes reveal the nature of the sigma ?* MPP-2007-212, `arxiv:0707.4511`.

H. Kraus, G. Angloher, M. Bauer, I. Bavykina, C. Bucci, P. Christ, C. Ciemniak, C. Cozzini, C. Coppi, F. von Feilitzsch, D. Hauff, S. Henry, J. Imber, C. Isaila, Th. Jagemann, J. Jochum, J. C. Lanfranchi, R. Lang, B. Majorovits,

M. Malek, R. McGowan, V. Mikhailik, J. Ninkovic, E. Pantic, F. Petricca, S. Pfister, W. Potzel, F. Pröbst, Y. Ramachers, W. Rau, M. Razeti, K. Rottler, S. Scholl, W. Seidel, M. Stark, L. Stodolsky, A. J. B. Tolhurst, W. Westphal, and H. Wulandari. *CRESST - status and future* . Nucl.Phys.B (Proc.Suppl.) **173**, (2007), 104–107. MPP-2007-211.

S. Blusk, O. Buchmuller, A. Jacholkowski, T. Ruf, J. Schieck, and S. Viret. *Proceedings of the first LHC Detector Alignment Workshop* MPP-2007-210.

I. Bavykina, A. Bento, D. Hauff, P. Huff, R. Lang, B. Majorovits, E. Pantic, F. Petricca, F. Proebst, W. Seidel, L. Stodolsky, C. Ciemniak, C. Coppi, F. von Feilitzsch, C. Isaila, J. Lanfranchi, S. Pfister, W. Potzel W. Westphal, S. Henry, J. Imber, S. Ingleby, H. Kraus, M. Malek, R. McGowan, V. Mikhailik, B. Tolhurst, M. Bauer, J. Jochum, M. Kimmerle, K. Rottler, S. Scholl, and C. Bucci. *The CRESST Dark Matter Search* MPP-2007-209.

B. Majorovits. *The GERDA Neutrinoless Double Beta-Decay Experiment* . AIP Conf.Proc. **942**, (2007), 57–61. MPP-2007-208.

P. Weisz. *News from lattice QCD* MPP-2007-207.

A. Ahmad et al. *The Silicon microstrip sensors of the ATLAS semiconductor tracker* . Nucl.Instrum.Meth.A **578**, (2007), 98–118. MPP-2007-206.

A. Abdesselam et al. *The ATLAS semiconductor tracker end-cap module* . Nucl.Instrum.Meth.A **575**, (2007), 353–389. MPP-2007-205.

Erhard Seiler and Ion-Olimpiu Stamatescu. *The many-fold way of contemporary high energy theoretical physics* , 3–18 (Springer-Verlag, Lect. Notes Phys. 721, Heidelberg, New York). MPP-2007-204 (2007).

J. Albert (MAGIC). *Very High Energy Gamma-ray Radiation from the Stellar-mass Black Hole Cygnus X-1* . Astrophys.J.L. **665**, (2007), L51. MPP-2007-203, `arxiv:0706.1505`.

J. Albert (MAGIC). *Discovery of very high energy gamma-ray emission from the low-frequency peaked BL Lacertae object BL Lacertae* . Astrophys.J.L. **666**, (2007), L17. MPP-2007-202, `arxiv:astro-ph/0703084v2`.

J. Albert. *Observation of VHE gamma-rays from Cassiopeia A with the MAGIC telescope* . Astron.Astrophys. **474**, (2007), 937–940. MPP-2007-201, `arxiv:0706.4065`.

J. Albert et al. (MAGIC). *Upper limit for gamma-ray emission above 140 GeV from the dwarf spheroidal galaxy Draco* . Astrophys.J. MPP-2007-200, `arxiv:0711.2574`.

J. K. Becker, M. Gaug, Ch. Ch. Hsu, and W. Rhode (MAGIC). *GRB neutrino search with MAGIC* MPP-2007-199.

V. Scapin (MAGIC). *Resent results from the MAGIC Telescope* MPP-2007-198.

J. Albert et al. (MAGIC). *Systematic search for VHE gamma-ray emission from X-ray bright high-frequency BL Lac objects* MPP-2007-197, `arxiv:0706.4453`.

Hans-Günther Moser. *Development of backside illuminated silicon photomultipliers at the MPI semiconductor laboratory* . PoS MPP-2007-196.

I. Bavykina, G. Angloher, D. Hauff, E. Pantic, F. Petricca, F. Proebst, W. Seidel, and L. Stodolsky. *Investigation of ZnWO4 crystals as scintillating absorbers for direct Dark Matter search experiments* MPP-2007-195.

Adam N. Otte. *Observation of gamma-rays from the vicinity of magnetized neutron stars and development of new photon detectors for future experiments* . Phd thesis, TU München. MPP-2007-194 (2007).

Stefan Dittmaier, Stefan Kallweit, and Peter Uwer. *NLO QCD corrections to pp->WW+jet+X* SFB/CPP-07-87, UWThPh-2007-30, MPP-2007-193, `arxiv:0712.3163`.

H. Bartko and W. Bednarek. *Gamma-Ray Emission from PWNe Interacting with Molecular Clouds* MPP-2007-192, `arxiv:0712.2964`.

Mariano Ciccolini, Ansgar Denner, and Stefan Dittmaier. *Electroweak and QCD corrections to Higgs-boson production in vector-boson fusion at the LHC* PSI-PR-07-12, UWThPh-2007-29, MPP-2007-190, `arxiv:0712.2895`.

Wolfgang Hollik, Monika Kollar, and Maike K. Trenkel. *EW NLO corrections to pair production of top-squarks at the LHC* MPP-2007-189, `arxiv:0710.2472`.

Andreu Esteban-Pretel, Sergio Pastor, Ricard Tomas, Georg Raffelt, and Gunter Sigl. *Multi-angle effects in collective supernova neutrino oscillations* MPP-2007-188, `arxiv:0712.2176`.

Nikolas Akerblom, Ralph Blumenhagen, Dieter Lust, and Maximilian Schmidt-Sommerfeld. *D-brane Instantons in 4D Supersymmetric String Vacua* LMU-ASC 74/07, MPP-2007-187, `arxiv:0712.1793`.

Adam N. Otte. *Detection of Cherenkov light from air showers with Geiger-APDs* MPP-2007-186, `arxiv:0712.1592`.

A. Nepomuk Otte. *Observation of the Crab Nebula with the MAGIC telescope* MPP-2007-185, `arxiv:0712.1386`.

Timur Rashba. *Low energy neutrino experiments sensitivity to physics beyond the Standard Model* MPP-2007-184.

K. R. Ito and E. Seiler. *On the recent paper on quark confinement by Tomboulis* MPP-2007-183, `arxiv:0711.4930`.

L. Anchordoqui, H. Goldberg, S. Nawata, and T. R. Taylor. *Jet signals for low mass Jet signals for low mass strings at the LHC* . Phys.Rev.Lett. MPP-2007-182.

Jörg Dubbert. *First experience with the ATLAS Muon Spectrometer* . Nucl.Instrum.Meth.A **581**, (2007), 507–510. MPP-2007-181.

Stefan Antusch, Stephen F. King, and Michal Malinsky. *Third Family Corrections to Tri-bimaximal Lepton Mixing and a New Sum Rule* MPP-2007-180, `arxiv:0711.4727`.

The collaboration (H1). *Three- and Four-jet Production at Low x at HERA* DESY 07-200, MPP-2007-179, `arxiv:0711.2606`.

Andreu Esteban-Pretel, Sergio Pastor, Ricard Tomas, Georg G. Raffelt, and Gunter Sigl. *Mu-tau neutrino refraction and collective three-flavor transformations in supernovae* IFIC/07-69, MPP-2007-178, `arxiv:0712.1137`.

Oliver Kortner, Sergey Kotov, Hubert Kroha, Igor Potrap, and Jens Schmaler. *New Methods for the Alignment of the ATLAS Muon Spectrometer with Tracks* MPP-2007-177.

J. v. Loeben, M. Deile, N. Hessey, O. Kortner, H. Kroha, and A. Staude. *An Efficient Method to Determine the Space-to-Drift-Time Relationship of the ATLAS Monitored Drift Tube Chambers* . IEEE Nuclear Science Symposium Conference Record **1**, (2007), 685–688. MPP-2007-176.

J. v. Loeben et al. (ATLAS Muon). *First Cosmic Ray Results of the ATLAS Muon Spectrometer with Magnetic Field* . IEEE Nuclear Science Symposium Conference Record **3**, (2007), 1891–1894. MPP-2007-175.

Pilar Coloma, Andrea Donini, Enrique Fernandez-Martinez, and Jacobo Lopez-Pavon. θ_{13}, δ *and the neutrino mass hierarchy at a* $\gamma = 350$ *double baseline Li/B* β*-Beam* MPP-2007-174, `arxiv:0712.0796`.

Wolfgang Ochs. *The glueball among the light scalar mesons* MPP-2007-173, `arxiv:0711.3902`.

J. Dubbert, S. Horvat, H. Kroha, F. Legger, O. Kortner, R. Richter, and F. Rauscher. *Development of Precision Drift Tube Detectors for Very High Background Rates at the Super-LHC* MPP-2007-172.

Luzi Bergamin and Rene Meyer. *Two-Dimensional Quantum Gravity with Boundary* MPP-2007-171, `arxiv:0711.3595`.

Max Niedermaier and Erhard Seiler. *On the large N expansion in hyperbolic sigma-models* ESI preprint 1979, MPP-2007-170, `arxiv:0711.3756`.

Ralph Blumenhagen, Sebastian Moster, and Erik Plauschinn. *Moduli Stabilisation versus Chirality for MSSM like Type IIB Orientifolds* . JHEP **0801**, (2008), 58. MPP-2007-169, `arxiv:0711.3389`.

Johanna Erdmenger, Nick Evans, Ingo Kirsch, and Ed Threlfall. *Mesons in Gauge/Gravity Duals - A Review* SHEP-07-45, NI-07-071, MPP-2007-168, `arxiv:0711.4467`.

W. Bednarek and R. M. Wagner. *A Model for Delayed Emission in a Very-High Energy Gamma-Ray Flare in Markarian 501* . Astron.Astrophys. MPP-2007-167.

T. Hahn and P. Lang. *FeynEdit - a tool for drawing Feynman diagrams* MPP-2007-166, `arxiv:0711.1345`.

Frank Daniel Steffen. *Supersymmetric Dark Matter Candidates - The Lightest Neutralino, the Gravitino, and the Axino* 184–196. MPP-2007-165, `arxiv:0711.1240`.

J. Astrom, P. C. F. Di Stefano, F. Probst, L. Stodolsky, and J. Timonen. *Brittle fracture down to femto-Joules - and below* MPP-2007-164, `arxiv:0708.4315`.

Ralph Blumenhagen and Maximilian Schmidt-Sommerfeld. *Gauge Thresholds and Kaehler Metrics for Rigid Intersecting D-brane Models* . JHEP **0712**, (2007), 072. MPP-2007-163, `arxiv:0711.0866`.

Paul Koerber and Luca Martucci. *D-branes on AdS flux compactifications* . JHEP **01**, (2008), 047. LMU-ASC 69/07, MPP-2007-162, `arxiv:0710.5530`.

Yvonne Y. Y. Wong. *Neutrinos in cosmology* MPP-2007-161.

The collaboration (H1). *Measurement of Deeply Virtual Compton Scattering and its t-dependence at HERA* . Phys.Lett.B **659**, (2008), 796–806. DESY-07-142, MPP-2007-160, `arxiv:0709.4114`.

The collaboration (H1). *Dijet Cross Sections and Parton Densities in Diffractive DIS at HERA* . JHEP **0710**, (2007), 042. DESY-07-115, MPP-2007-159, `arxiv:0708.3217`.

The collaboration (H1). *Measurement of Isolated Photon Production in Deep-Inelastic Scattering at HERA* DESY 07-147, MPP-2007-158, `arxiv:0711.4578`.

The collaboration (H1). *Charged Particle Production in High Q2 Deep-Inelastic Scattering at HERA* . Phys.Lett.B **654**, (2007), 148–159. DESY 07-065, MPP-2007-157, `arxiv:0706.2456`.

S. Ruijsenaars and L. Stodolsky. *On the Euclidean Version of the Photon Number Integral* . J.Math.Phys. **49**, (2008), 023502. MPP-2007-156, `arxiv:0710.4276`.

T. Hahn, S. Heinemeyer, W. Hollik, H. Rzehak, and G. Weiglein. *Higgs Masses and More in the Complex MSSM with FeynHiggs* IPPP/07/74, DCPT/07/148, PSI-PR-07-09, MPP-2007-155, `arxiv:0710.4891`.

Josef Pradler and Frank D. Steffen. *CBBN in the CMSSM* MPP-2007-154, `arxiv:0710.4548`.

Luzi Bergamin, Daniel Grumiller, Robert McNees, and Rene Meyer. *Black Hole Thermodynamics and Hamilton-Jacobi Counterterm* MIT-CTP-3887, MPP-2007-153, `arxiv:0710.4140`.

Mariano Ciccolini, Ansgar Denner, and Stefan Dittmaier. *Electroweak and QCD corrections to Higgs production via vector-boson fusion at the LHC* . Phys.Rev.D **77**, (2008), 013002. PSI-PR-07-06, UWThPh-2007-26, MPP-2007-152, `arxiv:0710.4749`.

Sean Fleming, Andre H. Hoang, Sonny Mantry, and Iain W. Stewart. *Factorization Approach for Top Mass Reconstruction at High Energies* MIT-CTP 3866, MPP-2007-151, `arxiv:0710.4205`.

Alessandra Feo, Roberto De Pietri, Erhard Seiler, and Ion-Olimpiu Stamatescu. *The High Density Region of QCD from an Effective Model* DFTT 24/2007, MPP-2007-150, arxiv:0710.3102.

Wolfgang Hollik, Monika Kollar, and Maike K. Trenkel. *Hadronic production of top-squark pairs with electroweak NLO contributions* . JHEP **02**, (2008), 018. MPP-2007-149, arxiv:0712.0287.

S. Heinemeyer, W. Hollik, A. M. Weber, and G. Weiglein. *MSSM precision physics at the Z resonance* IPPP/07/58, DCPT/07/116, MPP-2007-148, arxiv:0710.2982.

Roberto De Pietri, Alessandra Feo, Erhard Seiler, and Ion-Olimpiu Stamatescu. *A Model for QCD at high density and large quark mass* . Phys.Rev.D **76**, (2007), 114501–114522. MPP-2007-147, arxiv:0705.3420.

Dietmar Ebert, Jan Plefka, and Andreas Rodigast. *Absence of gravitational contributions to the running Yang-Mills coupling* . Phys.Lett.B **660**, (2008), 579–582. HU-EP-07/49, MPP-2007-145, arxiv:0710.1002.

S. Dittmaier, S. Kallweit, and P. Uwer. *NLO QCD corrections to WW+jet production at hadron colliders* . Phys.Rev.Lett. **100**, (2008), 062003. SFB/CPP-07-64, MPP-2007-144, arxiv:0710.1577.

M. Doro (MAGIC). *Technical Solutions for the MAGIC Telescope* MPP-2007-143.

O. Buchmueller, R. Cavanaugh, A. De Roeck, S. Heinemeyer, G. Isidori, P. Paradisi, F. J. Ronga, A. M. Weber, and G. Weiglein. *Prediction for the Lightest Higgs Boson Mass in the CMSSM using Indirect Experimental Constraints* . Phys.Lett.B **657**, (2007), 87–94. IPPP/07/43, DCPT/07/86, MPP-2007-142, arxiv:0707.3447.

H. Bartko (MAGIC). *Observations of VHE Gamma-Ray Sources with the MAGIC Telescope* . Chin.J.Astron.Astrophys MPP-2007-141.

M. Lopez, N. Otte, E. Aliu, et al. (MAGIC). *Pulsar observations with the MAGIC Telescope* MPP-2007-140.

D. Paneque (MAGIC). *Study of the Flux and Spectral Variations in the VHE Emission from the Blazar Markarian 501, with the MAGIC telescope* MPP-2007-139.

D. Mazin (MAGIC). *Observations of AGNs with the MAGIC Telescope* MPP-2007-138.

D. F. Torres and J. Cortina (MAGIC). *Highlights of MAGIC Observations of galactic sources* MPP-2007-137.

Johanna Erdmenger, Matthias Kaminski, and Felix Rust. *Holographic vector mesons from spectral functions at finite baryon or isospin density* . Phys.Rev.D **77**, (2008), 046005. MPP-2007-136, arxiv:0710.0334.

Andre H. Hoang and Iain W. Stewart. *Designing Gapped Soft Functions for Jet Production* . Phys.Lett.B **660**, (2008), 483–493. MIT-CTP 3792, MPP-2007-135, arxiv:0709.3519.

Jan Hamann and Yvonne Y. Y. Wong. *Effects of CMB temperature uncertainties on cosmological parameter estimation* TUM-HEP-674/07, MPP-2007-134, arxiv:0709.4423.

Silja Brensing, Stefan Dittmaier, Michael Krämer, and Alexander Mück. *Radiative corrections to W-boson hadroproduction: higher-order electroweak and supersymmetric effects* PITHA 07/08, , UWThPh-2007-24, PSI-PR-07-08, MPP-2007-132, arxiv:0710.3309.

Florian Goebel. *Status of the second phase of the MAGIC telescope* MPP-2007-131, arxiv:0709.2605.

M. Ackermann, E. Bernardini, N. Galante, F. Goebel, M. Hayashida, K. Satalecka, M. Tluczykont, and R. M. Wagner. *Test run of Neutrino triggered Target of Opportunity (NToO) gamma ray observations using AMANDA and MAGIC* MPP-2007-130, arxiv:0709.2640.

R. Wagner. *Synoptic studies of seventeen blazars detected in very high energy gamma-rays* . Mon.Not.R.Astron.Soc. **385**. MPP-2007-129, arxiv:0711.3025.

Florian Goebel, Hendrik Bartko, Emiliano Carmona, Nicola Galante, Tobias Jogler, Razmik Mirzoyan, Jose Antonio Coarasa, and Masahiro Teshima (MAGIC). *Upgrade of the MAGIC Telescope with a Multiplexed Fiber-Optic 2 GSamples/s FADC Data Acquisition system* MPP-2007-128, arxiv:0709.2363.

Hendrik Bartko. *Observations of VHE gamma-Ray Sources with the MAGIC Telescope* MPP-2007-126, arxiv:0709.2807.

G. Hermann, W. Hofmann, T. Schweizer, and M. Teshima. *Cherenkov Telescope Array: The next-generation ground-based gamma-ray observatory* MPP-2007-125, arxiv:0709.2048.

F. Goebel, M. Backes, T. Bretz, M. Hayashida, C. Hsu, K. Mannheim, A. Moralejo, W. Rhode, K. Satalecka, M. Shayduk, M. Teshima, and R. M. Wagner. *Long term monitoring of bright TeV Blazars with the MAGIC telescope* MPP-2007-124, arxiv:0709.2032.

Johanna Erdmenger, Rene Meyer, and Jonathan P. Shock. *AdS/CFT with Flavour in Electric and Magnetic Kalb-Ramond Fields* . JHEP **0712**, (2007), 091. MPP-2007-122, arxiv:0709.1551.

Stefan Antusch and Steve F. King. *Lepton Flavour Violation in the Constrained MSSM with Constrained Sequential Dominance* . Phys.Lett.B **659**, (2008), 640–650. SHEP-07-30, MPP-2007-121, arxiv:0709.0666.

Georg G. Raffelt and Alexei Yu. Smirnov. *Adiabaticity and spectral splits in collective neutrino transformations* . Phys.Rev.D **76**, (2007), 125008. MPP-2007-120, arxiv:0709.4641.

A. Bredenstein, A. Denner, S. Dittmaier, and M. M. Weber. *Precision calculations for H -> WW/ZZ -> 4fermions with PROPHECY4f* MPP-2007-118, arxiv:0708.4123.

J. Ellis, T. Hahn, S. Heinemeyer, K. A. Olive, and G. Weiglein. *WMAP-Compliant Benchmark Surfaces for MSSM Higgs Bosons* . JHEP **0710**, (2007), 092. CERN-PH-TH/2007-138, DCPT/07/102, IPPP/07/51, , UMN-TH-2615-07, FTPI-MINN-07-25, MPP-2007-117, `arxiv:0709.0098`.

T. Hahn and J. I. Illana. *Extensions in FormCalc 5.3* MPP-2007-116, `arxiv:0708.3652`.

Josef Pradler and Frank Daniel Steffen. *Implications of Catalyzed BBN in the CMSSM with Gravitino Dark Matter* MPP-2007-115, `arxiv:0710.2213`.

H. Bartko (. *Observation of Galactic Sources of Very High Energy Gamma-Rays with the MAGIC Telescope* . Mod.Phys.Lett.A **22**, (2007), 2167–2174. MPP-2007-114, `arxiv:0708.2934`.

Frank D. Steffen and Markus H. Thoma. *Erratum to "Hard Thermal Photon Production in Relativistic Heavy Ion Collisions" [Phys.Lett.B510 (2001) 98]* . Phys.Lett.B **660**, (2008), 604–606. CERN-TH/2001-080, HD-THEP-01-13, MPP-2007-113, `hep-ph/0103044`.

J. Albert, John Ellis, N. E. Mavromatos, D. V. Nanopoulops, A. S. Sakharov, E. K. G. Sarkisyan, et al. *Probing Quantum Gravity using Photons from a Mkn 501 Flare Observed by MAGIC* . Phys.Rev.Lett. CERN-PH-TH/2007-137, MPP-2007-112, `arxiv:0708.2889`.

Masahiro Teshima, Elisa Prandini, Rudolf Bock, Manel Errando, Daniel Kranich, Elina Lindfors, Eckart Lorenz, Daniel Mazin, Pratik Majumdar, Mose Mariotti, Villi Scalzotto, and Robert Wagner. *Discovery of Very High Energy Gamma-Rays from the Distant Flat Spectrum Radio Quasar 3C 279 with the MAGIC Telescope* MPP-2007-111.

Stephan Stieberger and Tomasz R. Taylor. *Complete Six-Gluon Disk Amplitude in Superstring Theory* MPP-2007-110, `arxiv:0711.4354`.

Robert Wagner. *Measurement of Very High Energy Gamma-Ray Emission from Four Blazars Using the MAGIC Telescope and a Comparative Blazar Study* . Publications of the Astronomical Society of the Pacific **119**, (2007), 1201–1203. MPP-2007-109.

Steen Hannestad, Georg Raffelt, and Yvonne Y. Y. Wong. *Unparticle constraints from SN1987A* . Phys.Rev.D **76**, (2007), 121701. MPP-2007-108, `arxiv:0708.1404`.

Michael Kiefer. *Optimierung szintillierender Tieftemperaturkalorimeter für den direkten Nachweis von Teilchen der Dunklen Materie* . Diploma thesis, Julius-Maximilians-Universität Würzburg. MPP-2007-107 (2007).

Wolfgang Hollik and Monika Kollar. *NLO QED contributions to top-pair production at hadron collider* . Phys.Rev.D **77**, (2008), 014008. MPP-2007-106, `arxiv:0708.1697`.

M. Fairbairn, S. N. Gninenko, N. V. Krasnikov, V. A. Matveev, T. I. Rashba, A. Rubbia, and Sergey Troitsky. *Searching for energetic cosmic axions in a laboratory experiment: testing the PVLAS anomaly* . Eur.Phys.J.C **52**, (2007), 899–904. MPP-2007-105, `arxiv:0706.0108`.

Maxim Dvornikov, Timur Rashba, and Victor Semikoz. *Coriolis force corrections to g-mode spectrum in 1D MHD model* MPP-2007-104, `arxiv:0705.2923`.

Sean Fleming, Andre H. Hoang, Sonny Mantry, and Iain W. Stewart. *Top Jets in the Peak Region: Factorization Analysis with NLL Resummation* MIT-CTP 3868, CALT-68-2625, MPP-2007-103, `arxiv:0711.2079`.

Johann H. Kuhn, A. Kulesza, S. Pozzorini, and M. Schulze. *Electroweak corrections to hadronic production of W bosons at large transverse momenta* TTP07-19, SFB/CPP-07-43, , DESY 07-112, MPP-2007-102, `arxiv:0708.0476`.

Biljana Antunovic. *A First Measurement of the Charged Current DIS Cross Sections with Longitudinally Polarised Electrons in the H1 Experiment at HERA* . Phd thesis, LMU Muenchen. MPP-2007-101 (2007).

Ralph Blumenhagen, Mirjam Cvetic, Robert Richter, and Timo Weigand. *Lifting D-Instanton Zero Modes by Recombination and Background Fluxes* . JHEP **0710**, (2007), 98. MPP-2007-100, `arxiv:0708.0403`.

J. Barranco, O. G. Miranda, and T. I. Rashba. *Improved limit on electron neutrino charge radius through a new evaluation of the weak mixing angle* MPP-2007-99, `arxiv:0707.4319`.

C. Kounnas, D. Lust, P. M. Petropoulos, and D. Tsimpis. *AdS4 flux vacua in type II superstrings and their domain-wall solutions* . JHEP LPTENS/07/32, LMU-ASC 50/07, , CPTH-RR060.0707, MPP-2007-98, `arxiv:0707.4270`.

W. Hollik, T. Kasprzik, and B. A. Kniehl. *Electroweak corrections to W-boson hadroproduction at finite transverse momentum* . Nucl.Phys.B **790**, (2007), 138–159. DESY 07-103, MPP-2007-96, `arxiv:0707.2553`.

J. Albert et al. *Unfolding of differential energy spectra in the MAGIC experiment* . Nucl.Instrum.Meth.A **583**, (2007), 494. MPP-2007-95, `arxiv:0707.2453`.

Dieter Lust. *String Landscape and the Standard Model of Particle Physics* LMU-ASC 49/07, MPP-2007-94, `arxiv:0707.2305`.

Ralph Blumenhagen, Mirjam Cvetic, Dieter Lust, Robert Richter, and Timo Weigand. *Non-perturbative Yukawa Couplings from String Instantons* . Phys.Rev.Lett. **100**, (2008), 061602. MPP-2007-93, `arxiv:0707.1871`.

Paul Koerber and Luca Martucci. *From ten to four and back again: how to generalize the geometry* . JHEP **0708**, (2007), 059. KUL-TF-07/12, MPP-2007-92, `arxiv:0707.1038`.

I. Bavykina, P. Christ, P. Huff, J. Ninkovic, F. Proebst, W. Seidel, and L. Stodolsky. *Interpretation of Light-Quenching Factor Measurements* . Astropart.Phys. **28**, (2007), 489. MPP-2007-91, `arxiv:0707.0766`.

Robert Wagner. *Fifteen Blazars in Very-High Energy Gamma Rays: A Comparative Study* MPP-2007-90.

Robert Wagner. *Blazar Observations in the TeV energy range with the MAGIC Telescope* MPP-2007-89.

J. Albert et al. *Discovery of Very High Energy gamma-rays from 1ES1011+496 at z=0.212* . Astrophys.J. **667**, (2007), L21–L24. MPP-2007-88, `arxiv:0706.4435`.

Robert Wagner, Daniela Dorner, Masaaki Hayashida, Thomas Hengstebeck, Daniel Kranich, Daniel Mazin, Nina Nowak, and Diego Tescaro. *Detection of very high energy gamma-rays from the BL Lac object PG 1553+113 with the MAGIC telescope* MPP-2007-87, `arxiv:0711.1586`.

Robert Wagner and Markus Meyer. *Detection of very high energy gamma-rays from the BL Lac object 1ES 2344+514 in a low emission state with the MAGIC telescope* MPP-2007-86.

Robert Wagner. *A First Synoptic Blazar Study Comprising Thirteen Blazars Visible in E>100 GeV Gamma Rays* MPP-2007-85, `arxiv:0706.4442`.

Robert Wagner. *A First Synoptic Blazar Study Comprising Eleven Blazars Visible in E> 100 GeV Gamma Rays* MPP-2007-84.

Robert Wagner. *AGN Observations in the GeV/TeV Energy Range with the MAGIC Telescope* . Publications of the Astronomical Society of the Pacific Conference Series **386**. MPP-2007-83, `arxiv:0706.4439`.

M. Ciccolini, A. Denner, and S. Dittmaier. *Strong and electroweak corrections to the production of Higgs+2jets via weak interactions at the LHC* . Phys.Rev.Lett. **99**, (2007), 99. PSI-PR-07-03, MPP-2007-82, `arxiv:0707.0381`.

Steen Hannestad, Alessandro Mirizzi, Georg G. Raffelt, and Yvonne Y. Y. Wong. *Cosmological constraints on neutrino plus axion hot dark matter* . JCAP **0708**, (2007), 015. MPP-2007-81, `arxiv:0706.4198`.

Kevin Kroeninger. *Techniques to distinguish between electron and photon induced events using segmented germanium detectors* . Phd thesis, TU Muenchen. MPP-2007-80 (2007).

S. Stieberger and T. Taylor. *Supersymmetry Relations and MHV Amplitudes in Superstring Theory* . Nucl.Phys.B **793**, (2008), 83–113. MPP-2007-79, `arxiv:0708.0574`.

Christian Kiesling. *Physics Results from HERA* MPP-2007-77.

Sebastian Franco, Amihay Hanany, Daniel Krefl, Jaemo Park, Angel M. Uranga, and David Vegh. *Dimers and orientifolds* . JHEP **0709**, (2007), 075. CERN-PH-TH/2007-099, IFT-UAM/CSIC-07-34, LMU-ASC 41/07, MIT-CTP, MPP-2007-76, `arxiv:0707.0298`.

A. Duncan, M. Niedermaier, and P. Weisz. *Non-compact sigma-models: Large N expansion and thermodynamic limit* . Nucl.Phys.B **791**, (2007), 193–230. MPP-2007-75, `arxiv:0706.2929`.

Johanna Erdmenger, Kazuo Ghoroku, and Ingo Kirsch. *Holographic heavy-light mesons from non-Abelian DBI* . JHEP **0709**, (2007), 111. FIT HE-07-01, MPP-2007-74, `arxiv:0706.3978`.

Gabriel Lopes Cardoso, Anna Ceresole, Gianguido Dall'Agata, Johannes M. Oberreuter, and Jan Perz. *First-order flow equations for extremal black holes in very special geometry* . JHEP **0710**, (2007), 063. DFPD-07TH10, LMU-ASC 38/07, MPP-2007-73, `arxiv:0706.3373`.

Andrei Nikiforov. *Measurements of the Neutral Current $e^+ - p$ Cross Sections Using Longitudinally Polarised Lepton Beams at HERA* . Phd thesis, TU München. MPP-2007-71 (2007).

Sven Menke. *Determination of the Jet Energy Scale* . Nucl.Phys.B (Proc.Suppl.) **177-178**, (2008), 195–199. MPP-2007-70, `arxiv:0706.1474`.

The collaboration (H1). *Search for Baryonic Resonances Decaying to Xi pi in Deep-Inelastic Scattering at HERA* . Eur.Phys.J.C **52**, (2007), 507–514. DESY 07-045, MPP-2007-69, `arxiv:0704.3594`.

The collaboration (H1). *Tests of QCD Factorisation in the Diffractive Production of Dijets in Deep-Inelastic Scattering and Photoproduction at HERA* . Eur.Phys.J.C **51**, (2007), 549–568. DESY 07-018, MPP-2007-68, `hep-ex/0703022`.

The collaboration (H1). *Search for Lepton Flavour Violation in ep Collisions at HERA* . Eur.Phys.J.C **52**, (2007), 833–847. MPP-2007-67, `hep-ex/0703004`.

Paul Koerber and Dimitrios Tsimpis. *Supersymmetric sources, integrability and generalized-structure compactifications* . JHEP **0708**, (2007), 82. LMU-ASC 37/07, MPP-2007-66, `arxiv:0706.1244`.

S. Heinemeyer, W. Hollik, A. M. Weber, and G. Weiglein. *Z Pole Observables in the MSSM* DCPT/07/110, IPPP/07/55, MPP-2007-65, `arxiv:0710.2972`.

J. Ellis, S. Heinemeyer, K. A. Olive, A. M. Weber, and G. Weiglein. *The Supersymmetric Parameter Space in Light of B-physics Observables and Electroweak Precision Data* . JHEP **0708**, (2007), 083. CERN-PH-TH/2007-087, DCPT/07/50, IPPP/07/25, , MN-TH-2606-07, FTPI-MINN-07-19, MPP-2007-64, `arxiv:0706.0652`.

A. Mirizzi, D. Montanino, and P. Serpico. *Revisiting cosmological bounds on radiative neutrino lifetime* . Phys.Rev.D **76**, (2007), 053007. FERMILAB-PUB-07-135-A;, MPP-2007-63, `arxiv:0705.4667`.

The collaboration (MAGIC). *Discovery of VHE Gamma Radiation from IC443 with the MAGIC Telescope*

. Astrophys.J.L. **664**, (2007), L87. MPP-2007-62, `arxiv:0705.3119`.

Jan De Rydt, Jan Rosseel, Torsten T. Schmidt, Antoine Van Proeyen, and Marco Zagermann. *Symplectic structure of N=1 supergravity with anomalies and Chern-Simons terms* . Class.Quant.Grav. **24**, (2007), 5201–5220. KUL-TF-07/11, MPP-2007-61, `arxiv:0705.4216`.

Andreu Esteban-Pretel, Sergio Pastor, Ricard Tomas, Georg G. Raffelt, and Gunter Sigl. *Decoherence in supernova neutrino transformations suppressed by deleptonization* . Phys.Rev.D **76**, (2007), 125018. IFIC/07-26, MPP-2007-60, `arxiv:0706.2498`.

J. Albert (MAGIC). *VHE Gamma-Ray Observation of the Crab Nebula and its Pulsar with the MAGIC Telescope* . Astrophys.J. **674**, (2008), 1037–1055. MPP-2007-59, `arxiv:0705.3244`.

Oliver Brein and Wolfgang Hollik. *Distributions for MSSM Higgs boson + jet production at hadron colliders* . Phys.Rev.D **76**, (2007), 035002. IPPP/07/18, DCPT/07/36, MPP-2007-58, `arxiv:0705.2744`.

Nikolas Akerblom, Ralph Blumenhagen, Dieter Lust, and Maximilian Schmidt-Sommerfeld. *Instantons and Holomorphic Couplings in Intersecting D-brane Models* . JHEP **0708**, (2007), 44. LMU-ASC 31/07, MPP-2007-57, `arxiv:0705.2366`.

R. Mirzoyan, F. Goebel, et al. *Enhanced quantum efficienca bialkali photo multiplier tubes* . Nucl.Instrum.Meth.A **572**, (2007), 449–453. MPP-2007-56.

Nikolas Akerblom, Ralph Blumenhagen, Dieter Lust, and Maximilian Schmidt-Sommerfeld. *Thresholds for Intersecting D-branes Revisited* . Phys.Lett.B **652**, (2007), 53–59. LMU-ASC 30/07, MPP-2007-55, `arxiv:0705.2150`.

G. L. Fogli, E. Lisi, A. Marrone, and A. Mirizzi. *Collective neutrino flavor transitions in supernovae and the role of trajectory averaging* . JCAP **0712**, (2007), 010. MPP-2007-54, `arxiv:0707.1998`.

Georg G. Raffelt and Alexei Yu. Smirnov. *Self-induced spectral splits in supernova neutrino fluxes* . Phys.Rev.D **76**, (2007), 081301. MPP-2007-53, `arxiv:0705.1830`.

S. Heinemeyer, W. Hollik, H. Rzehak, and G. Weiglein. *The Higgs sector of the complex MSSM at two-loop order: QCD contributions* . Phys.Lett.B **652**, (2007), 300–309. DCPT/07/34, IPPP/07/17, , PSI-PR-07-02, MPP-2007-52, `arxiv:0705.0746`.

J. Aysto, A. Badertscher, L. Bezrukov, J. Bouchez, A. Bueno, J. Busto, J. E. Campagne, Ch. Cavata, A. de Bellefon, J. Dumarchez, J. Ebert, T. Enqvist, A. Ereditato, F. von Feilitzsch, P. Fileviez Perez, M. Goger-Neff, S. Gninenko, W. Gruber, C. Hagner, M. Hess, K. A. Hochmuth, J. Kisiel, L. Knecht, I. Kreslo, V. A. Kudryavtsev, P. Kuusiniemi, T. Lachenmaier, M. Laffranchi, B. Lefievre, P. K. Lightfoot, M. Lindner, J. Maalampi, M. Maltoni, A. Marchionni, T. Marrodan Undagoitia, A. Meregaglia, M. Messina, M. Mezzetto, A. Mirizzi, L. Mosca, U. Moser, A. Muller, G. Natterer, L. Oberauer, P. Otiougova, T. Patzak, J. Peltoniemi, W. Potzel, C. Pistillo, G. G. Raffelt, E. Rondio, M. Roos, B. Rossi, A. Rubbia, N. Savvinov, T. Schwetz, J. Sobczyk, N. J. C. Spooner, D. Stefan, A. Tonazzo, W. Trzaska, J. Ulbricht, C. Volpe, J. Winter, M. Wurm, A. Zalewska, and R. Zimmermann. *Large underground, liquid based detectors for astro-particle physics in Europe: scientific case and prospects* . JCAP **0711**, (2007), 011. MPP-2007-51, `arxiv:0705.0116`.

Jan Hamann, Steen Hannestad, Georg G. Raffelt, and Yvonne Y. Y. Wong. *Observational bounds on the cosmic radiation density* . JCAP **0708**, (2007), 021. TUM-HEP-668/07, MPP-2007-50, `arxiv:0705.0440`.

K. Kröninger, L. Pandola, and V. Tretyak. *Feasibility study of the observation of the neutrino accompanied double beta-decay of Ge-76 to the 0+(1) excited state of Se-76 using segmented germanium detectors* . Ukrainian Journal of Physics **52**, (2007), 1036–1044. MPP-2007-48, `nucl-ex/0702030`.

I. Abt, A. Caldwell, K. Kröninger, J. Liu, X. Liu, and B. Majorovits. *Pulse shapes from electron and photon induced events in segmented high-purity germanium detectors* . Eur.Phys.J.C **52**, (2007), 19–27. MPP-2007-47, `arxiv:0704.3016`.

Pedro D. Ruiz-Femenia. *The soft-energy region in the radiative decay of bound states* . Nucl.Phys.B **788**, (2008), 21–46. MPP-2007-46, `arxiv:0705.1330`.

S. Andriamonje, S. Aune, D. Autiero, K. Barth, A. Belov, B. Beltran, H. Brauninger, J. M. Carmona, S. Cebrian, J. I. Collar, T. Dafni, M. Davenport, L. Di Lella, C. Eleftheriadis, J. Englhauser, G. Fanourakis, E. Ferrer Ribas, H. Fischer, J. Franz, P. Friedrich, T. Geralis, I. Giomataris, S. Gninenko, H. Gomez, M. Hasinoff, F. H. Heinsius, D. H. H. Hoffmann, I. G. Irastorza, J. Jacoby, K. Jakovcic, D. Kang, K. Konigsmann, R. Kotthaus, M. Krcmar, K. Kousouris, M. Kuster, B. Lakic, C. Lasseur, A. Liolios, A. Ljubicic, G. Lutz, G. Luzon, D. Miller, A. Morales, J. Morales, A. Ortiz, T. Papaevangelou, A. Placci, G. Raffelt, H. Riege, A. Rodrguez, J. Ruz, I. Savvidis, Y. Semertzidis, P. Serpico, L. Stewart, J. Vieira, J. Villar, J. Vogel, L. Walckiers, and K. Zioutas. *An Improved limit on the axion-photon coupling from the CAST experiment* . JCAP **04**, (2007), 010. MPP-2007-45, `hep-ex/0702006`.

Alessandro Mirizzi, Georg G. Raffelt, and Pasquale D. Serpico. *Signatures of axion-like particles in the spectra of TeV gamma-ray sources* . Phys.Rev.D **76**, (2007), 023001. FERMILAB-PUB-07-082-A, MPP-2007-44, `arxiv:0704.3044`.

Monika Blanke, Andrzej J. Buras, Stefan Recksiegel, Cecilia Tarantino, and Selma Uhlig. *Correlations between* *epsilon'/epsilon and Rare K Decays in the Littlest Higgs Model with T-Parity* . JHEP **0706**, (2007), 082. TUM-HEP-667/07, MPP-2007-43, `arxiv:0704.3329`.

Johanna Erdmenger, Matthias Kaminski, and Felix Rust. *Isospin diffusion in thermal AdS/CFT with flavor* . Phys.Rev.D **76**, (2007), 046001. MPP-2007-42, `arxiv:0704.1290`.

R. Mirzoyan, M. Garczarczyk, J. Hose, and D. Paneque. *A method to measure the mirror reflectivity of a prime focus telescope* . Astropart.Phys. **26**, (2007), 509–511. MPP-2007-40.

M. Hayashida, J. Ninkovic, J. Hose, C. C. Hsu, R. Mirzoyan, and M. Teshima. *Development status of High-QE HPDs with 18-mm GaAsP photocathode for IACTs* . Nucl.Instrum.Meth.A **572**, (2007), 456–458. MPP-2007-38.

Ben C. Allanach, Kyle Cranmer, Christopher G. Lester, and Arne M. Weber. *Natural Priors, mSUGRA Fits and LHC Weather Forecasts* . JHEP **0708**, (2007), 023. DAMTP-2007-18, Cavendish-HEP-2007-03, MPP-2007-36, `arxiv:0705.0487`.

Johann H. Kuhn, A. Kulesza, S. Pozzorini, and M. Schulze. *Electroweak corrections to large transverse momentum production of W bosons at the LHC* . Phys.Lett.B **651**, (2007), 160–165. TTP07-07, SFB/CPP-07-12, , DESY 07-041, MPP-2007-35, `hep-ph/0703283`.

Max Niedermaier, Erhard Seiler, and Peter Weisz. *Perturbative and nonperturbative correspondences between compact and non-compact sigma-models* . Nucl.Phys.B **788**, (2008), 89–119. MPP-2007-34, `hep-th/0703212`.

Monika Blanke, Andrzej J. Buras, Stefan Recksiegel, Cecilia Tarantino, and Selma Uhlig. *Littlest Higgs_Model with T-Parity Confronting the New Data on $D^0 - \bar{D}^0$ Mixing* . Phys.Lett.B **657**, (2007), 81–86. TUM-HEP-666/07, MPP-2007-33, `hep-ph/0703254`.

E. Lorenz. *Gamma-ray astronomy with ground-based array detectors: status and perspectives* . J.Phys.Conf.Ser. **60**, (2007), 1–7. MPP-2007-32.

The collaboration (MAGIC). *Very high energy gamma-ray observations during moonlight and twilight with the MAGIC telescope* MPP-2007-31, `astro-ph/0702475`.

Jens Schmaler. *Test and Alignment of the ATLAS Precision Muon Chambers* . Diploma thesis, TU Muenchen. MPP-2007-30 (20032007).

Oliver Kortner, Hubert Kroha, Jens Schmaler, and Chrysostomos Valderanis. *Alignment of the ATLAS Muon Spectrometer with Tracks and Muon Identification at High Background Rates* MPP-2007-29.

C. Cattadori, O. Chkvorets, M. Junker, K. Kröninger, L. Pandola, A. Pullia, V. Re, C. Tomei, C. Ur, and F. Zocca. *The GERmanium Detector Array read-out: Status and developments* . Nucl.Instrum.Meth.A **572**, (2007), 479–480. MPP-2007-28.

K. A. Hochmuth, S. T. Petcov, and W. Rodejohann. *$U_{PMNS} = U_e ll^d agger U_n u$* . Phys.Lett.B **654**, (2007), 177–188. SISSA 44/2007/EP, MPP-2007-27, `arxiv:0706.2975`.

I. Britivitch, E. Lorenz, et al. *Development of scintillation detectors based on avalanche microchannel photodiodes* . Nucl.Instrum.Meth.A **571**, (2007), 317–320. MPP-2007-26.

R. Mirzoyan, B. Dolgoshein, P. Holl, et al. *SiPM and ADD as advanced detectors for astro-particle physics* . Nucl.Instrum.Meth.A **572**, (2007), 439–494. MPP-2007-25.

Kathrin A. Hochmuth, Manfred Lindner, and Georg G. Raffelt. *Exploiting the directional sensitivity of the Double Chooz near detector* . Phys.Rev.D **76**, (2007), 073001. MPP-2007-24, `arxiv:0704.3000`.

S. Dittmaier, P. Uwer, and S. Weinzierl. *NLO QCD corrections to t tbar + jet production at hadron colliders* . Phys.Rev.Lett. **98**, (2007), 262002. MPP-2007-23, `hep-ph/0703120`.

Florian Gmeiner, Dieter Lust, and Maren Stein. *Statistics of intersecting D-brane models on T^6/Z_6* . JHEP **0705**, (2007), 018. NIKHEF/2007-006, , LMU-ASC 14/07, MPP-2007-22, `hep-th/0703011`.

Stefan Berge, Wolfgang Hollik, Wolf M. Mosle, and Doreen Wackeroth. *SUSY QCD one-loop effects in (un)polarized top-pair production at hadron colliders* . Phys.Rev.D **76**, (2007), 034016. MPP-2007-21, `hep-ph/0703016`.

Monika Blanke and Andrzej J. Buras. *A Guide to Flavour Changing Neutral Currents in the Littlest Higgs Model with T-Parity* . Acta Phys.Polon.B **38**, (2007), 2923. TUM-HEP-664/07, MPP-2007-20, `hep-ph/0703117`.

Steen Hannestad and Yvonne Y. Y. Wong. *Neutrino mass from future high redshift galaxy surveys: sensitivity and detection threshold* . JCAP **0707**, (2007), 004. MPP-2007-19, `astro-ph/0703031`.

Manuel Kayl. *Kalman Style Alignment Approach for the ATLAS SCT and Pixel detectors* . Diploma thesis. MPP-2007-18.

Monika Blanke, Andrzej J. Buras, Bjoern Duling, Anton Poschenrieder, and Cecilia Tarantino. *Charged Lepton Flavour Violation and $(g\text{-}2)_m u$ in the Littlest Higgs Model with T-Parity: a clear Distinction from Supersymmetry* . JHEP **0705**, (2007), 013. TUM-HEP-657/07, MPP-2007-17, `hep-ph/0702136`.

Riccardo Apreda, Johanna Erdmenger, Dieter Lust, and Christoph Sieg. *Adding D7-branes to the Polchinski-Strassler gravity background* . Fortschr.Phys.

55, (2007), 639–643. IFUM 887-FT, MPP-2007-16, hep-th/0701246.

J. Barranco, O. G. Miranda, and T. I. Rashba. *Low energy neutrino experiments sensitivity to physics beyond the Standard Model* . Phys.Rev.D **76**, (2007), 073008. MPP-2007-15, hep-ph/0702175.

J. Albert et al. (MAGIC). *Variable VHE gamma-ray emission from Markarian 501* . Astrophys.J. **669**, (2007), 862. SLAC-PUB-12334, MPP-2007-14, astro-ph/0702008.

N. Otte. *Constraints on the steady and pulsed VHE gamma-ray emission from observation of PSR B1951+32 / CTB 80 with the MAGIC Telescope* . Astrophys.J. **669**, (2007), 1143–1149. MPP-2007-13, astro-ph/0702077.

Dimitrios Tsimpis. *Fivebrane instantons and Calabi-Yau fourfolds with flux* . JHEP **0703**, (2007), 099. MPP-2007-12, hep-th/0701287.

Daniel Mazin and Martin Raue. *New limits on the density of the extragalactic background light in the optical to the far-infrared from the spectra of all known TeV blazars* . Astron.Astrophys. **439-452**. MPP-2007-11, astro-ph/0701694.

Georg G. Raffelt. *Supernova neutrino observations: What can we learn?* MPP-2007-10, astro-ph/0701677.

Sean Fleming, Andre H. Hoang, Sonny Mantry, and Iain W. Stewart. *Jets from Massive Unstable Particles: Top-Mass Determination* MIT-CTP 3791, CALT-68-2624, MPP-2007-9, hep-ph/0703207.

Helmut Rechenberg. *Kopenhagen 1941 und die Natur des deutschen Uranprojektes* (Saechsische Akademie der Wissenschaften, Leipzig). MPP-2007-8 (2005).

Gabriel Lopes Cardoso, Johannes M. Oberreuter, and Jan Perz. *Entropy function for rotating extremal black holes in very special geometry* . JHEP **0705**, (2007), 025. LMU-ASC 01/07, MPP-2007-7, hep-th/0701176.

G. G. Raffelt and G. Sigl. *Self-induced decoherence in dense neutrino gases* . Phys.Rev.D **75**, (2007), 083002. MPP-2007-6, hep-ph/0701182.

Johanna Erdmenger, Rene Meyer, and Jeong-Hyuck Park. *Spacetime Emergence in the Robertson-Walker Universe from a Matrix model* . Phys.Rev.Lett. **98**, (2007), 261301. MPP-2007-5, arxiv:0705.1586.

Béla Majorovits. *The GERDA Neutrinoless-Double-Beta decay experiment* 433–438. MPP-2007-4.

I. Abt, M. Altmann, A. Caldwell, K. Kröninger, X. Liu, B. Majorovits, L. Pandola, and C. Tomei. *Background reduction in neutrinoless double beta decay experiments using segmented detectors - a Monte Carlo study for the GERDA setup* . Nucl.Instrum.Meth.A **570**, (2007), 479–486. MPP-2007-3.

I. Abt, A. Caldwell, K. Kröninger, J. Liu, X. Liu, and B. Majorovits. *Identification of photons in double beta-decay experiments using segmented germanium detectors - studies with a GERDA Phase II prototype detector* . Nucl.Instrum.Meth.A **583**, (2007), 332–340. MPP-2007-2, nucl-ex/0701005.

I. Abt, A. Caldwell, D. Gutknecht, K. Kröninger, M. Lampert, X. Liu, B. Majorovits, D. Quirion, F. Stelzer, and P. Wendling. *Characterization of the first true coaxial 18-fold segmented n-type prototype detector for the GERDA project* . Nucl.Instrum.Meth.A **577**, (2007), 574. MPP-2007-1, nucl-ex/0701004.

The collaboration (OPAL). *Search for Invisibly Decaying Higgs Bosons with Large Decay Width Using the OPAL Detector at LEP* . Eur.Phys.J.C **49**, (2007), 457–472. CERN-PH-EP/2006-026, MPP-2006-290, hep-ex/0610056.

The collaboration (LEP Collaborations, ALEPH , DELPHI , L3 , OPAL , the LEP Electroweak Working Group). *A Combination of Preliminary Electroweak Measurements and Constraints on the Standard Model* CERN-PH-EP/2006-042, MPP-2006-289, hep-ex/0612034.

The collaboration (OPAL). *Inclusive Production of Charged Hadrons in Photon-Photon Collisions* . Phys.Lett.B **651**, (2007), 92–101. CERN-PH-EP/2006-038, MPP-2006-288, hep-ex/0612045.

Hans-Günther Moser. *Silicon Photomultipliers, A New Device For Low Light Level Photon Detection* . AIP Conf.Proc. **867**, (2006), 98–105. MPP-2006-287.

R. Galea, A. Caldwell, S. Schlenstedt, and H. Abramowicz. *Simulation of low energy muon frictional cooling.* . Nucl.Instrum.Meth.A **558**, (2006), 225–226. MPP-2006-284.

The collaboration (ZEUS). *Inclusive-jet and dijet cross sections in deep inelastic scattering at HERA* . Nucl.Phys.B **765**, (2007), 1–30. DESY-06-128, MPP-2006-281, hep-ex/0608048.

The collaboration (ZEUS). *Measurement of azimuthal asymmetries in neutral current deep inelastic scattering at HERA* . Eur.Phys.J.C **51**, (2007), 289–299. DESY-06-129, MPP-2006-280, hep-ex/0608053.

The collaboration (ZEUS). *Measurement of open beauty production at HERA in the D* muon final state* . Eur.Phys.J.C **50**, (2007), 299–314. DESY-06-166, MPP-2006-279, hep-ex/0609050.

The collaboration (ZEUS). *Photoproduction of events with rapidity gaps between jets at HERA* DESY-06-215, MPP-2006-278, hep-ex/0612008.

The collaboration (ZEUS). *Measurement of K0S, Lambda, Antilambda production at HERA* . Eur.Phys.J.C **51**, (2007), 1–23. DESY-06-226, MPP-2006-277, hep-ex/0612023.

The collaboration (ZEUS). *Jet-radius dependence of inclusive-jet cross sections in deep inelastic scattering at HERA* DESY-06-241, MPP-2006-276, `hep-ex/0701039`.

A. Caldwell (ZEUS). *Measurement of high-x neutral current cross sections with the ZEUS detector.* MPP-2006-275.

A. Caldwell. *F(L) measurements at HERA.* MPP-2006-274.

The collaboration (H1). *Production of D* Mesons with Dijets in Deep-Inelastic Scattering at HERA* . Eur.Phys.J.C **51**, (2007), 271–287. DESY06-240, MPP-2006-273, `hep-ex/0701023`.

P. Buzhan, B. Dolgoshein, R. Mirzoyan, A. N. Otte, et al. *Large area silicon photomultipliers: Performance and application* . Nucl.Instrum.Meth.A **567**, (2006), 78–82. MPP-2006-271.

M. Hayashida. *Development of HPDs with an 18-mm-diameter GaAsP photocathode for the MAGIC-II* . Nucl.Instrum.Meth.A **567**, (2006), 180–183. MPP-2006-266.

R. Mirzoyan. *Very high quantum efficiency PMTs with bialkali photo-cathode* . Nucl.Instrum.Meth.A **567**, (2006), 230–232. MPP-2006-265.

B. I. Abelev, V. Eckardt, N. Schmitz, P. Seyboth, et al. (STAR). *Longitudinal Double-Spin Asymmetry and Cross Section for Inclusive Jet Production in Polarized Proton Collisions at $\sqrt(s)$ = 200 GeV* . Phys.Rev.Lett. **97**, (2006), 252001. MPP-2006-263, `hep-ex/0608030`.

Hendrik Bartko. *Observation of Galactic Sources of Very High Energy Gamma-Rays with the MAGIC Telescope* . Phd thesis, LMU München. MPP-2006-262 (2007).

A. N. Otte et al. *Prospects of Using Silicon Photomultipliers for the Astroparticle Physics Experiments EUSO and MAGIC* . IEEE Transactions on Nuclear Science **53**, (2006), 636–640. MPP-2006-261.

Jeppe R. Andersen Serguei Baranov, Jochen Bartels, Gergely G. Barnafoldi, Grigorios Chachamis, John Collins, Guenter Grindhammer, Goesta Gustafson, Magnus Hansson, Gunnar Ingelman, Hannes Jung, Leif Joensson, Albert Knutsson, Henri Kowalski, Krzysztof Kutak, Albrecht Kyrieleis, Peter Levai, Artem Lipatov, Leif Loennblad, Michael Lublinsky, Giuseppe Marchesini, Izabela Milcewicz, Christiane Risler, Agustin Sabio-Vera, Malin Sjoedahl, Anna Stasto, Jacek Turnau, Graeme Watt, and Nikolai Zotov (Small x). *Small x Phenomenology - summary of the 3rd Lund Small x Workshop in 2004* . Eur.Phys.J.C **48**, (2006), 53–105. DESY 06-052, MPP-2006-259, `hep-ph/0604189`.

Georg G. Raffelt. *CMB Limits on secret neutrino interactions* 329–335. MPP-2006-258.

Josef Pradler. *Electroweak Contributions to Thermal Gravitino Production* . Diploma thesis, Universität Wien. MPP-2006-257 (2006).

Frank D. Steffen. *Supersymmetrische Kandidaten für die Dunkle Materie* . MPP-2006-256. `arxiv:0708.3600`.

Rene Meyer. *Quantizing Two-Dimensional Dilaton Gravity with Fermions: The Vienna Way* LU-ITP 2006/019, MPP-2006-255, `hep-th/0612288`.

F. Lucarelli, M. Lopez, E. Ona-Wilhelmi, and M. V. Fonseca (MAGIC). *The timing system of the MAGIC telecope* . Int.J.Mod.Phys.A **20**. MPP-2006-250.

A. Biland (MAGIC). *VHE gamma-ray astronomy with the MAGIC telescope* MPP-2006-249.

J. Albert et al. *Signal reconstrucion for the MAGIC telescope* MPP-2006-248, `astro-ph/0612385`.

J. Albert et al. *First bounds on the very high energy gamma-ray emission from Arp 220* . Astrophys.J. **658**, (2007), 245. MPP-2006-247, `astro-ph/0611786`.

J. Albert, E. Aliu, H. Anderhub, P. Antoranz, A. Armada, C. Baixeras, J. A. Barrio, H. Bartko, D. Bastieri, J. Becker, W. Bednarek, K. Berger, C. Bigongiari, A. Biland, R. K. Bock, P. Bordas, V. Bosch-Ramon, T. Bretz, I. Britvitch, M. Camara, E. Carmona, A. Chilingarian, S. Ciprini, J. A. Coarasa, S. Commichau, J. L. Contreras, J. Cortina, M. T. Costado, V. Curtef, V. Danielyan, F. Dazzi, A. De Angelis, C. Delgado, R. de los Reyes, B. De Lotto, E. Domingo-Santamaria, D. Dorner, M. Doro, M. Errando, M. Fagiolini, D. Ferenc, E. Fernandez, R. Firpo, J. Flix, M. V. Fonseca, L. Font, M. Fuchs, N. Galante, R. Garcia-Lopez, M. Garczarczyk, M. Gaug, M. Giller, F. Goebel, D. Hakobyan, M. Hayashida, T. Hengstebeck, A. Herrero, D. Hohne, J. Hose, and C. C. Hsu. *MAGIC upper limits on high energy emission from GRBs* . Astrophys.J. **667**, (2007), 358. MPP-2006-246, `astro-ph/0612548`.

Robert Wagner. *Measurement of VHE γ-ray emission from four blazars using the MAGIC telescope and a comparative blazar study* . Phd thesis, TU München. MPP-2006-245 (2007).

Jelena Ninkovic, Robert Hartmann, Peter Holl, Gerhard Lutz, Christine Merck, Razmik Mirzoyan, Hans-Guenther Moser, Adam-Nepomuk Otte, Rainer Richte, Heike Soltau, and Masahiro Teshima. *The Avalanche drift diode: A backilluminated Silicon Photomultiplier* MPP-2006-244.

Jelena Ninkovic. *Recent Developments in Silicon Photomultipliers* . Nucl.Instrum.Meth.A **580**, (2007), 1020–1022. MPP-2006-243.

Jelena Ninkovi'c, Rouven Eckhart, Robert Hartmann, Peter Holl, Christian Koitsch, Gerhard Lutz, Christine Merck, Razmik Mirzoyan, Hans-Günther Moser, Adam-Nepomuk Otte, Rainer Richter, Gerhard Schaller, Florian Schopper, Heike Soltau, Masahiro Teshima, and George Vâlceanu. *The avalanche drift diode: A back illumination drift silicon* *photomultiplier* . Nucl.Instrum.Meth.A **580**, (2007), 1013–1015. MPP-2006-242.

Jörg v. Loeben. *Test und Kalibrierung der Präzisionsdriftrohrkammern des ATLAS-Myonspektrometers* . Diploma thesis, TU München. MPP-2006-241 (2006).

Xiang Liu. *GERmanium Detector Array,GERDA* . Phys.Scr.T **127**, (2006), 46–48. MPP-2006-240.

M. Helbich, Y. Ning, S. Paganis, Z. Ren, W. B. Schmidke, F. Sciulli, U. Schneekloth, C. Büttner, A. Caldwell, and J. Sutiak. *The Spectrometer System for Measuring ZEUS Luminosity at HERA* . Nucl.Instrum.Meth.A **565**, (2006), 572–588. MPP-2006-238, physics/0512153.

S. Chekanov et al. (ZEUS). *Measurement of neutral current cross sections at high Bjorken-x with the ZEUS detector at HERA* . Eur.Phys.J.C **49**, (2007), 523–544. MPP-2006-234, hep-ex/0608014.

S. Chekanov et al. (ZEUS). *Measurement of prompt photons with associated jets in photoproduction at HERA* . Eur.Phys.J.C **49**, (2007), 511–522. DESY-06-125, MPP-2006-232, hep-ex/0608028.

J. Adams, V. Eckardt, N. Schmitz, P. Seyboth, et al. *Proton-lambda correlations in central Au+Au collisions at* $\sqrt{s_{NN}}$ *= 200 GeV* . Phys.Rev.C **74**, (2006), 064906. MPP-2006-231, nucl-ex/0511003.

J. Adams, V. Eckardt, N. Schmitz, P. Seyboth, et al. *The multiplicity dependence of inclusive* p_t *spectra from p-p collisions at* $\sqrt{s}$ *= 200 GeV* . Phys.Rev.D **74**, (2006), 032006. MPP-2006-230, nucl-ex/0606028.

Nikolas Akerblom, Ralph Blumenhagen, Dieter Lust, Erik Plauschinn, and Maximilian Schmidt-Sommerfeld. *Non-perturbative SQCD Superpotentials from String Instantons* . JHEP **0704**, (2007), 067. LMU-ASC 83/06, MPP-2006-228, hep-th/0612132.

J. Albert et al. *Observation of very high energy gamma-rays from the AGN 1ES 2344+514 in a low emission state with the MAGIC telescope* . Astrophys.J. **662**, (2007), 892. MPP-2006-227, astro-ph/0612383.

J. Haestier, S. Heinemeyer, W. Hollik, D. Stöckinger, A. M. Weber, and G. Weiglein. *Precision Observables in the MSSM: W mass and the muon magnetic moment* . AIP Conf.Proc. **903**, (2007), 291–294. Edinburgh 2006/36, MPP-2006-224, hep-ph/0610318.

J. Astrom, P. C. F. Di Stefano, F. Probst, L. Stodolsky, and J. Timonen. *Comment on "Universal Distribution of Interearthquake Times"* MPP-2006-221, physics/0612081.

The collaboration (H1). *Diffractive Open Charm Production in Deep-Inelastic Scattering and Photoproduction at HERA* . Eur.Phys.J.C **50**, (2007), 1–20. DESY 06-164, MPP-2006-220, hep-ex/0610076.

Bernd A. Kniehl and Alberto Sirlin. *Simple On-Shell Renormalization Framework for the Cabibbo-Kobayashi-Maskawa Matrix* . Phys.Rev.D **74**, (2006), 116003. DESY 06-207, NYU-TH/06/10/20, MPP-2006-219, hep-th/0612033.

N. Ch. Benekos, S. Baranov, A. Barashkou, L. Chevalier, J. F. Laporte, D. Pomarede, S. Goldfarb, T. Moore, D. Rebuzzi, M. Schott, S. Spagnolo, and I. Trigger (ATLAS Muon). *Muon Detector Description as built and its Simulation for the ATLAS experiment* NIMA 46098, MPP-2006-218.

Steve Blanchet and Pasquale Di Bari. *Flavor effects on leptogenesis predictions* . JCAP **0703**, (2007), 018. MPP-2006-217, hep-ph/0607330.

Ali Askin. *Light Yield Investigation of Titanium Doped Al2O3 Crystals for CRESST Dark Matter Search* . Diploma thesis. MPP-2006-216 (2006).

Patrick Huff. *Messung der Lichtausbeute von Rueckstosskernen in CaWO4* . Diploma thesis, TU München. MPP-2006-215 (2006).

E. Lorenz, I. Britvich, D. Ferenc, N. Otte, D. Renker, Z. Sadygov, and Y. Stoykov. *Some studies for a development of a small animal PET based on LYSO crystals and Geigermode-APDs* . Nucl.Instrum.Meth.A **572**, (2007), 259–261. MPP-2006-213.

A. Abdesselam et al. (ATLAS SCT). *ATLAS SCT end-cap module production* MPP-2006-212.

A. Abdesselam et al. (ATLAS SCT). *The barrel modules of the ATLAS semiconductor tracker.* . Nucl.Instrum.Meth.A **568**, (2006), 642–671. MPP-2006-211.

C. Zhang, P. Lechner, G. Lutz, M. Porro, R. H. Richter, J. Treis, L. Strüder, and S. N. Zhang. *Development of DEPFET Macropixel detectors* . Nucl.Instrum.Meth.A **568**, (2006), 207–216. MPP-2006-210.

J. Treis, P. Fischer, O. Hälker, M. Harter, S. Herrmann, R. Kohrs, H. Krüger, P. Lechner, G. Lutz, I. Peric, M. Porro, R. H. Richter, L. Strüder, M. Trimpl, and N. Wermes. *Study of noise and spectroscopic performance of DEPMOSFET matrix prototypes for XEUS* . Nucl.Instrum.Meth.A **568**, (2006), 191–200. MPP-2006-209.

C. Sandow, L. Andricek, P. Fischer, R. Kohrs, H. Krüger, G. Lutz, H. G. Moser, L. Reuen, R. H. Richter, L. Strüder, J. Treis, M. Trimpl, and N. Wermes. *Clear-performance of linear DEPFET devices* . Nucl.Instrum.Meth.A **568**, (2006), 176–180. MPP-2006-208.

M. Trimpl, L. Andricek, P. Fischer, R. Kohrs, H. Krüger, L. Lutz, H. G. Moser, I. Peric, L. Reuen, R. H. Richter, C. Sandow, L. Strüder, J. Treis, E. v. Törne, J. J. Velthuis, and N. Wermes. *Performance of a DEPFET pixel system for particle detection* . Nucl.Instrum.Meth.A **568**, (2006), 201–206. MPP-2006-207.

K. Gärtner and R. H. Richter. *DEPFET sensor design using an experimental 3d device simulator* . Nucl.Instrum.Meth.A **568**, (2006), 12–17. MPP-2006-206.

J. Treis, L. Bombelli, R. Eckhart, C. Fiorini, P. Fischer, O. Hälker, S. Herrmann, P. Lechner, G. Lutz, I. Peric, M. Porro, R. H. Richter, G. Schaller, F. Schopper, H. Soltau, L. Strüder, and S. Wölfel. *Advancements in DEPMOSFET device developments for XEUS* . Proc.SPIE **6276**. MPP-2006-205.

N. Kimmel, R. Hartmann, P. Holl, N. Meidinger, R. H. Richter, and L. Strüder. *Analysis of the charge collection process in pn CCDs* . Proc.SPIE **6276**, (2006), 62760D. MPP-2006-204.

S. Wölfel, S. Herrmann, P. Lechner, G. Lutz, M. Porro, R. H. Richter, L. Strüder, and J. Treis. *Sub-electron noise measurement on repetitive non-destructive readout devices* . Nucl.Instrum.Meth.A **566**, (2006), 536–539. MPP-2006-203.

M. Porro, G. Ferrari, P. Fischer, O. Hälker, M. Harter, S. Herrmann, N. Hörnel, R. Kohrs, H. Krüger, P. Lechner, G. Lutz, I. Peric, R. H. Richter, L. Strüder, J. Treis, M. Trimpl, and N. Wermes. *Spectroscopic Performance of the DEPMOS Detector/Amplifier Device with Respect to Different Filtering Techniques and Operation Conditions* . IEEE Transactions on Nuclear Science **53**, (2006), 401–408. MPP-2006-202.

Vladimir Chekelian. *Neutral Current DIS with polarised e+- at HERA* MPP-2006-201.

V. Chekelian, C. Gwenlan, and R. S. Thorne. *The Structure Functions and Low x Working Group Summary* MPP-2006-200, `hep-ph/0607116`.

L. Pandola, M. Bauer, K. Kröninger, X. Liu, C. Tomei, S. Belogurov, D. Franco, A. Klimenko, and M. Knapp. *Monte Carlo evaluation of the muon-induced background in the GERDA double beta decay experiment* . Nucl.Instrum.Meth.A **570/1**, (2006), 149–158. MPP-2006-199.

B. I. Abelev, V. Eckardt, N. Schmitz, and P. Seyboth. *Neutral kaon interferometry in Au+Au collisions at s(NN)**(1/2) = 200 GeV* . Phys.Rev.C **74**, (2006), 054902. MPP-2006-198, `nucl-ex/0608012`.

J. Adams, V. Eckardt, N. Schmitz, P. Seyboth, et al. *Direct observation of dijets in central Au+Au collisions at s(NN)**(1/2) = 200 GeV* . Phys.Rev.Lett. **97**, (2006), 162301. MPP-2006-197, `nucl-ex/0604018`.

J. Adams, V. Eckardt, N. Schmitz, P. Seyboth, et al. *Forward neutral pion production in p+p and d+Au collisions at s(NN)**(1/2) = 200 GeV* . Phys.Rev.Lett. **97**, (2006), 152302. MPP-2006-196, `nucl-ex/0602011`.

B. Abelev, V. Eckardt, N. Schmitz, and P. Seyboth. *Identified baryon and meson distributions at large transverse momenta from Au+Au collisions at s(NN)**(1/2) = 200 GeV* . Phys.Rev.Lett. **97**, (2006), 152301. MPP-2006-195, `nucl-ex/0606003`.

B. Abelev, V. Eckardt, N. Schmitz, P. Seyboth, et al. *Strange baryon resonance production in s(NN)**(1/2) = 200 GeV p+p and Au+Au collisions* . Phys.Rev.Lett. **97**, (2006), 132301. MPP-2006-194, `nucl-ex/0604019`.

J. Adams, V. Eckardt, N. Schmitz, P. Seyboth, et al. *Minijet deformation and charge-independent angular correlations on momentum subspace (eta, phi) in Au-Au collisions at s(NN)**(1/2) = 130 GeV* . Phys.Rev.C **73**, (2006), 064907. MPP-2006-193, `nucl-ex/0411003`.

J. Adams, V. Eckardt, N. Schmitz, P. Seyboth, et al. *Transverse-momentum p(t) correlations on (eta, phi) from mean-p(t) fluctuations in Au-Au collisions at s(NN)**1/2 = 200 GeV* . J.Phys.G **32**, (2006), L37–L48. MPP-2006-192, `nucl-ex/0509030`.

J. Adams, V. Eckardt, N. Schmitz, P. Seyboth, et al. *Identified hadron spectra at large transverse momentum in p+p and d+Au collisions at s(NN)**(1/2) = 200 GeV* . Phys.Lett.B **637**, (2006), 161–169. MPP-2006-191, `nucl-ex/0601033`.

J. Adams, V. Eckardt, N. Schmitz, P. Seyboth, et al. *Multiplicity and pseudorapidity distributions of charged particles and photons at forward pseudorapidity in Au + Au collisions at s(NN)**(1/2) = 62.4 GeV* . Phys.Rev.C **73**, (2006), 034906. MPP-2006-190, `nucl-ex/0511026`.

J. Adams, V. Eckardt, N. Schmitz, P. Seyboth, et al. *Directed flow in Au+Au collisions at s(NN)**(1/2) = 62 GeV* . Phys.Rev.C **73**, (2006), 034903. MPP-2006-189, `nucl-ex/0510053`.

J. Adams, V. Eckardt, N. Schmitz, P. Seyboth, et al. *Hadronization geometry from net-charge angular correlations on momentum subspace (eta, phi) in Au-Au collisions at s(NN)**(1/2) = 130 GeV* . Phys.Lett.B **634**, (2006), 347–355. MPP-2006-188, `nucl-ex/0406035`.

C. Alt, V. Eckardt, N. Schmitz, P. Seyboth, et al. *Energy and centrality dependence of anti-p and p production and the anti-Lambda/anti-p ratio in Pb+Pb collisions between 20 A GeV and 158 A GeV* . Phys.Rev.C **73**, (2006), 044910. MPP-2006-187.

C. Alt, V. Eckardt, N. Schmitz, P. Seyboth, et al. *Upper limit of D0 production in central Pb-Pb collisions at 158 A GeV* . Phys.Rev.C **73**, (2006), 034910. MPP-2006-186, `nucl-ex/0507031`.

C. Alt, V. Eckardt, N. Schmitz, P. Seyboth, et al. *Inclusive production of charged pions in p + p collisions at 158 GeV/c beam momentum* . Eur.Phys.J.C **45**, (2006), 343–381. MPP-2006-185, `hep-ex/0510009`.

J. Abdallah et al. (DELPHI). *Search for η_b in two-photon collisions at LEP II with the DELPHI detector* . Phys.Lett.B **634**, (2006), 340–346. CERN-EP-PH-2005-028, MPP-2006-183, `hep-ex/0601042`.

J. Abdallah et al. (DELPHI). *Study of Leading Hadrons in Gluon and Quark Fragmentation* . Phys.Lett.B **643**, (2006), 147–157. CERN-PH-EP/2006-015, MPP-2006-182, hep-ex/0610031.

S. Kraml, E. Accomando, A. G. Akeroyd, E. Akhmetzyanova, J. Albert, A. Alves, N. Amapane, M. Aoki, G. Azuelos, S. Baffioni, A. Ballestrero, V. Barger, A. Bartl, P. Bechtle, G. Belanger, A. Belhouari, R. Bellan, A. Belyaev, P. Benes, K. Benslama, W. Bernreuther, M. Besancon, G. Bevilacqua, M. Beyer, M. Bluj, S. Bolognesi, M. Boonekamp, F. Borzumati, F. Boudjema, A. Brandenburg, T. Brauner, C. P. Buszello, J. M. Butterworth, M. Carena, D. Cavalli, G. Cerminara, S. Y. Choi, B. Clerbaux, C. Collard, J. A. Conley, A. Deandrea, S. De Curtis, R. Dermisek, A. De Roeck, G. Dewhirst, M. A. Diaz, J. L. Diaz-Cruz, D. D. Dietrich, M. Dolgopolov, D. Dominici, M. Dubinin, O. Eboli, J. Ellis, N. Evans, L. Fano, J. Ferland, S. Ferrag, S. P. Fitzgerald, H. Fraas, F. Franke, S. Gennai, I. F. Ginzburg, R. M. Godbole, T. Gregoire, T. Hahn, et al. *CP Studies and Non-Standard Higgs Physics* CERN-2006-009, MPP-2006-181, hep-ph/0608079.

P. Skands et al. *A Repository for Beyond-the-Standard-Model Tools* MPP-2006-180.

Ralph Blumenhagen, Sebastian Moster, Rene Reinbacher, and Timo Weigand. *Massless Spectra of Three Generation U(N) Heterotic String Vacua* . JHEP **0705**, (2007), 41. MPP-2006-179, hep-th/0612039.

D. Rebuzzi, K. A. Assamagan, N. Ch. Benekos, A. Di Simone, Y. Hasegawa, and N. Van Eldik. *GEANT4 Muon Digitization in the ATHENA Framework* MPP-2006-178.

N. Ch. Benekos, L. Chevalier, J. F. Laporte, and M. Schott. *Impacts of Misalignment in the ATLAS Muon Spectrometer on the measured Z-Boson resonance* NIMA 46099, MPP-2006-176.

N. Ch. Benekos and M. Schott. *Study of Z-Boson measurements at the ATLAS Experiment* MPP-2006-174.

Nektarios Ch. Benekos and Matthias Schott. *Z-Boson resonance as a Calibration and Alignment Process for the ATLAS Muon Spectrometer* MPP-2006-173.

Georg G. Raffelt. *Astrophysical Axion Bounds* , vol. 741, 51–71. MPP-2006-172 (2008), hep-ph/0611350.

D. Mazin and F. Goebel. *Break in the VHE spectrum of PG 1553+113: new upper limit on its redshift?* . Astrophys.J.L. **655**, (2007), L13–L16. MPP-2006-171, astro-ph/0611817.

S. Baranov, N. Ch. Benekos, L. Chevalier, S. Goldfarb, J. F. Laporte, T. Moore, A. Ouraou, D. Pomarede, D. Rebuzzi, M. Schott, S. Spagnolo, and I. Trigger. *Muon Detector-Description as-built and its Simulation for the ATLAS Experiment* MPP-2006-170.

Corneliu Sochichiu. *Random walks in N = 4 Super Yang-Mills* MPP-2006-168.

Jörg Dubbert, Sandra Horvat, Dmitri Khartchenko, Oliver Kortner, Sergei Kotov, Hubert Kroha, Andrea Manz, Kiril Nikolaev, Felix Rauscher, Robert Richter, Arnold Staude, and Chrysostomos Valderanis. *Modelling of the Space-to-Drift-Time Relationship of the ATLAS Monitored Drift-Tube Chambers in the Presence of Magnetic Fields* MPP-2006-166.

T. I. Rashba, V. B. Semikoz, S. Turck-Chieze, and J. W. F. Valle. *Probing the internal solar magnetic field through g-modes* . Mon.Not.R.Astron.Soc. **377**, (2007), 453. IFIC/06-40, MPP-2006-165, astro-ph/0611728.

Jörg Dubbert, Manfred Groh, Oliver Kortner, Hubert Kroha, Jörg v. Loeben, Robert Richter, Jens Schmaler, Hans v. d. Schmitt, Otmar Biebel, Doris Merkl, Felix Rauscher, and Arnold Staude. *Integration, Installation, and Commissioning of Large Monitored Drift Tube Chambers of the ATLAS Barrel Muon Spectrometer* MPP-2006-164.

Jörg Dubbert, Manfred Groh, Oliver Kortner, Hubert Kroha, Jörg v. Loeben, Robert Richter, Jens Schmaler, Hans v. d. Schmitt, Otmar Biebel, Doris Merkl, Felix Rauscher, and Arnold Staude. *Integration, Commissioning and Installation of Monitored Drift Tube Chambers for the ATLAS Barrel Muon Spectrometer* MPP-2006-163.

Oleg Andreev and Valentin Zakharov. *On Heavy-Quark Free Energies, Entropies, Polyakov Loop, and AdS/QCD* . MPP-2006-162 (2007), hep-ph/0611304.

J. Schieck, S. Bethke, O. Biebel, S. Kluth, P. A. Movilla Fernandez, and C. Pahl (JADE). *Measurement of the Strong Coupling* α_S *from the Four-Jet Rate in e+e- Annihilation using JADE data* . Eur.Phys.J.C **48**, (2006), 3–13. MPP-2006-161.

Andre H. Hoang and Maximilian Stahlhofen. *Two-Loop Ultrasoft Running of the* $O(v^2)$ *QCD Quark Potentials* . Phys.Rev.D **75**, (2007), 054025. MPP-2006-160, hep-ph/0611292.

T. Hahn. *A Mathematica Interface for FormCalc-generated Code* . Comput.Phys.Commun. **178**, (2008), 217–221. MPP-2006-159, hep-ph/0611273.

M. Frank, T. Hahn, S. Heinemeyer, W. Hollik, H. Rzehak, and G. Weiglein. *The Higgs Boson Masses and Mixings of the Complex MSSM in the Feynman-Diagrammatic Approach* . JHEP **0702**, (2007), 047. DCPT/06/160, IPPP/06/80, , PSI-PR-06-14, MPP-2006-158, hep-ph/0611326.

Pedro Ruiz-Femenia and Andre Hoang. *Recent advances in NRQCD* MPP-2006-157, hep-ph/0611291.

Malcolm Fairbairn, Timur Rashba, and Sergey Troitsky. *Shining light through the Sun* . Phys.Rev.Lett. **98**, (2007), 201801. MPP-2006-156, astro-ph/0610844.

S. Blanchet, P. Di Bari, and G. G. Raffelt. *Quantum Zeno effect and the impact of flavor in leptogenesis* . JCAP **0703**, (2007), 012. MPP-2006-155, hep-ph/0611337.

V. Corato, P. Silvestrini, A. Gorlich, J. Wosiek, and L. Stodolsky. *Simulations of some quantum gates, with decoherence* . Phys.Rev.B **75**, (2007), 184507. MPP-2006-154, cond-mat/0611445.

Manuela Judith Jelen. *The CRESST Dark Matter Search - Background Considerations and Data ANalysis* . Diploma thesis. MPP-2006-153 (2006).

Jorge Portoles, Ignasi Rosell, and Pedro Ruiz-Femenia. *Vanishing chiral couplings in the large-N_C resonance theory* . Phys.Rev.D **75**, (2007), 114011. IFIC/06-42, MPP-2006-152, hep-ph/0611375.

Jan Hamann, Steen Hannestad, Martin S. Sloth, and Yvonne Y. Y. Wong. *How robust are inflation model and dark matter constraints from cosmological data?* . Phys.Rev.D **75**, (2007), 023522. DESY 06-205, MPP-2006-151, astro-ph/0611582.

H. K. Dreiner, S. Grab, M. Krämer, and M. K. Trenkel. *Supersymmetric NLO QCD Corrections to Resonant Slepton Production and Signals at the Tevatron and the LHC* . Phys.Rev.D **75**, (2007), 035003. BONN-TH-2006-06, PITHA-06-10, MPP-2006-150, hep-ph/0611195.

Stefan Dittmaier, Michael Krämer, Alexander Mück, and Tobias Schlüter. *MSSM Higgs-boson production in bottom-quark fusion: electroweak radiative corrections* . JHEP **0703**, (2007), 114. PITHA 06/11, MPP-2006-149, hep-ph/0611353.

Ringaile Placakyte. *First Measurement of Charged Current Cross Sections with Longitudinally Polarised Positrons at HERA* . Phd thesis, LMU Muenchen. MPP-2006-148 (2006).

E. Accomando, A. Denner, and S. Pozzorini. *Logarithmic electroweak corrections to e+ e- -> nue anti-nue W+ W-* . JHEP **0703**, (2007), 078. DFTT-19/2006, , PSI-PR-06-12, MPP-2006-147, hep-ph/0611289.

Georg G. Raffelt. *Axions - Motivation, limits and searches* . J.Phys.A **40**, (2007), 6607–6620. MPP-2006-146, hep-ph/0611118.

R. Mirzoyan, D. Sobczynska, E. Lorenz, and M. Teshima. *Tagging single muons and other long-flying relativistic charged particles by ultra-fast timing in air Cherenkov telescopes* . Astropart.Phys. **25**, (2006), 342–348. MPP-2006-145.

M. V. Fonseca (MAGIC). *Status report of the 17 m telescope MAGIC* MPP-2006-144.

P. Antoranz, M. V. Fonseca, and M. Asensio (MAGIC). *Influence of Mismatch Effects on the Nanosecond-range Pulse Detection with the MAGIC II Telescope* MPP-2006-143.

P. Antoranz, M. V. Fonseca, and M. Asensio (MAGIC). *Noise-Bandwidth Tradeoff in the Design of the Pixel Preamplifiers for the MAGIC II Telescope Camera* MPP-2006-142.

Josef Pradler and Frank Daniel Steffen. *Constraints on the Reheating Temperature in Gravitino Dark Matter Scenarios* . Phys.Lett.B **648**, (2007), 224–235. MPP-2006-141, hep-ph/0612291.

Kathrin A. Hochmuth and Werner Rodejohann. *On Symmetric Lepton Mixing Matrices* . Phys.Lett.B **644**, (2007), 147–152. MPP-2006-140, hep-ph/0611030.

Oliver Brein, Wolfgang Hollik, and Benjamin Koch. *Towards a realistic MSSM prediction for neutrino-nucleon deep-inelastic scattering* . AIP Conf.Proc. **903**, (2007), 181–184. IPPP/06/74, DCPT/06/148, MPP-2006-139, hep-ph/0611033.

A. Bredenstein, A. Denner, S. Dittmaier, and M. M. Weber. *Radiative corrections to the semileptonic and hadronic Higgs-boson decays H -> W W/Z Z -> 4 fermions* . JHEP **0702**, (2007), 080. MPP-2006-138, hep-ph/0611234.

Wolfgang Hollik and Michael Rauch. *Higgs-Boson Production in Association with Heavy Quarks* . AIP Conf.Proc. **903**, (2007), 117–120. Edinburgh 2006/33, MPP-2006-137, hep-ph/0610340.

D. Mazin. *Observations of Extragalactic Sources with the MAGIC Telescope* . Astrophys.Sp.Sci. **309**, (2007), 497–503. MPP-2006-136, astro-ph/0609152.

Ralph Blumenhagen, Boris Kors, Dieter Lust, and Stephan Stieberger. *Four-dimensional String Compactifications with D-Branes, Orientifolds and Fluxes* . Phys.Rept. **445**, (2007), 1–193. CERN-PH-TH/2006-218, LMU-ASC 66/06, MPP-2006-135, hep-th/0610327.

W. Hollik, U. Meier, and S. Uccirati. *The effective electroweak mixing angle* $\sin^2\theta_{eff}$ *with two-loop bosonic contributions* . Nucl.Phys.B **765**, (2007), 154–165. MPP-2006-134, hep-ph/0610312.

J. Schieck. *Measurement of* α_S *in e+e- collisions at LEP and JADE* MPP-2006-133, hep-ex/0610013.

C. Amsler, C. A. Baker, B. M. Barnett, C. J. Batty, M. Benayoun, P. Blüm, K. Braune, D. V. Bugg, V. Credé, K. M. Crowe, M. Doser, W. Dünnweber, D. Engelhardt, M. A. Faessler, R. P. Haddock, F. H. Heinsius, N. P. Hessey, P. Hidas, D. Jamnik, H. Kalinowsky, P. Kammel, J. Kisiel, E. Klempt, H. Koch, O. Kortner, M. Kunze, U. Kurilla, R. Landua, H. Matthäy, C. A. Meyer, F. Meyer-Wildhagen, R. Ouared, K. Peters, B. Pick, M. Ratajczak, C. Regenfus, W. Roethel, K. Seth, U. Strohbusch, M. Suffert, U. Thoma, I. Uman, S. Wallis-Plachner, D. Walther, U. Wiedner, B. S. Zou, and C. Zupancic (Crystal Barrel). *Study of K anti-K resonances in anti-p p —> K+ K- pi0 at 900-MeV/c and 1640-MeV/c* . Phys.Lett.B **639**, (2006), 165–171. MPP-2006-132.

Jörg Dubbert, Sandra Horvat, Dmitri Kharchenko, Oliver Kortner, Sergei Kotov, Hubert Kroha, Andreas Manz, Susanne Mohrdieck-Möck, Kiril Nikolaev, Felix Rauscher, Robert Richter, Arnold Staude, Wolfram Stiller, and

Chrysostomos Valderanis. *Operation of the ATLAS muon drift-tube chambers at high background rates and in magnetic fields* . IEEE Transactions on Nuclear Science **53**, (2006), 562–566. MPP-2006-131.

Monika Blanke, Andrzej J. Buras, Anton Poschenrieder, Stefan Recksiegel, Cecilia Tarantino, Selma Uhlig, and Andreas Weiler. *Rare and CP-Violating K and B Decays in the Littlest Higgs Model with T-Parity* . JHEP **0701**, (2007), 066. TUM-HEP-649-06, MPP-2006-130, hep-ph/0610298.

Jeong-Hyuck Park and Dimitrios Tsimpis. *Topological twisting of conformal supercharges* . Nucl.Phys.B **776**, (2007), 405–430. MPP-2006-129, hep-th/0610159.

Oliver Brein and Thomas Hahn. *On MSSM charged Higgs boson production in association with an electroweak W boson at electron positron colliders* . Eur.Phys.J.C **52**, (2007), 397–411. IPPP/06/67, DCPT/06/134, MPP-2006-128, hep-ph/0610079.

Kathrin A. Hochmuth, Franz v. Feilitzsch, Brian D. Fields, Teresa Marrodan Undagoitia, Lothar Oberauer, Walter Potzel, and Michael Wurm. *Probing the Earth's interior with the LENA detector* . Earth Moon Planets **99**, (2006), 253–264. MPP-2006-127, hep-ph/0610048.

Paul Koerber and Luca Martucci. *Deformations of calibrated D-branes in flux generalized complex manifolds* . JHEP **12**, (2006), 062. KUL-TF-06/25, MPP-2006-126, hep-th/0610044.

J. Balog and P. Weisz. *Construction and clustering properties of the 2-d non-linear sigma-model form factors: O(3), O(4), large n examples* . Nucl.Phys.B **778**, (2007), 259–309. MPP-2006-125, hep-th/0701202.

Monika Blanke and Andrzej J. Buras. *Lower Bounds on Delta M_s, d from Constrained Minimal Flavour Violation* . JHEP **0705**, (2007), 061. TUM-HEP-648/06, MPP-2006-124, hep-ph/0610037.

Michael Haack, Daniel Krefl, Dieter Lust, Antoine Van Proeyen, and Marco Zagermann. *Gaugino Condensates and D-terms from D7-branes* . JHEP **0701**, (2007), 078. LMU-ASC 64/06, , KUL-TF-06/24, MPP-2006-123, hep-th/0609211.

B. C. Allanach, C. G. Lester, and A. M. Weber. *The Dark Side of mSUGRA* . JHEP **0612**, (2006), 065. DAMTP-2006-75, , Cavendish-HEP-2006-024, MPP-2006-122, hep-ph/0609295.

W. Hollik. *Electroweak Theory* . J.Phys.Conf.Ser. **53**, (2006), 7–43. MPP-2006-121.

Wolfgang Ochs. *Scalar mesons: in search of the lightest glueball* . Nucl.Phys.B (Proc.Suppl.) **174**, (2007), 146–150. MPP-2006-120, hep-ph/0609207.

Ralph Blumenhagen, Mirjam Cvetic, and Timo Weigand. *Spacetime Instanton Corrections in 4D String Vacua - The Seesaw Mechanism for D-Brane Models* . Nucl.Phys.B **771**, (2007), 113–142. MPP-2006-119, hep-th/0609191.

Tobias Göttfert. *Iterative local Chi2 alignment algorithm for the ATLAS Pixel detector* . Diploma thesis, Universität Würzburg. MPP-2006-118 (2006).

Manuel Drees, Wolfgang Hollik, and Qingjun Xu. *One-loop calculations of the decay of the next-to-lightest neutralino in the MSSM* . JHEP **0702**, (2007), 032. Freiburg-THEP 06/16, MPP-2006-117, hep-ph/0610267.

Riccardo Apreda, Johanna Erdmenger, Dieter Lust, and Christoph Sieg. *Adding flavour to the Polchinski-Strassler background* . JHEP **0701**, (2007), 079. LMU-ASC 61/06, IFUM 875-FT, MPP-2006-116, hep-th/0610276.

S. Kluth. *Review of α_s Measurements* MPP-2006-115, hep-ex/0609020.

Irina Bavykina. *Investigation of ZnWO4 crystals as an absorbers in the CRESST Dark Matter search* . Diploma thesis, Universität Siegen. MPP-2006-114 (2006).

Frank Daniel Steffen. *Constraints on Gravitino Dark Matter Scenarios with Long-Lived Charged Sleptons* . AIP Conf.Proc. **903**, (2007), 595–598. MPP-2006-113, hep-ph/0611027.

S. Reffert. *Toroidal Orbifolds: Resolutions, Orientifolds and Applications in String Phenomenology* . Phd thesis. LMU-ASC 58/06, MPP-2006-112. hep-th/0609040.

D. Lust, S. Reffert, E. Scheidegger, and S. Stieberger. *Resolved Toroidal Orbifolds and their Orientifolds* MPP-2006-111, hep-th/0609014.

D. Lust, S. Reffert, E. Scheidegger, W. Schulgin, and S. Stieberger. *Moduli Stabilization in Type IIB Orientifolds (II)* . Nucl.Phys.B **766**, (2007), 178–231. MPP-2006-110, hep-th/0609013.

A. Denner, B. Jantzen, and S. Pozzorini. *Two-loop electroweak next-to-leading logarithmic corrections to massless fermionic processes* . Nucl.Phys.B **761**, (2007), 1–62. PSI-PR-06-10, MPP-2006-109, hep-ph/0608326.

Bernd A. Kniehl and Alberto Sirlin. *Simple Approach to Renormalize the Cabibbo-Kobayashi-Maskawa Matrix* . Phys.Rev.Lett. **97**, (2006), 221801. DESY 06-141, , NYU-TH/06/08/29, MPP-2006-108, hep-ph/0608306.

Allen Caldwell and Kevin Kröninger. *Signal discovery in sparse spectra: a Bayesian analysis* . Phys.Rev.D **74**, (2006), 092003. MPP-2006-107, physics/0608249.

The collaboration (H1). *Inclusive D* Meson Cross Sections and D* Jet Correlations in Photoproduction at HERA* . Eur.Phys.J.C **50**, (2007), 251–267. DESY 06-110, MPP-2006-106, hep-ex/0608042.

The collaboration (H1). *Measurement and QCD Analysis of the Diffractive Deep-Inelastic Scattering Cross Section at HERA* . Eur.Phys.J.C **48**, (2006), 715–748. DESY 06-049, MPP-2006-105, hep-ex/0606004.

The collaboration (H1). *Diffractive Deep-Inelastic Scattering with a Leading Proton at HERA* . Eur.Phys.J.C **48**, (2006), 749–766. DESY 06-048, MPP-2006-104, hep-ex/0606003.

Florian Gmeiner. *Gauge sector statistics of intersecting D-brane models* . Fortschr.Phys. **55**, (2007), 111–160. LMU-ASC 54/06, MPP-2006-103, hep-th/0608227.

S. Hannestad, G. G. Raffelt, G. Sigl, and Y. Y. Y. Wong. *Self-induced conversion in dense neutrino gases: Pendulum in flavour space* . Phys.Rev.D **74**, (2006), 105010. MPP-2006-102, astro-ph/0608695.

Josef Pradler and Frank Daniel Steffen. *Thermal Gravitino Production and Collider Tests of Leptogenesis* . Phys.Rev.D **75**, (2007), 023509. MPP-2006-101, hep-ph/0608344.

T. Hahn, S. Heinemeyer, W. Hollik, H. Rzehak, G. Weiglein, and K. Williams. *Higher-Order Corrected Higgs Bosons in FeynHiggs 2.5* . Pramana **69**, (2007), 861–870. MPP-2006-100, hep-ph/0611373.

E. Babichev. *Global topological k-defects* . Phys.Rev.D **74**, (2006), 085004. MPP-2006-99, hep-th/0608071.

Pasquale D. Serpico. *High energy neutrino flavor ratios, neutrino mixing angles, and astrophysical diagnostics* MPP-2006-97.

Pasquale Dario Serpico. *High Energy Astroparticle Physics with Cosmic Rays and Neutrinos* . Phd thesis, TU München. MPP-2006-96 (2006).

Corneliu Sochichiu. *Statistical mechanics for dilatations in $\mathcal{N} = 4$* MPP-2006-95.

S. Heinemeyer, W. Hollik, D. Stockinger, A. M. Weber, and G. Weiglein. *Testing the MSSM with the Mass of the W Boson* . Pramana **69**, (2007), 783–788. DCPT/06/108, IPPP/06/54, MPP-2006-94, hep-ph/0611371.

T. Hahn, S. Heinemeyer, F. Maltoni, G. Weiglein, and S. Willenbrock. *SM and MSSM Higgs Boson Production Cross Sections at the Tevatron and the LHC* CP3-06-06, DCPT/06/106, IPPP/06/53, MPP-2006-93, hep-ph/0607308.

G. L. Fogli, E. Lisi, A. Mirizzi, D. Montanino, and P. D. Serpico. *Oscillations of solar atmosphere neutrinos* . Phys.Rev.D **74**, (2006), 093004. MPP-2006-92, hep-ph/0608321.

W. Hollik. *Precision calculations in the Minimal Supersymmetric Standard Model* . Nucl.Phys.B (Proc.Suppl.) **160**, (2006), 32–37. MPP-2006-91.

A. Benoit, M. Chapellier, G. Chardin, L. Dumoulin, K. Eitel, J. Gascon, G. Gerbier, C. Goldbach, J. Jochum, A. de Lesquen, G. Nollez, F. Proebst, and W. Seidel. *Critical revision of the ZEPLIN-I sensitivity to WIMP interactions* . Phys.Lett.B **637**, (2006), 156–160. MPP-2006-90, astro-ph/0512120.

A. Cuoco, G. Mangano, G. Miele, S. Pastor, L. Perrone, O. Pisanti, and P. D. Serpico. *The relevance of mediterranean neutrino telescopes for ultra-high energy neutrino detection* . JCAP **0702**, (2007), 007. MPP-2006-89, astro-ph/0609241.

Gabriel Lopes Cardoso, Viviane Grass, Dieter Lust, and Jan Perz. *Extremal non-BPS black holes and entropy extremization* . JHEP **0609**, (2006), 078. LMU-ASC 47/06, MPP-2006-88, hep-th/0607202.

A. Mirizzi, G. G. Raffelt, and P. D. Serpico. *Photon-axion conversion in intergalactic magnetic fields and cosmological consequences* , vol. 741, 115–134. MPP-2006-87 (2008), astro-ph/0607415.

Yvonne Y. Y. Wong. *Measuring neutrino masses with weak lensing* MPP-2006-86.

T. Hahn. *Routines for the diagonalization of complex matrices* MPP-2006-85, physics/0607103.

Kathrin A. Hochmuth and Werner Rodejohann. *Low and High Energy Phenomenology of Quark-Lepton Complementarity Scenarios* . Phys.Rev.D **75**, (2007), 073001. TUM-HEP-638/06, MPP-2006-83, hep-ph/0607103.

Steen Hannestad and Georg G. Raffelt. *Neutrino masses and cosmic radiation density: Combined analysis* . JCAP **0611**, (2006), 016. MPP-2006-82, astro-ph/0607101.

T. Hahn and J. I. Illana. *Excursions into FeynArts and FormCalc* . Nucl.Phys.B (Proc.Suppl.) **160**, (2006), 101–105. CAFPE-78/06, UG-FT-208/06, MPP-2006-81, hep-ph/0607049.

Gianpiero Mangano, Gennaro Miele, Sergio Pastor, Teguayco Pinto, Ofelia Pisanti, and Pasquale D. Serpico. *Effects of non-standard neutrino-electron interactions on relic neutrino decoupling* . Nucl.Phys.B **756**, (2006), 100–116. DSF-23/2006, IFIC/06-24, MPP-2006-80, hep-ph/0607267.

J. Albert et al. *Discovery of Very High Energy Gamma-Rays from Markarian 180 Triggered by an Optical Outburst* . Astrophys.J.L. **648**, (2006), L105–L109. MPP-2006-79, astro-ph/0606630.

Stefan Kluth. *Power Corrections in Electron-Positron Annihilation: Experimental Review* MPP-2006-78, hep-ex/0606046.

M. Bauer et. al. *MaGe: a Monte Carlo framework for the Gerda and Majorana double beta decay experiments* . J.Phys.Conf.Ser. **39**, (2006), 362–362. MPP-2006-77.

Laurence Perotto, Julien Lesgourgues, Steen Hannestad, Huitzu Tu, and Yvonne Y. Y. Wong. *Probing cosmological parameters with the CMB: Forecasts from Monte Carlo simulations* . JCAP **0610**, (2006), 013. LAPTH-1148/06, MPP-2006-76, astro-ph/0606227.

The collaboration (ZEUS Collaboration S. Chekanov et al.). *Event Shapes in Deep Inelastic Scattering at HERA* .

Nucl.Phys.B **767**, (2006), 1–28. DESY-06-042, MPP-2006-74, hep-ex/0604032.

Gerhard Lutz. *Silicon Drift and Pixel Devices for X-ray Imaging and Spectroscopy* . J.Synchrotron Rad. **13**, (2006), 99–109. MPP-2006-73.

J. Albert (MAGIC). *Variable Very High Energy Gamma-ray Emission from the Microquasar LS I +61 303* . Science **312**, (2006), 1771–1773. MPP-2006-72, astro-ph/0605549.

E. Lorenz. *High-energy astroparticle physics* . Nucl.Instrum.Meth.A **567**, (2006), 1–11. MPP-2006-71.

N. Turini (MAGIC). *The MAGIC Experiment* MPP-2006-70.

J. Albert et al (MAGIC). *Detection of VHE radiation from the BL Lac PG 1553+113 with the MAGIC telescope* . Astrophys.J.L. **654**, (2007), 119–122. MPP-2006-69, astro-ph/0606161.

Nakwoo Kim and Jeong-Hyuck Park. *Massive super Yang-Mills quantum mechanics: classification and the relation to supermembrane* . Nucl.Phys.B **759**, (2006), 249–282. MPP-2006-68, hep-th/0607005.

A. Denner and S. Dittmaier. *The complex-mass scheme for perturbative calculations with unstable particles* . Nucl.Phys.B (Proc.Suppl.) **160**, (2006), 22–26. PSI-PR-06-08, MPP-2006-67, hep-ph/0605312.

Frank Daniel Steffen. *Gravitino Dark Matter and Cosmological Constraints* . JCAP **0609**, (2006), 001. MPP-2006-66, hep-ph/0605306.

The collaboration (H1). *Search for a Narrow Baryonic Resonance Decaying to $K_s^0 p$ or $K_s^0 \bar{p}$ in Deep Inelastic Scattering at HERA* . Phys.Lett.B **639**, (2006), 202–209. DESY 06-044, MPP-2006-65, hep-ex/0604056.

The collaboration (H1). *Measurement of Charm and Beauty Dijet Cross Sections in Photoproduction at HERA using the H1 Vertex Detector* . Eur.Phys.J.C **47**, (2006), 597–610. DESY 06-039, MPP-2006-64, hep-ex/0605016.

The collaboration (H1). *Search for Doubly-Charged Higgs Boson Production at HERA* . Phys.Lett.B **638**, (2006), 432–440. DESY 06-038, MPP-2006-63, hep-ex/0604027.

The collaboration (H1). *Tau Lepton Production in ep Collisions at HERA* . Eur.Phys.J.C **48**, (2006), 699–714. DESY 06-029, MPP-2006-62, hep-ex/0604022.

The collaboration (H1). *Diffractive Photoproduction of Rho Mesons with Large Momentum Transfer at HERA* . Phys.Lett.B **638**, (2006), 422–431. DESY 06-023, MPP-2006-61, hep-ex/0603038.

The collaboration (H1). *Photoproduction of Dijets with High Transverse Momenta at HERA* . Phys.Lett.B **639**, (2006), 21–31. DESY 06-020, MPP-2006-60, hep-ex/0603014.

Florian Gmeiner and Frederik Witt. *Calibrated cycles and T-duality* LMU-ASC 37/06, MPP-2006-59, math.dg/0605710.

Johanna Erdmenger, Nick Evans, and Johannes Grosse. *Heavy-Light Mesons from the AdS/CFT Correspondence* . JHEP **0701**, (2007), 098. SHEP-06-19, MPP-2006-58, hep-th/0605241.

W. Hollik, A. Huettmann, and B. A. Kniehl. *Single top production at HERA in the Standard Model and its minimal supersymmetric extension* . Nucl.Phys.B **790**, (2008), 200–215. DESY 06-041, MPP-2006-57, hep-ph/0606073.

K. Kroeninger. *Towards pulse shape analysis for the GERDA experiment* . Progr.Part.Nucl.Phys. **57**, (2006), 263–265. MPP-2006-56.

Siegfried Bethke. *Experimental Tests of Asymptotic Freedom* . Progr.Part.Nucl.Phys. **58**, (2007), 351–386. MPP-2006-54, hep-ex/0606035.

Klaus Fredenhagen, Karl-Henning Rehren, and Erhard Seiler. *Quantum Field Theory: Where We Are* . Lect.Notes Phys. **721**, (2007), 61–87. MPP-2006-53, hep-th/0603155.

P. D. Serpico. *Standard and non-standard primordial neutrinos* . Phys.Scr.T **127**, (2006), 95–96. MPP-2006-52, astro-ph/0606044.

M. Kachelriess and P. D. Serpico. *The Compton-Getting effect on ultra-high energy cosmic rays of cosmological origin* . Phys.Lett.B **640**, (2006), 225–229. MPP-2006-50, astro-ph/0605462.

Andre H. Hoang and Pedro Ruiz-Femenia. *Heavy Pair Production Currents with General Quantum Numbers in Dimensionally Regularized NRQCD* . Phys.Rev.D **74**, (2006), 114016. MPP-2006-48, hep-ph/0609151.

B. C. Allanach, C. Grojean, P. Skands, E. Accomando, G. Azuelos, H. Baer, C. Balazs, G. Belanger, K. Benakli, F. Boudjema, B. Brelier, V. Bunichev, G. Cacciapaglia, M. Carena, D. Choudhury, P. A. Delsart, U. De Sanctis, K. Desch, B. A. Dobrescu, L. Dudko, M. El Kacimi, U. Ellwanger, S. Ferrag, A. Finch, F. Franke, H. Fraas, A. Freitas, P. Gambino, N. Ghodbane, R. M. Godbole, D. Goujdami, Ph. Gris, J. Guasch, M. Guchait, T. Hahn, S. Heinemeyer, A. Hektor, S. Hesselbach, W. Hollik, C. Hugonie, T. Hurth, J. Idarraga, O. Jinnouchi, J. Kalinowski, J. L. Kneur, S. Kraml, M. Kadastik, K. Kannike, R. Lafaye, G. Landsberg, T. Lari, J. S. Lee, J. Lykken, F. Mahmoudi, M. Mangano, A. Menon, D. J. Miller, T. Millet, C. Milstene, S. Montesano, F. Moortgat, G. Moortgat-Pick, S. Moretti, and D. E. Morrissey. *Les Houches "Physics at TeV Colliders 2005" Beyond the Standard Model working group: summary report* MPP-2006-47, hep-ph/0602198.

Thomas Hahn. *SUSY Les Houches Accord 2 I/O made easy* MPP-2006-46, hep-ph/0605049.

J. Albert et al. (MAGIC). *Discovery of VHE gamma-ray emission from 1 ES1218+30.4* . Astrophys.J.L. **642**, (2006), L119–L122. MPP-2006-45, `astro-ph/0603529`.

E. Lorenz and D. Ferenc. *A new readout of large area smart Photomultipliers by Geiger-mode APDs* . Nucl.Instrum.Meth.A **572**, (2007), 434–436. MPP-2006-44.

Kyle Cranmer and Tilman Plehn. *Maximum Significance at the LHC and Higgs Decays to Muons* . Eur.Phys.J.C **51**, (2007), 415–420. MPP-2006-43, `hep-ph/0605268`.

Alexandre Alves, Oscar Eboli, and Tilman Plehn. *It's a Gluino!* . Phys.Rev.D **74**, (2006), 095010. MPP-2006-42, `hep-ph/0605067`.

Kathrin A. Hochmuth, Franz v. Feilitzsch, Brian D. Fields, Teresa Marrodan Undagoitia, Lothar Oberauer, Walter Potzel, Georg G. Raffelt, and Michael Wurm. *Probing the Earth's interior with a large-volume liquid scintillator detector* . Astropart.Phys. **27**, (2007), 21–29. MPP-2006-41, `hep-ph/0509136`.

Andre H. Hoang. *Top Threshold Physics* . PoSTOP **2006**, (2006), 32. MPP-2006-40, `hep-ph/0604185`.

E. Babichev, V. Mukhanov, and A. Vikman. *Escaping from the black hole?* . JHEP **09**, (2006), 061. LMU-ASC 27/06, MPP-2006-39, `hep-th/0604075`.

Ralph Blumenhagen and Erik Plauschinn. *Intersecting D-branes on Shift Z2 x Z2 Orientifolds* . JHEP **0608**, (2006), 031. LMU-ASC 24/06, MPP-2006-38, `hep-th/0604033`.

Johanna Erdmenger, Jeong-Hyuck Park, and Corneliu Sochichiu. *Matrix models for D-particle dynamics and the string/black hole transition* . Class.Quant.Grav. **23**, (2006), 6873–6898. MPP-2006-37, `hep-th/0603243`.

C. Farrell and A. H. Hoang. *Next-to-leading-logarithmic QCD Corrections to the Cross Section sigma(e+e- to t bar t H) at 500 GeV* . Phys.Rev.D **74**, (2006), 014008. MPP-2006-36, `hep-ph/0604166`.

J. Silk and L. Stodolsky. *Bursts from the very early universe* . Phys.Lett.B **639**, (2006), 14. MPP-2006-35, `astro-ph/0603526`.

S. Chekanov et al. (ZEUS). *Measurement of high-Q**2 deep inelastic scattering cross sections with a longitudinally polarised positron beam at HERA* . Nucl.Phys.B **637**, (2006), 210–222. DESY-06-015, MPP-2006-34, `hep-ex/0602026`.

A. H. Hoang and C. J. Reisser. *On Electroweak Matching Conditions for Top Pair Production at Threshold* . Phys.Rev.D **74**, (2006), 034002. MPP-2006-33, `hep-ph/0604104`.

J. Albert et al. *Observation of VHE Gamma Radiation from HESS J1834-087/W41 with the MAGIC Telescope* . Astrophys.J. **643**, (2006), L53–L56. MPP-2006-32, `astro-ph/0604197`.

Oleg Andreev. *1/q2 Corrections and Gauge/String Duality* . Phys.Rev.D **74**, (2006), 079903. FTUAM 06-1, MPP-2006-31, `hep-th/0603170`.

Giuseppe Policastro and Dimitrios Tsimpis. *R^4, purified* . Class.Quant.Grav. **23**, (2006), 4753–4780. LMU-ASC 17/06, MPP-2006-30, `hep-th/0603165`.

J. Albert et al. (MAGIC). *Observations of Mkn 421 with the MAGIC Telescope* . Astrophys.J. **663**, (2007), 125–138. MPP-2006-29, `astro-ph/0603478`.

A. Mirizzi, G. G. Raffelt, and P. D. Serpico. *Earth matter effects in supernova neutrinos: Optimal detector locations* . JCAP **009**, (2006), 012. MPP-2006-28, `astro-ph/0604300`.

Daniel Krefl and Dieter Lust. *On supersymmetric Minkowski vacua in IIB orientifolds* . JHEP **0606**, (2006), 023. LMU-ASC 20/06, MPP-2006-27, `hep-th/0603166`.

I. Abt et al. (HERA-B). *MEASUREMENT OF THE UPSILON PRODUCTION CROSS SECTION IN 920 GEV FIXED-TARGET PROTON-NUCLEUS COLLISIONS.* . Phys.Rev.D **638**, (2006), 13–21. DESY 05-253, MPP-2006-26, `hep-ex/0603015`.

Gabriel Lopes Cardoso, Dieter Lust, and Jan Perz. *Entropy Maximization in the Presence of Higher-Curvature Interactions* . JHEP **0605**, (2006), 028. LMU-ASC 15/06, MPP-2006-25, `hep-th/0603211`.

W. Lampl, P. Loch, H. Ma, S. Rajagopalan, S. Laplace, S. Menke, and D. Rousseau. *The Calorimeter Event Data Model in Atlas* MPP-2006-24.

G. Abbiendi et al. (OPAL). *QCD coherence and correlations of particles with restricted momenta in hadronic Z decays* . Phys.Lett.B **638**, (2006), 30–38. CERN-PH-EP/2006-003, MPP-2006-23, `hep-ex/0604003`.

The collaboration (ALEPH , DELPHI , OPAL , The LEP Working Group). *Search for Neutral MSSM Higgs Bosons at LEP* . Eur.Phys.J.C **47**, (2006), 547–587. CERN-PH-EP/2006-001, MPP-2006-22, `hep-ex/0602042`.

N. Tonello. *Study of the VHE gamma-ray emission from the Active Galactic Nucleus 1 ES 1959+650* . Phd thesis, TU München. MPP-2006-21 (2006).

Steve Blanchet and Pasquale Di Bari. *Leptogenesis beyond the limit of hierarchical heavy neutrino masses* . JCAP **0606**, (2006), 023. MPP-2006-20, `hep-ph/0603107`.

Stefan Kluth. *Tests of Quantum Chromo Dynamics at e^+e^- Colliders* . Rep.Prog.Phys. **69**, (2006), 1771–1846. MPP-2006-19, `hep-ex/0603011`.

Florian Gmeiner and Maren Stein. *Statistics of SU(5) D-Brane Models on a Type II Orientifold* . Phys.Rev.D **73**, (2006), 126008. LMU-ASC 10/06, MPP-2006-18, `hep-th/0603019`.

Ralph Blumenhagen, Sebastian Moster, and Timo Weigand. *Heterotic GUT and Standard Model Vacua from simply connected Calabi-Yau Manifolds* . Nucl.Phys.B **751**, (2006), 186–221. MPP-2006-16, `hep-th/0603015`.

Steen Hannestad, Huitzu Tu, and Yvonne Y. Y. Wong. *Measuring neutrino masses and dark energy with weak lensing* . JCAP **0606**, (2006), 025. MPP-2006-15, `astro-ph/0603019`.

S. Heinemeyer, W. Hollik, D. Stockinger, A. M. Weber, and G. Weiglein. *Precise Prediction for M_W in the MSSM* . JHEP **0608**, (2006), 052–095. DCPT/06/44, IPPP/06/22, MPP-2006-14, `hep-ph/0604147`.

J. Albert, E. Aliu, H. Anderhub, P. Antoranz, A. Armada, M. Asensio, C. Baixeras, J. A. Barrio, M. Bartelt, H. Bartko, D. Bastieri, R. Bavikadi, W. Bednarek, K. Berger, C. Bigongiari, A. Biland, E. Bisesi, R. K. Bock, T. Bretz, I. Britvitch, M. Camara, A. Chilingarian, S. Ciprini, J. A. Coarasa, S. Commichau, J. L. Contreras, J. Cortina, V. Curtef, V. Danielyan, F. Dazzi, A. De Angelis, R. de los Reyes, B. De Lotto, E. Domingo-Santamaria, D. Dorner, M. Doro, M. Errando, M. Fagiolini, D. Ferenc, E. Fernandez, R. Firpo, J. Flix, M. V. Fonseca, L. Font, N. Galante, M. Garczarczyk, M. Gaug, M. Giller, F. Goebel, D. Hakobyan, M. Hayashida, T. Hengstebeck, D. Hohne, J. Hose, P. Jacon, O. Kalekin, D. Kranich, A. Laille, T. Lenisa, P. Liebing, E. Lindfors, F. Longo, J. Lopez, M. Lopez, and E. Lorenz. *Flux upper limit of gamma-ray emission by GRB050713a from MAGIC Telescope observations* . Astrophys.J. **641**, (2006), L9–L12. MPP-2006-13, `astro-ph/0602231`.

Gabriele Honecker. *Massive U(1)s and heterotic fivebranes on K3* . Nucl.Phys.B **748**, (2006), 126–148. MPP-2006-12, `hep-th/0602101`.

Heinrich Saller. *Relativities and homogeneous spaces I - Finite dimensional relativity representations* - . Int.J.Theor.Phys. **45**, (2006), 2150–2180. MPP-2006-11, `physics/0602081`.

Zuzana Rurikova. *Measurement of Charm Fragmentation in DIS at HERA* . Phd thesis, University Hamburg. MPP-2006-10 (2006).

Jaume Guasch, Wolfgang Hollik, Siannah Penaranda, and Joan Sola. *Single top-quark production by direct supersymmetric flavor-changing neutral-current interactions at the LHC* . Nucl.Phys.B (Proc.Suppl.) **157**, (2006), 152–157. UB-ECM-PF-06/05, MPP-2006-8, `hep-ph/0601218`.

T. Hahn and M. Rauch. *News from FormCalc and LoopTools* . Nucl.Phys.B (Proc.Suppl.) **157**, (2006), 236–240. MPP-2006-7, `hep-ph/0601248`.

A. Juste, Y. Kiyo, F. Petriello, T. Teubner, K. Agashe, P. Batra, U. Baur, C. F. Berger, J. A. R. Cembranos, A. Gehrmann-De Ridder, T. Gehrmann, E. W. N. Glover, S. Godfrey, A. Hoang, M. Perelstein, Z. Sullivan, T. Tait, and S. Zhu. *Report of the 2005 Snowmass Top/QCD Working Group* MPP-2006-6, `hep-ph/0601112`.

Max Niedermaier and Erhard Seiler. *Structure of the space of ground states in systems with non-amenable symmetries* . Commun.Math.Phys. **270**, (2007), 373–443. MPP-2006-5, `math-ph/0601049`.

Manfred Groh. *Test von Driftrohrkammern für das Myonspektrometer des ATLAS-Detektors am Large Hadron Collider* . Diploma thesis, TU München. MPP-2006-4 (2006).

R. Apreda, J. Erdmenger, N. Evans, J. Grosse, and Z. Guralnik. *Instantons on D7 brane probes and AdS/CFT with flavour* . Fortschr.Phys. **54**, (2006), 266–274. MPP-2006-3, `hep-th/0601130`.

A. Denner and S. Dittmaier. *Techniques for one-loop tensor integrals in many-particle processes* . Nucl.Phys.B (Proc.Suppl.) **157**, (2006), 53–57. MPP-2006-2, `hep-ph/0601085`.

J. Balog, F. Niedermayer, and P. Weisz. *Repairing Stevenson's step in the 4d Ising model* . Nucl.Phys.B **741**, (2006), 390–403. MPP-2006-1, `hep-lat/0601016`.

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