

# Publications of the research group Prof. Ulrich Straumann from 1. January 2007 to 30. September 2009

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# 1 Antrittsvorlesung

- *Aufbruch zur Physik an der Teraskala - der internationale Linearbeschleuniger ILC*  
Frank Lehner, Antrittsvorlesung, Universität Zürich, 19. März 2007

# 2 PhD Thesis

- *Search for the Rare Decays  $B^\pm \rightarrow K^\pm \mu^+ \mu^-$  and  $B_d^0 \rightarrow K^* \mu^+ \mu^-$  with the D Experiment*  
Andreas Wenger, PhD Thesis, Universität Zürich, Dezember 2008
- *Production, Characterization and Reflectivity Measurements of Diamond-like Carbon and other Ultracold Neutron Guide Materials*  
Stefan Heule, PhD Thesis, Universität Zürich, Juni 2008
- *The Trigger Tracker and a Monte Carlo Study of the  $B_S \rightarrow J/\psi \eta'$  Decay in the LHCb Experiment*  
Dmytro Volyanskyy, PhD Thesis, Universität Zürich, October 2007
- *Isolated Photon Production in Deep-Inelastic Scattering at HERA*  
Carsten Schmitz, PhD Thesis, Universität Zürich, October 2007

# 3 Bachelor and Master Thesis

- *Noise Investigations for the Tracker Turicensis of the LHCb Experiment*  
Viktor Hangartner, Master Thesis, Universität Zürich, August 2009
- *Setting up an LHCb TT-Detector Test Stand*  
Gabriel Landolt, Bachelor Thesis, August 2009
- *Wireless Short Range Network for the Active Mirror Control of the CTA Experiment*  
Roman Gredig, Bachelor Thesis, August 2009
- *Online Monitoring for the Silicon Tracker of the LHCb Experiment*  
Nicola Chiapolini, Master Thesis, Juli 2009
- *A fast online and triggerless signal reconstruction based on cross-correlation*  
Arno Gadola, Master Thesis, Universität Zürich, Januar 2009
- *Identification of isolated photons at high energies at H1*  
Arno Gadola, Bachelor Thesis, Universität Zürich, März 2008
- *LHCb TT Module Properties*  
Viktor Hangartner, Bachelor Thesis, Universität Zürich, März 2007
- *The LHCb TT production database and an overview of quality characteristics of the detector modules*  
Nicola Chiapolini, Bachelor Thesis, Universität Zürich, März 2007
- *Thermal and Mechanical Characterization of the TT Detector for the LHCb Experiment*  
Angela Büchler, Master Thesis, Universität Zürich, März 2007
- *Contributions to noise in the data readout for the LHCb Trigger Tracker*  
Ueli Bieler, Diplomarbeit, ETH Zürich, März 2007
- *Experimentelle Charakterisierung des Einflusses der Blendenwärmung auf das Messresultat von PM06 Absolutradiometern*  
Markus Suter, Bachelorarbeit, Davos, Februar 2007

## 4 Conference contributions and invited talks

### 4.1 on HERA results

- *Prompt Photon Production in Deep Inelastic Scattering and Photoproduction at HERA*  
Krzysztof Nowak, The 2009 Europhysics Conference on High Energy Physics 16-22 July 2009 Krakow, Poland
- *Photon structure and photoproduction at HERA*  
Katharina Müller, Photon09, Hamburg, 11.-15. May 2009
- *A measurement of prompt photoproduction at the H1 detector*  
Krzysztof Nowak, 406. WE-HERAEUS-SEMINAR, Physics of the Terascale, 27-30 April 2008, Bad Honnef
- *Prompt Photon Production in Photoproduction at HERA*  
K. Nowak, XVI International Workshop on Deep-Inelastic Scattering and Related Subjects, University College London, April 7-11, 2008
- *New Results from the H1 Collaboration*  
A. Schoening, Plenary Talk at the 16th International Workshop on Deep Inelastic Scattering, University College, London, April 7-11, 2008, Proceedings to be published, arXiv:0809.1050 [hep-ex]
- *General analysis of HERA II data*  
Andre Schöning for the H1 collaboration, published in J.Phys.Conf.Ser.110:072038,2008, 3pp.
- *Isolated Photons at HERA*  
U. Straumann, Europhysics Conference on High Energy Physics, Manchester, England, 19-25 July 2007, Proceedings published in J. Phys. Conf. Ser. **110**, 022048 (2008)
- *Prompt Photons in photoproduction at HERA*  
Krzysztof Nowak, Spring conference of the German Physical Society, 3-7. March 2008, Freiburg
- *Isolated Photons in DIS at HERA (H1)*  
K. Müller, XV International Workshop on Deep-Inelastic Scattering and related Subjects, 16.-10.4.07 Munich, 2007, Proceedings published in "Munich 2007, Deep-inelastic scattering", vol. 2 941-944 doi:10.3360/dis.2007.175
- *Hadronic final states and spectroscopy in ep collisions at HERA*  
Carsten Schmitz, 42nd Rencontres de Moriond on QCD and High Energy Hadronic Interactions, March 17-24 2007, La Thuile, Aosta Valley, Italy. preprint arXiv:0705.4625 [hep-ex]
- *Prompt Photons in Photoproduction*  
Krzysztof Nowak, Spring conference of the German Physical Society, 7. March 2007
- *Prompt Photons in Photoproduction*  
Krzysztof Nowak, Annual meeting of the Swiss Physical Society, 21. February 2007

### 4.2 on B physics and LHCb data analysis

- *You are so beautiful: Rare b decays at LHCb*  
Michel De Cian and Angela Büchler, Joint Annual Meeting OePG/SPS, Innsbruck, 2.-4. September 2009
- *Alignment of the LHCb Silicon Tracker using LHC beam injection data*  
Christophe Salzmann, Joint Annual meeting OPG/SPS, Innsbruck, 2.-4. September 2009

- *LHCb silicon detector alignment with first LHC beam induced tracks*  
Christophe Salzmann, 3rd LHC Detector Alignment Workshop, CERN, 15-16 June 2009
- *Probing low- $x$  with Drell-Yan events at LHCb*  
J. Anderson, XVII International Workshop on Deep-Inelastic Scattering and Related Subjects, Madrid, Spain, 26 Apr - 30 Apr 2009.
- *Proton-proton luminosity, standard candles and PDFs at the LHC*  
J. Anderson, M. Boonekamp, H. Burkhardt, M. Dittmar, V. Halyo and T. Petersen, Proceedings of the HERA-LHC workshop, DESY-PROC-2009-002, January 2009.
- *Electroweak physics at LHCb*  
Jonathan Anderson, Seminar at the School of Physics, University College Dublin, November 18, 2008
- *$\gamma$  determination from tree decays ( $B \rightarrow DK$ ) with LHCb*  
Jeroen van Tilburg, Lake Louise Winter Institute 2007, 19-24 February 2007, Alberta, Canada. Proceedings published in "Lake Louise 2007, Fundamental interactions."
- *Selection of the decay  $B_s^0 \rightarrow J/\psi \eta'$  at LHCb and its sensitivity to  $B_s^0$  mixing parameters*  
Dima Volyansky, Annual meeting of the Swiss Physical Society, 21. February 2007, Zürich
- *Observation of the decay  $B_s^0 \rightarrow \psi(2S)\phi$*   
Christophe Salzmann, Annual meeting of the Swiss Physical Society, 21. February 2007, Zürich

### 4.3 on experiments with ultracold neutrons

- *Direct Experimental Limit on Neutron  $\rightarrow$  Mirror Neutron Oscillations*  
A. Knecht, International Workshop on Particle Physics with Slow Neutrons, 31. May 2008, Grenoble. Talk and Poster
- *A Direct Experimental Limit on Neutron  $\rightarrow$  Mirror Neutron Oscillations*  
Andreas Knecht for the nEDM collaboration, Annual meeting of the Swiss Physical Society, Geneva, 26. March 2008
- *A direct experimental limit on neutron  $\rightarrow$  mirror neutron oscillations*  
A. Knecht, International Workshop on Search for Baryon and Lepton Number Violations, 20-22 September 2007, Berkeley, USA
- *Amorphous carbon coating for ultracold neutron experiments*  
Stefan Heule, E-MRS Spring meeting, Symposium P, 1. June 2007, Strasbourg, France
- *Storage and guide materials for PSI ultracold neutron source*  
S. Heule, Talk presented at the annual meeting of the Swiss Physical Society, 21. February 2007, Zürich
- *Pulsed laser deposition of diamond-like carbon for ultracold neutron guides*  
S. Heule, Poster presented at the annual meeting of the Swiss Physical Society, 20-21. February 2007, Zürich
- *Systematic Effects in the Neutron EDM Experiment*  
Andreas Knecht, nEDM collaboration, Annual meeting of the Swiss Physical Society, 21. February 2007, Zürich

## 4.4 on experimental techniques

- *Two design studies in the framework of the Cherenkov Telescope Array (CTA)*  
Arno Gadola, Joint annual meeting of the SPS, PG, GAA, 03. September 2009
- *Solid Light Concentrators for Cherenkov Astronomy*  
Isabel Braun *et al.*, Proceedings of the 31st International Cosmic Ray Conference, Lodz, 7.-15. July 2009
- *Detector Research and Development in Switzerland*  
U. Straumann, Presentation for the R-ECFA visit in Switzerland, EPF Lausanne, 6. March 2009
- *The LHCb Silicon Tracker: lessons learned (so far)*  
A. Vollhardt, Topical Workshop on Electronics for Particle Physics (TWEPP), September 2008, Naxos (Greece)
- *A high intensity linear collider for a Tau-charm factory*  
A. Schöning, 10th International Workshop on Tau Lepton Physics, Satellite Meeting on the Need for a Super-tau-charm Factory, September 22-25, 2008, Novosibirsk, Russia
- *The LHCb silicon tracker*  
Ralph Bernhard, Prepared for 8th International Conference on Large Scale Applications and Radiation Hardness of Semiconductor Detectors (RD 07), Florence, Italy, 27-29 Jun 2007
- *Construction of the LHCb Trigger Tracker station*  
Angela Büchler, Annual meeting of the Swiss Physical Society, 21. February 2007.
- *Status and prospects of the LHCb Experiment*  
U. Straumann, Kolloquium, PSI, Villigen AG, 4. Januar 2007
- *Design and Production of the LHCb Silicon Tracker*  
O. Steinkamp, 11th Vienna Conference in Instrumentation (VCI 2007) Vienna, Austria, February 19-24, 2007, proceedings to appear in Nucl Instr and Meth A

## 4.5 on Science Policy

- *PhD student point of view*  
Angela Büchler, Presentation for the R-ECFA visit in Switzerland, EPF Lausanne, 6 March 2009
- *CHIPP and Swiss Particle Physics*  
U. Straumann, Presentation for the R-ECFA visit in Switzerland, EPF Lausanne, 6. March 2009

# 5 Articles in refereed journals

## 5.1 Articles with the H1 collaboration

- **“Measurement of the Charm and Beauty Structure Functions using the H1 Vertex Detector at HERA”**  
F. D. Aaron *et al.* [H1 Collaboration],  
arXiv:0907.2643 [hep-ex].
- **“Observation of the Hadronic Final State Charge Asymmetry in High  $Q^2$  Deep-Inelastic Scattering at HERA”**  
F. D. Aaron *et al.* [H1 Collaboration],  
arXiv:0907.2666 [hep-ex].

- **“Search for Single Top Quark Production at HERA”**  
F. D. Aaron *et al.* [H1 Collaboration],  
arXiv:0904.3876 [hep-ex].
- **“Search for Excited Quarks in ep Collisions at HERA”**  
F. D. Aaron *et al.* [H1 Collaboration],  
arXiv:0904.3392 [hep-ex].
- **“Jet Production in ep Collisions at High  $Q^2$  and Determination of  $\alpha_s$ ”**  
F. D. Aaron *et al.* [H1 Collaboration]  
arXiv:0904.3870 [hep-ex].
- **“A Precision Measurement of the Inclusive ep Scattering Cross Section at HERA”**  
F. D. Aaron *et al.* [H1 Collaboration],  
arXiv:0904.3513 [hep-ex].
- **“A General Search for New Phenomena at HERA,”**  
F. D. Aaron *et al.* [H1 Collaboration],  
Phys. Lett. B **674** (2009) 257 [arXiv:0901.0507 [hep-ex]]
- **“Events with Isolated Leptons and Missing Transverse Momentum and Measurement of  $W$  Production at HERA,”**  
F. D. Aaron *et al.* [H1 Collaboration], arXiv:0901.0488 [hep-ex].
- **“Inclusive Photoproduction of  $\rho^0$ ,  $K^{*0}$  and  $\phi$  Mesons at HERA,”**  
F. D. Aaron *et al.* [H1 Collaboration],  
Phys. Lett. B **673** (2009) 119 [arXiv:0901.0477 [hep-ex]].
- **“Strangeness Production at low  $Q^2$  in Deep-Inelastic ep Scattering at HERA,”**  
F. D. Aaron *et al.* [H1 Collaboration],  
Eur. Phys. J. C **61** (2009) 185 [arXiv:0810.4036 [hep-ex]]
- **“Measurement of Diffractive Scattering of Photons with Large Momentum Transfer at HERA,”**  
F. D. Aaron *et al.* [H1 Collaboration],  
Phys. Lett. B **672** (2009) 219 [arXiv:0810.3096 [hep-ex]].
- **“Study of Charm Fragmentation into  $D^{*\pm}$  Mesons in Deep-Inelastic Scattering at HERA,”**  
F. D. Aaron *et al.* [H1 Collaboration],  
Eur. Phys. J. C **59** (2009) 589 [arXiv:0808.1003 [hep-ex]]
- **“Multi-Lepton Production at High Transverse Momenta in ep Collisions at HERA”**  
F. D. Aaron *et al.* [H1 Collaboration],  
Phys. Lett. B **668** (2008) 268 [arXiv:0806.3987 [hep-ex]].
- **“Measurement of the Proton Structure Function  $F_L$  at Low  $x$ ”**  
F. D. Aaron *et al.* [H1 Collaboration],  
Phys. Lett. B **665** (2008) 139 [arXiv:0805.2809 [hep-ex]].
- **“Search for Excited Electrons in ep Collisions at HERA,”**  
F. D. Aaron *et al.* [H1 Collaboration],  
Phys. Lett. B **666** (2008) 131 [arXiv:0805.4530 [hep-ex]].
- **“A Search for Excited Neutrinos in e-p Collisions at HERA”**  
F. D. Aaron *et al.* [H1 Collaboration]  
Phys. Lett. B **663**, 382 (2008) [arXiv:0802.1858 [hep-ex]]

- **“Three- and Four-jet Production at Low x at HERA”**  
F. D. Aaron *et al.* [H1 Collaboration]  
Eur. Phys. J. C **54**, 389-409 (2008) arXiv:0711.2606 [hep-ex]
- **“Measurement of Isolated Photon Production in Deep-Inelastic Scattering at HERA”**  
F. D. Aaron *et al.* [H1 Collaboration]  
Eur. Phys. J. C **54**, 371-387 (2008) arXiv:0711.4578 [hep-ex]
- **“Measurement of Deeply Virtual Compton Scattering and its t-dependence at HERA”**  
F. D. Aaron *et al.* [H1 Collaboration]  
Phys. Lett. B **659**, 796 (2008) [arXiv:0709.4114 [hep-ex]]
- **“Dijet Cross Sections and Parton Densities in Diffractive DIS at HERA”**  
A. Aktas *et al.* [H1 Collaboration]  
JHEP **0710**, 042 (2007) [arXiv:0708.3217 [hep-ex]]
- **“Charged Particle Production in High Q<sup>2</sup> Deep-Inelastic Scattering at HERA”**  
F. D. Aaron *et al.* [H1 Collaboration]  
Phys. Lett. B **654**, 148 (2007) [arXiv:0706.2456 [hep-ex]]
- **“Measurement of Inclusive Jet Production in Deep-Inelastic Scattering at High Q<sup>2</sup> and Determination of the Strong Coupling”**  
A. Aktas *et al.* [H1 Collaboration]  
Phys. Lett. B **653**, 134 (2007) [arXiv:0706.3722 [hep-ex]]
- **“Search for baryonic resonances decaying to Xi pi in deep-inelastic scattering at HERA”**  
A. Aktas *et al.* [H1 Collaboration]  
Eur. Phys. J. C **52**, 507 (2007) [arXiv:0704.3594 [hep-ex]]
- **“Search for lepton flavour violation in e p collisions at HERA”**  
A. Aktas *et al.* [H1 Collaboration]  
Eur. Phys. J. C **52**, 833 (2007) [arXiv:hep-ex/0703004]
- **“Tests of QCD factorisation in the diffractive production of dijets in deep-inelastic scattering and photoproduction at HERA”**  
A. Aktas *et al.* [H1 Collaboration]  
Eur. Phys. J. C **51**, 549 (2007) [arXiv:hep-ex/0703022]

## 5.2 Articles with the D0 collaboration

*Ralf Bernhard (member of our group until 2006), Frank Lehner (until 2007), and Andreas Wenger (until 2008) were also members of the D0 collaboration and are authors of 93 D0 collaboration papers published since 1. January 2007. Here we list only two papers, which are directly based on the thesis results of our group members*

- **“Relative rates of B meson decays into psi(2S) and J/psi mesons“**  
V. M. Abazov *et al.* [D0 Collaboration]  
FERMILAB-PUB-08-134-E  
Phys. Rev. **D79**,111102 (2009) [arXiv:0805.2576 [hep-ex]]  
Based on the Master Thesis of Christophe Salzmann
- **“Search for  $B_s \rightarrow \mu^+ \mu^-$  at D0”**  
V. M. Abazov *et al.* [D0 Collaboration]  
Phys. Rev. D **76**, 092001 (2007) [arXiv:0707.3997 [hep-ex]]  
Based on the PhD Thesis of R. Bernhard

### 5.3 Articles on ultracold neutrons

- **“Neutron velocity distribution from a superthermal solid 2H2 ultracold neutron source”**  
I. Altarev et al  
Eur. Phys. J. A 37, 922614 (2008).
- **“Storage of ultracold neutrons in high resistivity, non-magnetic materials with high Fermi potential”**  
K. Bodek et al.  
Nuclear Instruments and Methods in Physics Research A 597, 222226226 (2008).
- **“Direct Experimental Verification of Neutron Acceleration by the Material Optical Potential of Solid 2H2”**  
I. Altarev et al  
Phys. Rev. Lett. **100**, 014801 (2008).
- **“Surface characterization of diamond-like carbon for ultracold neutron storage”**.  
F. Atchison et al  
Nucl. Instr. Meth. A **587**, 82-88 (2008).
- **“Cold Neutron Energy Dependent Production of Ultracold Neutrons in Solid Deuterium.”**  
F. Atchison et al:  
Phys. Rev. Lett. **99**, 262502 (2007).
- **“Direct Experimental Limit on Neutron  $\rightarrow$  Mirror-Neutron Oscillations.”**  
G. Ban et al:  
Phys. Rev. Lett. **99**, 161603 (2007).
- **“Diamond-like carbon coated ultracold neutron guides.”**  
S. Heule et al  
Applied Surface Science **253**, 8245 - 8249 (2007).
- **“Measurement of the Fermi potential of diamond-like carbon and other materials.”**  
F. Atchison et al  
Nucl. Instr. Meth. B **260**, 647-656 (2007).
- **“Structural characterization of diamond-like carbon coatings for ultracold neutron applications”**  
F. Atchison et al  
Diamond and Related Materials **16**, 334 (2007).
- **“Loss and spinflip probabilities for ultracold neutrons interacting with diamondlike carbon and beryllium surfaces”**  
F. Atchison *et al.*  
Phys. Rev. C **76**, 044001 (2007)

### 5.4 Articles on experimental techniques

- **“The Lhcb Detector At The LHC”**  
A. A. Alves *et al.* [LHCb Collaboration]  
JINST **3**, S08005 (2008)
- **“A vertex trigger based on cylindrical multiwire proportional chambers”**  
J. Becker *et al.*  
Nucl. Instrum. Meth. A **586**, 190 (2008) [arXiv:physics/0701002]

- **“Design and production of detector modules for the LHCb Silicon Tracker”**  
O.Steinkamp  
Nucl. Instr. Meth. **A579**, 736-741 (2007)
- **“The Beam and detector for the NA48 neutral kaon CP violations experiment at CERN”**  
V. Fanti *et al.* [NA48 Collaboration]  
Nucl. Instrum. Meth. A **574**, 433 (2007)
- **“The outer tracker detector of the HERA-B experiment. III: Operation and performance”**  
H. Albrecht *et al.* [HERA-B Outer Tracker Group]  
Nucl. Instrum. Meth. A **576**, 312 (2007) [arXiv:physics/0701122]

## 6 Collaboration notes for LHCb

- **“Production, Commissioning and First Data of the LHCb Silicon Tracker”**  
Helge Voss et al.  
CERN-LHCb-2008-062
- **“TT detector description and implementation of the survey measurements”**  
Christophe Salzmann and Jeroen van Tilburg  
CERN-LHCB-2008-061 (2008)
- **“The LHCb Silicon Tracker: lessons learned (so far)”**  
Achim Vollhardt  
CERN-LHCb-2008-049
- **“Design and development of the control board for the LHCb silicon tracker”**  
D. Esperante Pereira and A. Vollhardt  
CERN-LHCB-2007-153(2008)
- **“Updated channel numbering and readout partitioning for the Silicon Tracker”**  
M. Needham and O. Steinkamp  
CERN-LHCB-2007-137(2007)
- **“The LHCb silicon tracker”**  
R. P. Bernhard *et al.*  
CERN-LHCB-2007-126(2007)  
*Prepared for 8th International Conference on Large Scale Applications and Radiation Hardness of Semiconductor Detectors (RD 07), Florence, Italy, 27-29 Jun 2007*
- **“Radiation monitoring system for the LHCb inner tracker”**  
M. Agari *et al.*  
CERN-LHCB-2007-062(2007)
- **“The trajectory model for track fitting and alignment”**  
E. Bos, M. Merk, G. Raven, E. Rodrigues and J. van Tilburg  
CERN-LHCB-2007-008(2007)
- **“Selection of the  $B_s^0 \rightarrow J/\psi(\mu^+\mu^-)\eta'(\rho_0\gamma)$  decay at LHCb and its sensitivity to the  $B_s^0$  mixing phase  $\phi(s)$ ”**  
D. Volyansky and J. van Tilburg  
CERN-LHCB-2007-027(2007)
- **“Performance of the track matching”**  
M. Needham and J. Van Tilburg  
CERN-LHCb-2007-020(2007)

## 7 Publications in other fields

- **“New Precise Measurement of the RMPion Weak Form Factors in the  $\pi^+ \rightarrow e^+\nu\gamma$  Decay”**  
M. Bychkov *et al.*  
Phys. Rev. Lett. 103:051802,2009 [arXiv:0804.1815 [hep-ex]]
- **“Myonen und Pionen in Teilchenphysik und Anwendungen 30 Jahre experimentelle Forschung an der Schweizer Mesonenfabrik in Villigen”**  
Peter Truöl  
Neujahrsblatt der Naturforschenden Gesellschaft in Zürich auf das Jahr 2008, 210. Stück, Ausgegeben am 31. Dezember 2007; ISSN 0379-1327
- **“Flavour physics of leptons and dipole moments”**  
M. Raidal *et al.*  
arXiv:0801.1826 [hep-ph]
- **“Physics at a future Neutrino Factory and super-beam facility”**  
A. Bandyopadhyay *et al.* [ISS Physics Working Group]  
arXiv:0710.4947 [hep-ph]
- **“Measurement of  $D^0, D^+, D_s^+$  and  $D^{*+}$  Production in Fixed Target 920 GeV Proton-Nucleus Collisions”**  
I. Abt *et al.* [HERA-B Collaboration]  
Eur. Phys. J. C **52**, 531 (2007) [arXiv:0708.1443 [hep-ex]]
- **“Luminosity determination at HERA-B”**  
I. Abt *et al.* [HERA-B Collaboration]  
Nucl. Instrum. Meth. A **582**, 401 (2007) [arXiv:0706.0131 [physics.data-an]]
- **“Bottom production cross section from double muonic decays of b-hadrons in 920-GeV proton nucleus collision”**  
I. Abt *et al.* [HERA-B Collaboration]  
Phys. Lett. B **650**, 103 (2007) [arXiv:hep-ex/0612024]
- **“A measurement of the  $\psi' \rightarrow J/\psi$  production ratio in 920-GeV proton nucleus interactions”**  
I. Abt *et al.* [HERA-B Collaboration]  
Eur. Phys. J. C **49**, 545 (2007) [arXiv:hep-ex/0607046]
- **“ $K0^*$  and  $\phi$  meson production in proton nucleus interactions at  $\sqrt{s} = 41.6$  GeV”**  
I. Abt *et al.* [HERA-B Collaboration]  
Eur. Phys. J. C **50**, 315 (2007) [arXiv:hep-ex/0606049]