

## Lawrence Wiencke Publications (Last Updated Sept 20<sup>th</sup> 2011)

### Refereed Journals

1. “The Lateral Trigger Probability function for UHE Cosmic Rays Showers detected by the Pierre Auger Observatory”, J.Abraham et al. (The Pierre Auger Collaboration), *Astroparticle Physics*, in press (2011).
2. “Search for first harmonic modulation in the right ascension distribution of cosmic rays detected at the Pierre Auger Observatory”, J.Abraham et al. (The Pierre Auger Collaboration), *Astropart. Phys.* 34, 627 (2011).
3. “Anisotropy and chemical composition of ultra-high energy cosmic rays using arrival directions measured by the Pierre Auger Observatory”, J.Abraham et al. (The Pierre Auger Collaboration), , JCAP06 022, (2011).
4. “Advanced functionality for radio analysis in the Offline software framework of the Pierre Auger Observatory”, J.Abraham et al. (The Pierre Auger Collaboration), *NIM A*635, 92-102 (2011).
5. “Search for First Harmonic Modulation in the Right Ascension Distribution of Cosmic Rays Detected at the Pierre Auger Observatory”, J.Abraham et al. (The Pierre Auger Collaboration), *Astropart. Phys* 43, 627 (2011).
6. “The Pierre Auger Observatory Scaler Mode for the Study of the Modulation of Galactic Cosmic Rays due to Solar Activity”, J.Abraham et al. (The Pierre Auger Collaboration), *JINST* 6, P01003 (2011).
7. “The exposure of the hybrid detector of the Pierre Auger Observatory”, J.Abraham et al. (The Pierre Auger Collaboration), *Astroparticle Physics* 34 368-381 (2011).
8. “The Review of Particle Physics”, K. Nakamura *et al.* (Particle Data Group), *Phys. G* 37, 075021 (2010).
9. “Update on the correlation of the highest energy cosmic rays with nearby extragalactic matter”, J.Abraham et al. (The Pierre Auger Collaboration), *Astroparticle Physics* 34, 314 (2010).
10. , “The fluorescence detector of the Pierre Auger Observatory”, J.Abraham et al. (The Pierre Auger Collaboration) *NIM. A*620, 227 (2010).
11. , “Measurement of the energy spectrum of cosmic rays above 10(18) eV using the Pierre Auger Observatory”, J.Abraham et al. (The Pierre Auger Collaboration)*Phys. Lett. B*685, 239 (2010).
12. “A study of the effect of molecular and aerosol conditions in the atmosphere on air fluorescence measurements at the Pierre Auger Observatory”, J.Abraham et al. (The Pierre Auger Collaboration), *Astroparticle Physics* 33, 108 (2010).
13. “Measurement of the Depth of Maximum of Extensive Air Showers above 10<sup>18</sup> eV”, J.Abraham et al. (The Pierre Auger Collaboration), *Phys. Rev. Lett.* 104, 091101 (2010).
14. “Atmospheric effects on extensive air showers observed with the surface detector of the Pierre Auger observatory”, J Abraham et al., (The Pierre Auger Collaboration), *Astroparticle Physics* 33, 65 (2010).

15. "Trigger and aperture of the surface detector array of the Pierre Auger Observatory", J Abraham et al., (The Pierre Auger Collaboration), Nucl. Instr. And Meth. A613, 29 (2010).
16. "Atmospheric effects on extensive air showers observed with the Surface Detector of the Pierre Auger Observatory", J. Abraham et al. (The Pierre Auger Collaboration) *Astroparticle Physics* 32 (2009), 89.
17. "Limit on the diffuse flux of ultrahigh energy tau neutrinos with the surface detector of the Pierre Auger Observatory", J. Abraham et al. (The Pierre Auger Collaboration) *Physical Review D* 79 (2009), 102001.
18. "Upper limit on the cosmic-ray photon fraction at EeV energies from the Pierre Auger Observatory", J. Abraham et al. (The Pierre Auger Collaboration), *Astroparticle Physics* 31 (2009), 399.
19. "Measurement of the Flux of Ultra High Energy Cosmic Rays by the Stereo Technique", R. Abassi et al (The High Resolution Fly's Eye Collaboration), *Astropart.Phys.*32, 60 (2009).
20. "Observation of the Suppression of the Flux of Cosmic Rays above  $4 \times 10^{19}$  eV" J Abraham et al., Pierre Auger Collaboration *Physical Review Letters* 101 (2008), 061101.
21. "Upper Limit on the Diffuse Flux of Ultrahigh Energy Tau Neutrinos from the Pierre Auger Observatory" J. Abraham et al., Pierre Auger Collaboration, *Physical Review Letters* **100** (2008), 211101.
22. "Upper Limit on the Cosmic-Ray Photon Flux Above  $10^{19}$  eV Using the Surface Detector of the Pierre Auger Observatory" J. Abraham et al., Pierre Auger Collaboration, *Astroparticle Physics* 29 (2008), 243.
23. "Correlation of the highest-energy cosmic rays with the positions of nearby active galactic nuclei" J. Abraham et al., Pierre Auger Collaboration, *Astroparticle Physics* 29 (2008), 188.
24. "Search for Correlations between HiRes Stereo Events and Active Galactic Nuclei", R. R.U. Abbasi et al (High Resolution Fly's Eye Collaboration) *Astro Particle Physics* 30 (2008), 175.
25. "First Observation of the Greisen-Zatsepin-Kuzmin Suppression", R.U. Abbasi, et al (The High Resolution Fly's Eye Collaboration) *Physical Review Letters* 100 101101 (2008)
26. "Correlation of the Highest-Energy Cosmic Rays with Nearby Extragalactic Objects," J. Abraham et al. (The Pierre Auger Collaboration) (9 November 2007) *Science* 318 (5852), 938.

27. "Anisotropy studies around the galactic centre at EeV energies with the Auger Observatory," J. Abraham et al. [Pierre Auger Collaboration], *Astroparticle Physics* 27 (2007) 244.
28. "An upper limit to the photon fraction in cosmic rays above  $10^{19}$  eV from the Pierre Auger Observatory," J. Abraham et al. [Pierre Auger Collaboration], *Astroparticle Physics* 27 (2007), 155.
29. "Techniques for measuring atmospheric aerosols at the high resolution fly's eye experiment" R. Abbasi, et al. *Astroparticle Physics* 25 p74 (2006).
30. "A measurement of time-averaged aerosol optical depth using air-showers observed in stereo by HiRes" R. Abbasi, et al. *Astroparticle Physics* 25 p93 (2006).
31. "A Likelihood Method for Measuring the Ultrahigh Energy Cosmic Ray Composition", R. Abassi et al., *Astroparticle Physics*, 26 p29 (2006).
32. "Search for Cross-Correlations of Ultra-High-Energy cosmic Rays With BL Lacertae Objects", The HiRes Collaboration, *Astrophys. J.* 636 p680 (2006).
33. "Anisotropy Studies around the Galactic Center" J. Abraham et al. (The Pierre Auger Collaboration), (2006).
34. "An upper limit to the photon fraction in cosmic rays above  $10^{19}$  eV from the Pierre Auger Observatory", J. Abraham et al. (The Pierre Auger Collaboration), *Astroparticle Physics J.* (2006).
35. "A Study of the Composition of Ultrahigh Energy Cosmic Rays using the High Resolution Fly's Eye." *Astrophys. J.* **622**, 910 (2005).
36. "Monocular Measurement of the spectrum of UHE cosmic rays by the FADC detector of the HiRes Experiment", with R. Abassi et al., *Astropart. Phys* **23** 157 (2005).
37. "Search for Point Sources of Ultra-High Energy Cosmic Rays above  $4.0 \times 10^{19}$  eV using a Maximum Likelihood Ratio Test." with R. U. Abassi et al., *Astrophys. J* **623** 164 (2005).
38. "Study of Small-scale Anisotropy of Ultrahigh Energy Cosmic Rays Observed in Stereo" by HiRes, R. Abassi et al, *Astrophys. J.* **610**:L73,(2004).
39. "A Search for Arrival Direction Clustering in the HiRes-I Monocular Data Above  $10^{19.5}$  eV", R. Abassi et al, *Astropart. Phys.* **22**:139-149,(2004).
40. "Measurement of the Flux of Ultrahigh Energy Cosmic Rays from Monocular Observations by the High Resolution Fly's Eye Experiment", R. Abassi et al, *Phys.Rev.Lett.* **92**:151101, (2004).

41. "Search for Global Dipole Enhancements in the HiRes-I Monocular Data above  $10^{18.5}$  eV." with R. Abassi et al, *Astropart.Phys.***21**:111, (2004).
42. "Using Fractal Dimensionality in the Search for Source Models of Ultrahigh-energy Cosmic Rays", with R. Abassi et al, *Astropart.Phys.***21**:95, (2004).
43. "Geometry and Optics Calibration for Air Fluorescence Detectors Using Star Light", T. Abu-Zayyad, et al., *Astroparticle Physics* 18,237 (2002).
44. "The energy spectrum and the high-resolution Fly's Eye" L. R. Wiencke on behalf of the HiRes Collaboration, *J. Phys. G: Nucl. Part. Phys.* 27, 1611 (2001).
45. "Measurements of the Cosmic Ray Energy Spectrum and Composition from  $10^{17}$  eV and  $10^{18}$  eV using a Hybrid Fluorescence Technique" with T. Abu-Zayyad et al., *Astrrophys. J.* **557**, 686 (2001).
46. "A Measurement of the Average Longitudinal Development Profile of Cosmic Ray Air Showers Between  $10^{17}$  eV and  $10^{18}$  eV", with T. Abu-Zayyad et al. *Astroparticle Phys* 16, 1 (2001).
47. "A fiber-optic based calibration system for the High Resolution Fly's Eye cosmic ray observatory", J.H.V Girard, L.R. Wiencke et al., *Nuclear Instruments and Methods A*460, 278 (2001).
48. "The Prototype High Resolution Fly's Eye Cosmic Ray Detector", with T. Abu-Zayyad, *Nuclear Instruments and Methods A*,150:253 (2000).
49. "Evidence for changing of cosmic ray composition between  $10^{17}$  eV and  $10^{18}$  eV" from multicomponent measurements, with T. Abu-Zayyad, *Phy. Rev. Lett.* 84, 4276 (2000).
50. "Geometrical Reconstruction with the High Resolution Fly's Eye Prototype Cosmic Ray Detector", with C.R. Wilkinson et al., *Astropart. Phys.* 12, 121 (1999).
51. "Radio-controlled Xenon Flashers for Atmospheric Monitoring at the HiRes Cosmic Ray Observatory", L. Wiencke et al., *Nucl. Instr. Meth.* A428, 593, (1999).
52. "Study of  $\Lambda^0$  Polarization in Four Different Exclusive PP Reactions at 27.5-GeV/C", with J. Felix et al., *Phys. Rev. Lett.* 82, 5213 (1999).
53. "A Precise Measurement of the  $D^0$  Mass", with M.H.L.S. Wang et al., *Phys. Rev.* D56, 2544 (1997).
54. "Study of  $\Lambda^0$  Polarization in  $pp \rightarrow p\Lambda^0 K^+ \pi^+ \pi^- \pi^+ \pi^-$  at 27.5 GeV," with J. Felix et al., *Phys. Rev. Lett.* **76**, 22 (1996).

55. "Hyperon Production in 28 GeV/c Proton-Proton Interactions," with E. Gottschalk et al., Phys. Rev. **D53**, 4756 (1996).
56. "The Calibration of the Absolute Sensitivity of Photomultiplier Tubes in the High Resolution Fly's Eye Detector," with D. Bird et al., Nucl. Instr. Meth. **A349**, 592 (1994).
57. Precise Measurement of the Lambda and Anti-Lambda Masses and a Test of CPT "Invariance," with E.P. Hartouni et al., Phys. Rev. Lett. **72**, 1322 (1994).
58. "Pion-Pion Correlations at Low Relative Momentum Produced in p-p Collisions at 27.5 GeV/c", with J. Uribe et al, Phys. Rev. **D49**, 4373 (1994).
59. "High Speed Simultaneous Measurement of Pulse Area and Time-Of-Flight for Photomultiplier Signals," with E.P. Hartouni et al., Nucl. Instr. Meth. **A313**, 161 (1992).
60. "A New Technique for Online and Offline High Speed Computation," E.P. Hartouni et al., IEEE Trans. Nucl. Sci. **36**, 1480 (1989).

Published in conference proceedings

1. Atmospheric "Super Test Beam" for the Pierre Auger Observatory, L. Wiencke for the Pierre Auger Collaboration, Proc. 32<sup>nd</sup> International Cosmic Ray Conference, Beijing (2011)
2. "Implementation of a muon lifetime experiment in an undergraduate laboratory course at the Colorado School of Mines" M. Bowles, J. Powers, L. Wiencke, Proc. 31st International Cosmic Ray Conference, Poland (2009)
3. Calibrating laser test-beams for cosmic-ray observatories" L. Wiencke, F. Arqueros, J. Compton, M. Monasor, D. Pilger, and J. Rosado Proc. 31st International Cosmic Ray Conference, Poland (2009)
- 4.
5. "Observation of Elves with the Fluorescence Detectors of the Pierre Auger Observatory", The Pierre Auger Collaboration, Proc. 32<sup>nd</sup> International Cosmic Ray Conference, Beijing (2011)
6. "Education and public outreach of the Pierre Auger Observatory", The Pierre Auger Collaboration, Proc. 32<sup>nd</sup> International Cosmic Ray Conference, Beijing (2011)
7. "The HEAT telescopes of the Pierre Auger Observatory: status and first data", The Pierre Auger Collaboration, Proc. 32<sup>nd</sup> International Cosmic Ray Conference, Beijing (2011)
8. "New technologies for the Pierre Auger Observatory: research and development in southeastern Colorado", The Pierre Auger Collaboration, Proc. 32<sup>nd</sup> International Cosmic Ray Conference, Beijing (2011)

9. "Autonomous detection and analysis of radio emission from air showers detected at the Pierre Auger Observatory", The Pierre Auger Collaboration, Proc. 32<sup>nd</sup> International Cosmic Ray Conference, Beijing (2011)
10. "Estimation of the proton-air cross section with the Pierre Auger Observatory", The Pierre Auger Collaboration, Proc. 32<sup>nd</sup> International Cosmic Ray Conference, Beijing (2011)
11. "Anisotropies and chemical composition of ultra-high energy cosmic rays using arrival directions measured with the Pierre Auger Observatory", The Pierre Auger Collaboration, Proc. 32<sup>nd</sup> International Cosmic Ray Conference, Beijing (2011)
12. "First harmonic analysis of the right ascension distribution of cosmic rays detected at the Pierre Auger Observatory", The Pierre Auger Collaboration, Proc. 32<sup>nd</sup> International Cosmic Ray Conference, Beijing (2011)
13. "Search for ultra-high energy cosmic ray multiplets in the Pierre Auger Observatory data", The Pierre Auger Collaboration, Proc. 32<sup>nd</sup> International Cosmic Ray Conference, Beijing (2011)
14. "Search for Galactic point sources of EeV neutrons", The Pierre Auger Collaboration, Proc. 32<sup>nd</sup> International Cosmic Ray Conference, Beijing (2011)
15. "Multiple Scattering measurement with laser events", The Pierre Auger Collaboration, Proc. 32<sup>nd</sup> International Cosmic Ray Conference, Beijing (2011)
16. "Remote operation of the Pierre Auger Observatory", The Pierre Auger Collaboration, Proc. 32<sup>nd</sup> International Cosmic Ray Conference, Beijing (2011)
17. "An update on the search for ultra-high energy photons using the Pierre Auger Observatory", The Pierre Auger Collaboration, Proc. 32<sup>nd</sup> International Cosmic Ray Conference, Beijing (2011)
18. "The Pierre Auger Observatory and UHE neutrinos: upper limits to the diffuse flux and from point-like sources", The Pierre Auger Collaboration, Proc. 32<sup>nd</sup> International Cosmic Ray Conference, Beijing (2011)
19. "Low energy radiation measurements with the water Cherenkov detector array of the Pierre Auger Observatory", The Pierre Auger Collaboration, Proc. 32<sup>nd</sup> International Cosmic Ray Conference, Beijing (2011)
20. "Update on the measurement of the CR energy spectrum above  $10^{18}$  eV made using the Pierre Auger Observatory", The Pierre Auger Collaboration, Proc. 32<sup>nd</sup> International Cosmic Ray Conference, Beijing (2011)

21. "Update of the energy calibration of data recorded with the surface detector of the Pierre Auger Observatory", The Pierre Auger Collaboration, Proc. 32<sup>nd</sup> International Cosmic Ray Conference, Beijing (2011)
22. "The cosmic ray spectrum above 4 EeV as measured with inclined showers recorded at the Pierre Auger Observatory", The Pierre Auger Collaboration, Proc. 32<sup>nd</sup> International Cosmic Ray Conference, Beijing (2011)
23. "Inclined showers at the Pierre Auger Observatory: reconstruction, energy calibration and implications for the muon content", The Pierre Auger Collaboration, Proc. 32<sup>nd</sup> International Cosmic Ray Conference, Beijing (2011)
24. "Atmospheric Monitoring at the Pierre Auger Observatory – Status and Update", The Pierre Auger Collaboration, Proc. 32<sup>nd</sup> International Cosmic Ray Conference, Beijing (2011)
25. "Cosmic Ray Energy Spectrum Measured by the Pierre Auger Observatory" 4-Corners APS Meeting Oct 23<sup>rd</sup> 2009
26. "Measurement of the cosmic ray energy spectrum above  $10^{18}$  eV with the Pierre Auger Observatory" The Pierre Auger Collaboration Proc. 31st International Cosmic Ray Conference, Poland (2009)
27. "Energy calibration of data recorded with the surface detectors of the Pierre Auger Observatory" The Pierre Auger Collaboration Proc. 31st International Cosmic Ray Conference, Poland (2009)
28. "Discriminating potential astrophysical sources of the highest energy cosmic rays with the Pierre Auger Observatory." The Pierre Auger Collaboration Proc. 31st International Cosmic Ray Conference, Poland (2009)
29. "Discriminating potential astrophysical sources of the highest energy cosmic rays with the Pierre Auger Observatory." The Pierre Auger Collaboration Proc. 31st International Cosmic Ray Conference, Poland (2009)
30. "Limits on the flux of diffuse ultra high energy neutrinos set using the Pierre Auger Observatory" The Pierre Auger Collaboration Proc. 31st International Cosmic Ray Conference, Poland (2009)
31. "Measurement of the average depth of shower maximum and its fluctuations with the Pierre Auger Observatory" The Pierre Auger Collaboration Proc. 31st International Cosmic Ray Conference, Poland (2009)
32. "Atmospheric Monitoring and its Use in Air Shower Analysis at the Pierre Auger Observatory" The Pierre Auger Collaboration Proc. 31st International Cosmic Ray Conference, Poland (2009)

33. "The Northern Pierre Auger Observatory" The Pierre Auger Collaboration Proc. 31st International Cosmic Ray Conference, Poland (2009)
34. "Atmospheric effects on extensive air showers observed with the array of surface detectors of the Pierre Auger Observatory" The Pierre Auger Collaboration Proc. 31st International Cosmic Ray Conference, Poland (2009)
35. "The delay of the start-time measured with the Pierre Auger Observatory for inclined showers and a comparison of its variance with models" The Pierre Auger Collaboration Proc. 31st International Cosmic Ray Conference, Poland (2009).
36. "Investigation of the Displacement Angle of the Highest Energy Cosmic Rays Caused by the Galactic Magnetic Field" The Pierre Auger Collaboration Proc. 31st International Cosmic Ray Conference, Poland (2009).
37. "Investigation of the Displacement Angle of the Highest Energy Cosmic Rays Caused by the Galactic Magnetic Field" The Pierre Auger Collaboration Proc. 31st International Cosmic Ray Conference, Poland (2009).
38. "Nightly Relative Calibration of the Fluorescence Detector of the Pierre Auger Observatory" The Pierre Auger Collaboration Proc. 31st International Cosmic Ray Conference, Poland (2009).
39. "Rapid monitoring of the atmosphere after the detection of high-energy showers at the Pierre Auger Observatory" The Pierre Auger Collaboration Proc. 31st International Cosmic Ray Conference, Poland (2009).
40. "Atmospheric Aerosol Measurements at the Pierre Auger Observatory" The Pierre Auger Collaboration Proc. 31st International Cosmic Ray Conference, Poland (2009).
41. "Education and Public Outreach of the Pierre Auger Observatory" The Pierre Auger Collaboration Proc. 31st International Cosmic Ray Conference, Poland (2009)
42. "Measurement of Aerosols at the Pierre Auger Observatory" The Pierre Auger Collaboration Proc. 30st International Cosmic Ray Conference, Mexico (2007)
43. "The Absolute, Relative and Multi-Wavelength Calibration of the Pierre Auger Observatory Fluorescence Detectors" The Pierre Auger Collaboration Proc. 30st International Cosmic Ray Conference, Mexico (2007)
44. "The Absolute, Relative and Multi-Wavelength Calibration of the Pierre Auger Observatory Fluorescence Detectors" The Pierre Auger Collaboration Proc. 30st International Cosmic Ray Conference, Mexico (2007)
45. "Systematic study of atmosphere-induced influences and uncertainties on shower reconstruction at the Pierre Auger Observatory" The Pierre Auger Collaboration Proc. 30st International Cosmic Ray Conference, Mexico (2007)



46. “The Northern Site of the Pierre Auger Observatory” The Pierre Auger Collaboration Proc. 30st International Cosmic Ray Conference, Mexico (2007)
47. “The UHECR spectrum measured at the Pierre Auger Observatory and its astrophysical implications” The Pierre Auger Collaboration Proc. 30st International Cosmic Ray Conference, Mexico (2007)
48. “Measurement of the UHECR energy spectrum from hybrid data of the Pierre Auger Observatory” The Pierre Auger Collaboration Proc. 30st International Cosmic Ray Conference, Mexico (2007)
49. “Search for large-scale anisotropies with the Auger Observatory” The Pierre Auger Collaboration Proc. 30st International Cosmic Ray Conference, Mexico (2007)
50. “Constraints on top-down models for the origin of UHECRs from the Pierre Auger Observatory data” The Pierre Auger Collaboration Proc. 30st International Cosmic Ray Conference, Mexico (2007)
51. “Search for Ultra-High Energy Photons with the Pierre Auger Observatory” The Pierre Auger Collaboration Proc. 30st International Cosmic Ray Conference, Mexico (2007)
52. “Limits to the diffuse flux of UHE tau neutrinos at EeV energies from the Pierre Auger Observatory” The Pierre Auger Collaboration Proc. 30st International Cosmic Ray Conference, Mexico (2007)
53. “A search for possible anisotropies of cosmic rays with  $0.1 < E < 10$  EeV in the region of the Galactic Centre” The Pierre Auger Collaboration Proc. 30st International Cosmic Ray Conference, Mexico (2007)
54. “Studies of clustering in the arrival directions of cosmic rays detected at the Pierre Auger Observatory above 10 EeV” The Pierre Auger Collaboration Proc. 30st International Cosmic Ray Conference, Mexico (2007)
55. “Search for correlation of UHECRs and BL Lacs in Pierre Auger Observatory data” The Pierre Auger Collaboration Proc. 30st International Cosmic Ray Conference, Mexico (2007)
56. “Study of the Cosmic Ray Composition above 0.4 EeV using the Longitudinal Profiles of Showers observed at the Pierre Auger Observatory” The Pierre Auger Collaboration Proc. 30st International Cosmic Ray Conference, Mexico (2007)
57. “The Central Laser Facility at the Pierre Auger Observatory” (astro-ph/0507334), F. Arqueros et al., Proc. 29th ICRC (2005).
58. “Atmosphere Monitoring at the High Resolution Fly’s Eye Observatory”, L. Wiencke for the HiRes collaboration, Proc 29<sup>th</sup> ICRC (2005).

59. "The Pierre Auger Observatory progress and first results", The Pierre Auger Collaboration, Proc. 29<sup>th</sup> ICRC (2005).
60. "First Estimate of the Primary Cosmic Ray Energy Spectrum above 3 Eev from the Pierre Auger Observatory", the Pierre Auger Collaboration, Proc. 29<sup>th</sup> ICRC (2005).
61. "Atmospheric Aerosol Monitoring at the Pierre Auger Observatory", R. Cester et al., Proc. 29<sup>th</sup> ICRC (2005).
62. "Timing Calibration and Synchronization of Surface and Fluorescence Detectors of the Pierre Auger Observatory", P. Allison et al., Proc. 29<sup>th</sup> ICRC (2005).
63. "Search of Point Sources of Ultra-High-Energy Cosmic Rays above  $10^{19}$  eV Using a Maximum Likelihood Ratio Test", HiRes Collaboration, Proc. 29<sup>th</sup> ICRC, 7 p397 (2005).
64. "Comparision of UHE Composition Measurements by Fly's Eye, HiRes-prototyp/MIA and Stereo HiRes Experiments", HiRes Collaboration, 29<sup>th</sup> International Conference on Cosmic Rays (2005).
65. "Fitting the HiRes Spectra, HiRes Collaboration", 29<sup>th</sup> International Conference on Cosmic Rays (2005).
66. "UHECR Composition Measurements Using the HiRes-II Detector", HiRes Collaboration, Proc 29<sup>th</sup> International Conference on Cosmic Rays (2005).
67. "Search for Cross-Correlations of Ultra-High-Energy Cosmic Rays with BL Lacerate Objects", HiRes Collaboration, Proc 29<sup>th</sup> International Conference on Cosmic Rays 7, p329 (2005).
68. "Studies of Systematic Uncertainties in the HiRes-II Measurement of the UHECR Spectrum" HiRes Collaboration, Proc 29<sup>th</sup> International Conference on Cosmic Rays (2005).
69. "The Search for Anisotropy in the Arrival Directions of Ultra-High Energy Cosmic Rays Observed by the High Resolution Fly's Eye Detector in Monocular Mode", HiRes Collaboration Nuclear Phys. B 136C p52 (2004).
70. "A Measurement of the UHECR Spectrum with the HiRes FADC Detector", HiRes Collaboration, Nuclear Phys. B 136c p24 (2004).
71. "A Search for Small-Scale Anisotropy of Cosmic Rays above  $10^{19}$  eV with HiRes Stereo", HiRes Collaboration, Nuclear Phys. B 136c p46 (2004).
72. "Probing the HiRes Aperture near 100 EeV using a Distant Laser", L. Wiencke for the HiRes collaboration, International Conference on Cosmic Rays, HE 1.3 p477 2003.

73. "Shoot the Shower, Probing Atmospheric Clarity of the Shower/Detector Plane at HiRes", J. Boyer, E. Mannel, L. Wiencke for the HiRes Collaboration, International Conference on Cosmic Rays, HE 1.3 p481 2003.
74. "Atmospherics at HiRes", L. Wiencke for the HiRes collaboration, ICRC, HE 1.3 p485 2003.
75. "Measurement of the Flux of UHE Cosmic Rays by the HiRes Detectors Observing in Monocular Mode" with D. Bergman et al., Proc 28<sup>th</sup> ICRC (2003).
76. "Stereo Spectrum of UHECR Showers at the HiRes detector" with W. Springer et al., Proc 28<sup>th</sup> ICRC (2003).
77. "Measurement of the Flux of UHE Cosmic Rays by the HiRes Detectors Observing in both Monocular and Stereoscopic Modes", with W. Springer et al., Proc 28<sup>th</sup> ICRC (2003).
78. "Absolute Calibration of the HiRes Detectors" with S. Thomas et al., Proc 28<sup>th</sup> ICRC (2003).
79. "Absolute Energy Scale of the HiRes Detector" with E. Mannel et al., Proc 28<sup>th</sup> ICRC (2003).
80. "Atmospheric Monitoring at HiRes - The atmosphere at Dugway" L. R. Wiencke et al., Proc of 27<sup>th</sup> ICRC (2001).
81. "Measurement of the Ultrahigh Energy Cosmic Ray Spectrum using Monocular Data from the High-Resolution Fly's Eye Experiment" with T. Abu-Zayyad et al, Proc 27<sup>th</sup> ICRC (2001).
82. "Atmospheric Monitoring at HiRes - Analysis Techniques" M. Roberts, L. R. Wiencke et al, Proc of 27<sup>th</sup> ICRC (2001).
83. "Measuring Air Shower Speeds with the HiRes Fluorescence Detectors" P. Morrison, L. R. Wiencke et al, Proc of 27<sup>th</sup> ICRC (2001).
84. "Absolute GPS Time Event Generation and Capture for Remote Locations" J.D. Smith, S. B. Thomas, L. R. Wiencke et al., Proc of 27<sup>th</sup> ICRC, HE175, (2001).
85. "Atmospheric Monitoring at HiRes - Hardware I", M. D. Roberts, L. R. Wiencke et al., Proc 27<sup>th</sup> ICRC, HE 139, (2001).
86. "Atmospheric Monitoring at HiRes - Hardware II", L. R. Wiencke et al., Proc 27<sup>th</sup> ICRC, HE 140 (2001).
87. "A fiber-optic based calibration system for the HiRes Experiment" G. Archbold, J. Girard, L.R. Wiencke et al, Proc 27<sup>th</sup> ICRC, HE138 (2001).

88. "A Monocular Spectrum Analysis using FADC Timing at HiRes" with D. Bergman et al., Proc 27<sup>th</sup> ICRC, HE78, (2001).
89. "Preliminary Stereo Results from the High Resolution Fly's Eye Cosmic Ray Observatory" with K. A. Reil et al., Proc 27<sup>th</sup> ICRC (2001).
90. "Calibration and Stability of the High Resolution Fly's Eye Detector" with B.F. Jones et al., Proc 27<sup>th</sup> ICRC (2001).
91. "Description of the High Resolution Fly's Eye Detector", with T. Abu-Zayyad et al, Proc 27<sup>th</sup> ICRC, HE 76, (2001).
92. "Measurement of the Cosmic Ray Energy Spectrum from  $10^{17}$  to  $10^{18.3}$  eV Using a Hybrid Technique", with Z. Cao et al., Proc 27<sup>th</sup> ICRC (2001).
93. "Measurement of the Average Longitudinal Development Profile of Cosmic Ray Air Showers Between  $10^{17}$  to  $10^{18}$ ", with Z. Cao et al., Proc 27<sup>th</sup> ICRC (2001).
94. "Monte Carlo Simulation of the HiRes Experiment" with Z. Cao et al., Proc 27<sup>th</sup> ICRC (2001).
95. "Atmospheric Monitoring in Utah using the Back Scatter LIDAR method" with Sasano et al., Proc 27<sup>th</sup> ICRC (2001).
96. "Comparison of CORSIKA-generated Showers with HiRes data" with A. Zech et al. Proc 27<sup>th</sup> ICRC (2001).
97. "Measurement of the Cosmic Ray energy Spectrum and Composition from  $10^{17}$  to  $10^{19}$  eV using the HiRes Prototype Detector", HiRes Collaboration, Proc 27<sup>th</sup> ICRC (2001).
98. "Measurement of the Ultra-High Energy Cosmic Ray Spectrum using Monocular Data from the High Resolution Fly's Eye Experiment", with C.Jui et al, Proc 27<sup>th</sup> ICRC (2001).
99. "Study of the Longitudinal Development of Air Showers with CORSIKA", with C. Song et al., Proc 27<sup>th</sup> ICRC (2001).
100. "Systematic Issues in the HiRes Spectral Measurements", the HiRes Collaboration, Proc 27<sup>th</sup> ICRC (2001).
101. "Stereo Measurements of Cosmic Ray Events at the High Resolution Fly's Eye Prototype", L. Wiencke et al., ICRC (1999).
102. "HiRes/MIA Measurements of EAS Development Between  $10^{17}$  and  $10^{18}$  eV", with T. Abu-Zayyad et al., ICRC 5 365 (1999).
103. "HiRes/MIA Measurements of EAS Development Between  $10^{17}$  and  $10^{18}$  eV: Detector Description and Performance", with T. Abu-Zayyad et al., ICRC 3 260 (1999).

104. "First Stereo Results from the High Resolution Fly's Eye Air Fluorescence Detector", with T. Abu-Zayyad, et al., ICRC 5 369.
105. "The Cosmic Ray Energy Spectrum as Measured in Monocular Mode by the High Resolution Fly's Eye Experiment", with T. Abu-Zayyad et al., ICRC 3 264 (1999).
106. Study of Anisotropy in Arrival Directions in the Highest Energy Cosmic Rays from High Resolution Fly's Eye Results", with T. Abu-Zayyad et al., ICRC 3 296 (1999).

107. "A Steerable Laser System for Atmospheric Monitoring at the High Resolution Fly's Eye," L. Wiencke. et al., in *Ultraviolet Atmospheric and Space Remote Sensing: Methods and Instrumentation* , R. Huffman and C. Stergis, ed., Proc. SPIE (1999).
108. "Research and Development Facility at Black Rock Hills for a next Generation Air Fluorescence Detector", L Wiencke et al., ICRC 5, 389 (1999).
109. "Atmospheric Monitoring via Measurements of Scattered Light at the High Resolution Fly's Eye", with R. Gray et al., **ICRC 5** 353 (1999).
110. "A Steerable Laser System for Atmospheric Monitoring at the High Resoluiton Fly's Eye", with R. Mumford, et al., ICRC 5 377 (1999).
111. "Status of the High Resolution Fly's Eye Detector: Operation and Installation", with T. Abu-Zayyad et al., **ICRC 5** 349 (1999).
112. "Atmospheric Monitoring for Transmission Corrections to Air Fluorescence Signals" with J. A.J. Matthews et al., ICRC 5 412 (1999).
113. "Atmospheric Monitoring for the Telescope Array Project", with M. Chikawa et al., ICRC 5 404 (1999).
114. "Calibrating the High Resolution Fly's Eye Detector", with B. Jones et al., ICRC 5 429 (1999).
115. "Light Transmission Fluctuations from Extended Air Showers produced by Cosmic Rays and Gamma-Rays", Proc 26<sup>th</sup> ICRC 5 433 (1999).
116. "Radio Controlled Light Sources for Atmospheric Monitoring at HiRes," with T. Abu-Zayyad et al., ICRC 5 357 (1997).
117. "Physics with HiRes Stage 0.5 and Stage 2," with T. Abu-Zayyad et al., ICRC 5 321 (1997).
118. "Cosmic Ray Composition Measured by HiRes in Coincidence with FE2," with T. Abu-Zayyad et al., ICRC 3 21 (1997).
119. "Multi-Component Observations of  $10^{17}$  eV EAS with a Hybrid Fluorescence and Surface Detector," with T. Abu-Zayyad et al., ICRC 3 29 (1997).
120. "Trigger Sensitivity of the FADC Instrumented HiRes Fly's Eye," with T. Abu-Zayyad ICRC 7 209 (1997).
121. "Calibration and Stability Measurements of A FADC Based Data Acquisition System for the HiRes Fly's Eye Experiment," with T. Abu-Zayyad et al., ICRC 7 213 (1997).
122. "Cosmic Ray Composition Measured by HiRes in Coincidence with FE2," with T. Abu-Zayyad ICRC 4 29 (1997).

123. "The Capabilities of the High Resolution FLY's Eye Detector," with T. Abu-Zayyad et al., ICRC **5** 325 (1997).
124. "Status of the High Resolution FLY's Eye Detector: Operaton and Installation," with T. Abu-Zayyad. et al., ICRC **5** 329 (1997).
125. "The HiRes Detector: Absolute Calibration and Alignment," with T. Abu-Zayyad et al., ICRC **5** 333 (1997).
126. "A Monte Carlo Study of Reconstructin of Monocular Events having Limited Track Lengths for the High Resolution Fly's Eye," with T. Abu-Zayyad et al., ICRC **5** 337 (1997).
127. "Stereo Reconstruction of EAS with the Hres Detector," with T. Abu-Zayyad et al., ICRC **5** 341 (1997).
128. "Atmospheric Monitoring at the High Resolution Fly's Eye: Atmospheric Scattering," with T. Abu-Zayyad et al., ICRC **5** 345 (1997).
129. "Testing the High Resolution Fly's Eye Using the Laserscope," with T. Abu-Zayyad et al., ICRC **5** 349 (1997).
130. "Atmospheric Monitoring at the High Resolution Fly's Eye: Data from the HiRes2 Flasher Array, " with T. Abu-Zayyad et al., ICRC **5** 361 (1997).
131. "Atmospheric Monitoring at the High Resolution Fly's Eye: Monitoring Data via the HiRes Laser/Lidar System," with T. Abu-Zayyad et al., ICRC **5** 365 (1997).
132. "The High Resolution Fly's Eye (HiRes) Project", with M. Al-Seady et al., 32<sup>nd</sup> Rencontres de Moriond: High Energy Phenonema in Astrophysics, (1997).
133. "Study of Lambda0 Polarization in Exclusive PP Reactions at 27.5 GeV/c", with J. Felix et al., 6<sup>th</sup> Workshop on Particles and Fields Particles and Fields 320 (1997).
134. "A Precision Measurement of the Sigma0 Hyperon Mass", with M. Wang et al, ., 6<sup>th</sup> Workshop on Particles and Fields Particles and Fields 80 (1997).

#### Invited Talks

1. "Using Cosmic Rays to Measure Atmospheric Clarity", International Summer School on Atmospheric and Oceanic Sciences (ISSAOS-2011) , Laboratori, Nazionali del Gran Sasso, Italy Sept 7<sup>th</sup> 2011.
2. "Overview of Atmospheric Monitoring at Cosmic Ray Observatories", International Summer School on Atmospheric and Oceanic Sciences (ISSAOS-2011) , Laboratori, Nazionali del Gran Sasso, Italy. Sept 7<sup>th</sup> 2011.

3. "Overview of the atmospheric monitoring program of the Pierre Auger Observatory", Interdisciplinary Science at the Pierre Auger Observatory (IS@AO), Cambridge, UK April 17<sup>th</sup> 2011.
4. "Future Plans at the Pierre Auger Observatory", Interdisciplinary Science at the Pierre Auger Observatory (IS@AO), Cambridge, UK April 18<sup>th</sup> 2011.
5. Auger North: The Pierre Auger Observatory in the Northern Hemisphere" High Energy Astro Physics Division (HEAD) Hawaii March 4th 2010.
6. "The Atmospheric Monitoring Program of the Pierre Auger Observatory Overview and Future Plans" ATMON 2010, Madison WI, Sept 14th 2010.
7. "Pierre Auger Observatory: Recent Results and Future Plans" SLAC Summer Institute, August 3rd 2009.
8. "An Introduction to Atmospheric Monitoring at the Pierre Auger Observatory", Atmospheric Monitoring for Astroparticle Physics workshop, Prague Czech Republic, June 26<sup>th</sup> 2008.
9. "Recent Results from the Pierre Auger Observatory", Colloquium, Department of Physics, Colorado School of Mines, Jan. 22nd 2008.
10. "Atmospheric Calorimetry above  $10^{19}$  eV: Shooting Lasers at the Pierre Auger Observatory" May 28, 2008 International Calorimetry Conference (CALOR), Pavia Italy.
11. "Measuring Cosmic Rays with Joules of Energy at the Pierre Auger Observatory" Faculty Conference, Colorado School of Mines, Aug. 18 2008.
12. "The Pierre Auger Observatory in Argentina and Future Opportunities for Kansas and Colorado", with Fred Sarazin. Seminar University of Kansas, April 8<sup>th</sup> 2008.
13. "The Pierre Auger Observatory, Recent Results and future prospects for Colorado", Colloquium April 10<sup>th</sup> 2008, Special Seminar NIST Boulder.
14. "The Mystery of High Energy Cosmic Rays", Special Colloquium, Department of Physics, Colorado School of Mines, Feb 2007.
15. "Cosmic Rays 101, The International Telescope Array Experiment in Millard County UT and the Utah/Japanese Connection" Presentation to the Japanese American Citizens League Board Meeting, Salt Lake City, UT May 18<sup>th</sup> 2006
16. "The Mystery of High Energy Cosmic Rays," Colloquium University of Delaware (2006), "Astro-Particle Physics near the GZK Feature and Beyond", Colloquium University of Utah, Salt Lake City (2005).
17. "Measuring Air Showers in the Atmosphere," Colloquium Utah State University, Logan (2004).



18. “Atmospheric Monitoring,” Workshop on Calibration of Fluorescence Detectors, ICRR, Kashiwa, Japan (2004).
19. “Viewing Air Showers in the Desert Sky with HiRes,” ICRR, University of Tokyo, Japan (2002).
20. “The High Resolution Fly’s Eye: Status and Physics,” Very High Energy Neutrino Telescope Workshop, Taipei, China (2002).
21. “The Energy Spectrum and the High Resolution Fly’s Eye,” European Cosmic Ray Symposium, Lodz, Poland (2000)