

John E. Jacobsen

Curriculum Vitae

Contact Information:

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Blog: <http://eigenhombre.com>

Overview:

With over two decades of experience in high energy physics and particle astrophysics, I am a software engineer specializing in experimental physics and other high-performance computing environments. My recent work for the IceCube Neutrino Observatory at the South Pole includes several critical components of the detector's data acquisition system and an innovative, end-to-end implementation of the experiment control system, in production since early 2009. I also play a key role in troubleshooting and maintaining that detector during calibration and normal operations (>99% uptime).

It is a passion of mine to address difficult computing problems in science, problems which may engage multiple challenges in terms of computability, complexity, scalability, and usability. I am particularly interested in using modern, high-level programming languages (such as Python, as well as Clojure and other functional languages), to create simple, beautiful, usable and powerful systems for the collection, analysis and visualization of data on the frontiers of science.

Education:

December, 1996: Ph. D., Department of Physics, University of Wisconsin – Madison.

1993–1996: Graduate Student, Department of Physics, and Department of Art, University of Wisconsin – Madison.

1991–1993: Department of Art, University of Wisconsin – Madison.

1990: B.S., Physics, University of Wisconsin – Madison. Graduated with distinction, class rank 17 out of 3073.

Positions Held:

- 2004–present: President, NPX Designs, Inc.
Current and recent clients include:
The University of Wisconsin, Madison (IceCube Project);
The University of Maryland, Dept. of Physics;
The Pennsylvania State University, Dept. of Physics;
E. O. Lawrence Berkeley National Laboratory, Berkeley, CA;
Pragma Securities, Inc., New York, NY
- 2002–2004: Sole Proprietor, John Jacobsen IT Services, Chicago, IL
- 1998–2002: Computer Systems Engineer, E. O. Lawrence Berkeley National Laboratory, Berkeley, CA
- 1997–1998: Postdoctoral Research Associate, Department of Physics, University of Wisconsin, Madison, Wisconsin
- 1997–present: Visiting Scholar, Department of Physics, University of California, Berkeley, California
- 1998–present: Postdoctoral Guest Researcher, E. O. Lawrence Berkeley National Laboratory, Berkeley, California
- 1994–1996: Graduate Research Assistant, Department of Physics, University of Wisconsin, Madison, Wisconsin
- 1993–1994: United States Department of Education Fellow, Department of Physics, University of Wisconsin, Madison, Wisconsin
- 1991–1993: Undergraduate Physics Research Assistant, Department of Physics, University of Wisconsin, Madison, Wisconsin
- 1990–1991: Physics Research Assistant, CERN, Geneva, Switzerland
- 1987–1990: Undergraduate Physics Research Assistant, Department of Physics, University of Wisconsin, Madison, Wisconsin

Recent Conferences:

- 2012: **Clojure/conj**, Raleigh, NC
- 2012: **Clojure/West**, San Jose, CA
- 2010: **O'Reilly Open Source Conference**, Portland, OR
- 2008: **O'Reilly Open Source Conference**, Portland, OR
- 2008: **PyCon**, Chicago, IL

Selected Awards and Honors:

- 1994: Emanuele A. Piori Award (highest score on graduate qualifying exam).
University of Wisconsin – Madison Department of Physics.
- 1993-1994: U. S. Department of Education Graduate Fellowship. University of Wisconsin – Madison Department of Physics.
- 1990: Albert Radtke Scholarship (outstanding undergraduate physics major).
University of Wisconsin – Madison Department of Physics.

Featured Publications:

1. “Simulating the Detection of Muons and Neutrinos in Deep Antarctic Ice.” Ph. D. Thesis. The University of Wisconsin – Madison (1996).
URL: <http://johnj.com/thesis>
2. “Using Neural Networks with Jet Shapes to Identify b jets in e^+e^- Interactions” (with L. Bellantoni, J. Conway, Y. Pan and S. L. Wu), Nucl. Instrum. Meth. **A310** 618-622 (1991).
3. “The IceCube Data Acquisition System: Signal Capture, Digitization, and Timestamping,” (with R. Abbassi *et al.*), LBNL-1668E, arXiv:0810.4930 [physics.ins-det] 10.1016/j.nima.2009.01.001. Nuclear Instruments and Methods **A601**, 294 (2009).
4. “Ultratransparent Ice as a Supernova Detector” (with F. Halzen and E. Zas), Phys. Rev. **D53**, n12, p. 7359 (1996).
5. “Possibility that High-Energy Neutrino Telescopes Could Detect Supernovae” (with F. Halzen and E. Zas), Phys. Rev. **D49**, n4, p. 1758 (1994).

Other Publications in Refereed Journals:¹

1. “An Absence of Neutrinos Associated with Cosmic-Ray Acceleration in γ -ray Bursts” (with R. Abbasi *et al.* [IceCube Collaboration]).
arXiv:1204.4219 [astro-ph.HE]
10.1038/nature11068
Nature **484**, 351 (2012)
2. “A Search for UHE Tau Neutrinos with IceCube” (with R. Abbasi *et al.* [IceCube Collaboration]).
arXiv:1202.4564 [astro-ph.HE]
10.1103/PhysRevD.86.022005
Phys. Rev. D **86**, 022005 (2012)
3. “Multi-year search for dark matter annihilations in the Sun with the AMANDA-II and IceCube detectors” (with R. Abbasi *et al.* [IceCube Collaboration]).

¹Updated 2012

- arXiv:1112.1840 [astro-ph.HE]
 10.1103/PhysRevD.85.042002
 Phys. Rev. D **85**, 042002 (2012)
4. “Searching for soft relativistic jets in Core-collapse Supernovae with the IceCube Optical Follow-up Program” (with R. Abbasi *et al.* [IceCube and ROTSE Collaborations]). arXiv:1111.7030 [astro-ph.HE]
 Astron. Astrophys. **539**, A60 (2012) (2012).
 5. “The Design and Performance of IceCube DeepCore” (with R. Abbasi *et al.* [IceCube Collaboration]).
 arXiv:1109.6096 [astro-ph.IM]
 10.1016/j.astropartphys.2012.01.004
 Astropart. Phys. **35**, 615 (2012)
 6. “Observation of an Anisotropy in the Galactic Cosmic Ray arrival direction at 400 TeV with IceCube” (with R. Abbasi *et al.* [IceCube Collaboration]).
 arXiv:1109.1017 [hep-ex]
 10.1088/0004-637X/746/1/33
 Astrophys. J. **746**, 33 (2012)
 7. “Searches for periodic neutrino emission from binary systems with 22 and 40 strings of IceCube” (with R. Abbasi *et al.* [IceCube Collaboration]).
 arXiv:1108.3023 [astro-ph.HE]
 10.1088/0004-637X/748/2/118
 Astrophys. J. **748**, 118 (2012)
 8. “Neutrino analysis of the September 2010 Crab Nebula flare and time-integrated constraints on neutrino emission from the Crab using IceCube” (with R. Abbasi *et al.* [IceCube Collaboration]). arXiv:1106.3484 [astro-ph.HE]
 10.1088/0004-637X/745/1/45
 Astrophys. J. **745**, 45 (2012)
 9. “Time-Dependent Searches for Point Sources of Neutrinos with the 40-String and 22-String Configurations of IceCube” (with R. Abbasi *et al.* [IceCube Collaboration]).
 arXiv:1104.0075 [astro-ph.HE]
 10.1088/0004-637X/744/1/1
 Astrophys. J. **744**, 1 (2012)
 10. “Background studies for acoustic neutrino detection at the South Pole” (with R. Abbasi *et al.* [IceCube Collaboration]). arXiv:1103.1216 [astro-ph.IM]
 10.1016/j.astropartphys.2011.09.004
 Astropart. Phys. **35**, 312 (2012)
 11. “IceCube Sensitivity for Low-Energy Neutrinos from Nearby Supernovae” (with R. Abbasi *et al.* [IceCube Collaboration]). arXiv:1108.0171 [astro-ph.HE]
 Astron. Astrophys. **535**, A109 (2011)
 12. “Observation of Anisotropy in the Arrival Directions of Galactic Cosmic Rays at Multiple Angular Scales with IceCube” (with R. Abbasi *et al.* [IceCube Collaboration]).

- arXiv:1105.2326 [astro-ph.HE]
 10.1088/0004-637X/740/1/16
 Astrophys. J. **740**, 16 (2011) (2011).
13. “A Search for a Diffuse Flux of Astrophysical Muon Neutrinos with the IceCube 40-String Detector” (with R. Abbasi *et al.* [IceCube Collaboration]).
 arXiv:1104.5187 [astro-ph.HE]
 10.1103/PhysRevD.84.082001
 Phys. Rev. D **84**, 082001 (2011)
 14. “Constraints on the Extremely-high Energy Cosmic Neutrino Flux with the IceCube 2008-2009 Data” (with R. Abbasi *et al.* [IceCube Collaboration]).
 arXiv:1103.4250 [astro-ph.CO]
 10.1103/PhysRevD.84.079902, 10.1103/PhysRevD.83.092003
 Phys. Rev. D **83**, 092003 (2011), [Erratum-ibid. D **84**, 079902 (2011)]
 15. “Constraints on high-energy neutrino emission from SN 2008D” (with R. Abbasi *et al.* [IceCube Collaboration]). arXiv:1101.3942 [astro-ph.HE]
 Astron. Astrophys. **527**, A28 (2011)
 16. “Search for neutrino-induced cascades with five years of AMANDA data” (with R. Abbasi, Y. Abdou, T. Abu-Zayyad, O. Actis, J. Adams, J. A. Aguilar, M. Ahlers and K. Andeen *et al.*). 10.1016/j.astropartphys.2010.10.007
 Astropart. Phys. **34**, 420 (2011).
 17. “Search for Dark Matter from the Galactic Halo with the IceCube Neutrino Observatory” (with R. Abbasi *et al.* [IceCube Collaboration]).
 arXiv:1101.3349 [astro-ph.HE]
 10.1103/PhysRevD.84.022004
 Phys. Rev. D **84**, 022004 (2011)
 18. “First search for atmospheric and extraterrestrial neutrino-induced cascades with the IceCube detector” (with R. Abbasi *et al.* [IceCube Collaboration]).
 arXiv:1101.1692 [astro-ph.HE]
 10.1103/PhysRevD.84.072001
 Phys. Rev. D **84**, 072001 (2011)
 19. “Limits on Neutrino Emission from Gamma-Ray Bursts with the 40 String IceCube Detector” (with R. Abbasi *et al.* [IceCube Collaboration]).
 arXiv:1101.1448 [astro-ph.HE]
 10.1103/PhysRevLett.106.141101
 Phys. Rev. Lett. **106**, 141101 (2011) (2011).
 20. “Time-Integrated Searches for Point-like Sources of Neutrinos with the 40-String IceCube Detector” (with R. Abbasi *et al.* [IceCube Collaboration]).
 arXiv:1012.2137 [astro-ph.HE]
 10.1088/0004-637X/732/1/18
 Astrophys. J. **732**, 18 (2011)

21. “Measurement of the atmospheric neutrino energy spectrum from 100 GeV to 400 TeV with IceCube” (with R. Abbasi *et al.* [IceCube Collaboration]).
arXiv:1010.3980 [astro-ph.HE]
10.1103/PhysRevD.83.012001
Phys. Rev. D **83**, 012001 (2011)
22. “Measurement of Acoustic Attenuation in South Pole Ice” (with R. Abbasi *et al.* [IceCube Collaboration]). arXiv:1004.1694 [astro-ph.IM]
10.1016/j.astropartphys.2010.10.003
Astropart. Phys. **34**, 382 (2011)
23. “Search for a Lorentz-violating sidereal signal with atmospheric neutrinos in IceCube” (with R. Abbasi *et al.* [IceCube Collaboration]).
arXiv:1010.4096 [astro-ph.HE]
10.1103/PhysRevD.82.112003
Phys. Rev. D **82**, 112003 (2010)
24. “Supernova PTF 09uj: A possible shock breakout from a dense circumstellar wind” (with E. O. Ofek, I. Rabinak, J. D. Neill, I. Arcavi, S. B. Cenko, E. Waxman, S. R. Kulkarni and A. G. Yam *et al.*).
arXiv:1009.5378 [astro-ph.HE]
10.1088/0004-637X/724/2/1396
Astrophys. J. **724**, 1396 (2010)
25. “The first search for extremely-high energy cosmogenic neutrinos with the IceCube Neutrino Observatory” (with R. Abbasi *et al.* [IceCube Collaboration]).
arXiv:1009.1442 [astro-ph.CO]
10.1103/PhysRevD.82.072003
Phys. Rev. D **82**, 072003 (2010) 2010) (2010).
26. “Search for relativistic magnetic monopoles with the AMANDA-II neutrino telescope” (with R. Abbasi, Y. Abdou, T. Abu-Zayyad, J. Adams, J. A. Aguilar, M. Ahlers, K. Andeen and J. Auffenberg *et al.*).
10.1140/epjc/s10052-010-1411-6
Eur. Phys. J. C **69**, 361 (2010).
27. “Measurement of the Anisotropy of Cosmic Ray Arrival Directions with IceCube” (with R. Abbasi *et al.* [IceCube Collaboration]). arXiv:1005.2960 [astro-ph.HE]
10.1088/2041-8205/718/2/L194
Astrophys. J. **718**, L194 (2010) 2010) (2010).
28. “The Energy Spectrum of Atmospheric Neutrinos between 2 and 200 TeV with the AMANDA-II Detector” (with R. Abbasi *et al.* [IceCube Collaboration]).
arXiv:1004.2357 [astro-ph.HE]
10.1016/j.astropartphys.2010.05.001
Astropart. Phys. **34**, 48 (2010) 2010) (2010).
29. “Core-Collapse Supernovae from the Palomar Transient Factory: Indications for a Different Population in Dwarf Galaxies” (with I. Arcavi, A. Gal-Yam, M. M. Kasliwal, R. M. Quimby, E. O. Ofek, S. R. Kulkarni, P. E. Nugent and S. B. Cenko *et al.*).

- arXiv:1004.0615 [astro-ph.CO]
 10.1088/0004-637X/721/1/777
 Astrophys. J. **721**, 777 (2010)
30. “Calibration and Characterization of the IceCube Photomultiplier Tube” (with R. Abbasi *et al.* [IceCube Collaboration]). arXiv:1002.2442 [astro-ph.IM]
 10.1016/j.nima.2010.03.102
 Nucl. Instrum. Meth. A **618**, 139 (2010)
 31. “Limits on a muon flux from Kaluza-Klein dark matter annihilations in the Sun from the IceCube 22-string detector” (with R. Abbasi *et al.* [IceCube Collaboration]).
 arXiv:0910.4480 [astro-ph.CO]
 10.1103/PhysRevD.81.057101
 Phys. Rev. D **81**, 057101 (2010) 2009) (2010).
 32. “Measurement of sound speed vs. depth in South Pole ice for neutrino astronomy” (with R. Abbasi *et al.* [IceCube Collaboration]). arXiv:0909.2629 [astro-ph.IM]
 10.1016/j.astropartphys.2010.01.012
 Astropart. Phys. **33**, 277 (2010)
 33. “Search for muon neutrinos from Gamma-Ray Bursts with the IceCube neutrino telescope” (with R. Abbasi *et al.* [IceCube Collaboration]).
 arXiv:0907.2227 [astro-ph.HE]
 10.1088/0004-637X/710/1/346
 Astrophys. J. **710**, 346 (2010)
 34. “Determination of the atmospheric neutrino flux and searches for new physics with AMANDA- II”, R. abbasi *et al.*, Phys. Rev. **D79**, 102005” (2009).
 35. “Search for Point Sources of High Energy Neutrinos with Final Data from AMANDA-II, R. Abassi *et al.*, Phys. Rev. **D79**, 062001 ” (2009).
 36. “Extending the search for neutrino point sources with IceCube above the horizon” (with R. Abbasi *et al.* [IceCube Collaboration]). arXiv:0911.2338 [astro-ph.HE]
 10.1103/PhysRevLett.103.221102
 Phys. Rev. Lett. **103**, 221102 (2009)
 37. “First Neutrino Point-Source Results From the 22-String IceCube Detector” (with R. Abbasi *et al.* [IceCube Collaboration]). arXiv:0905.2253 [astro-ph.HE]
 10.1088/0004-637X/701/1/L47
 Astrophys. J. **701**, L47 (2009) 2009) (2009).
 38. “Limits on a Muon Flux from Neutralino Annihilations in the Sun with the IceCube 22-string detector” (with R. Abbasi *et al.* [ICECUBE Collaboration]).
 arXiv:0902.2460 [astro-ph.CO]
 10.1103/PhysRevLett.102.201302
 Phys. Rev. Lett. **102**, 201302 (2009) (2009).
 39. “Determination of the Atmospheric Neutrino Flux and Searches for New Physics with AMANDA-II” (with R. Abbasi *et al.* [IceCube Collaboration]).

- arXiv:0902.0675 [astro-ph.HE]
 10.1103/PhysRevD.79.102005
 Phys. Rev. D **79**, 102005 (2009)
40. “Search for Point Sources of High Energy Neutrinos with Final Data from AMANDA-II” (with R. Abbasi *et al.* [IceCube Collaboration]).
 arXiv:0809.1646 [astro-ph]
 10.1103/PhysRevD.79.062001
 Phys. Rev. D **79**, 062001 (2009)
 41. “Search for Ultra High-Energy Neutrinos with AMANDA-II” (with M. Ackermann *et al.* [IceCube Collaboration]). arXiv:0711.3022 [astro-ph]
 10.1086/527046
 Astrophys. J. **675**, 1014 (2008)
 42. “Solar Energetic Particle Spectrum on 13 December 2006 Determined by IceTop, R. Abbasi *et al.*, Astrophysical J. Lett. **689**, L65 ” (2008).
 43. “The Search for Muon Neutrinos from Northern Hemisphere Gamma-Ray Bursts with AMANDA” (with A. Achterberg *et al.* [IceCube and IPN Collaborations]).
 arXiv:0705.1186 [astro-ph]
 10.1086/524920
 Astrophys. J. **674**, 357 (2008)
 44. “Multi-year search for a diffuse flux of muon neutrinos with AMANDA-II” (with A. Achterberg *et al.* [IceCube Collaboration]). arXiv:0705.1315 [astro-ph]
 10.1103/PhysRevD.76.042008, 10.1103/PhysRevD.77.089904
 Phys. Rev. D **76**, 042008 (2007), [Erratum-ibid. D **77**, 089904 (2008)]
 45. “Detection of Atmospheric Muon Neutrinos with the IceCube 9-String Detector” (with the IceCube Collaboration, A. Achterberg *et al.*), Phys. Rev. **D76** 027901 (2007).
 46. “Multiyear Search for a Diffuse Flux of Muon Neutrinos with AMANDA-II” (with the IceCube Collaboration, A. Achterberg *et al.*), Phys. Rev. **D76** 042008 (2007).
 47. “Search for neutrino-induced cascades from gamma-ray bursts with AMANDA” (with A. Achterberg *et al.* [IceCube Collaboration]). astro-ph/0702265
 10.1086/518596
 Astrophys. J. **664**, 397 (2007)
 48. “Five years of searches for point sources of astrophysical neutrinos with the AMANDA-II neutrino telescope” (with A. Achterberg *et al.* [IceCube Collaboration]).
 astro-ph/0611063
 10.1103/PhysRevD.75.102001
 Phys. Rev. D **75**, 102001 (2007)
 49. “The ICECUBE Prototype String in AMANDA” (with M. Ackermann *et al.* [AMANDA Collaboration]).
 astro-ph/0601397
 10.1016/j.nima.2005.10.029
 Nucl. Instrum. Meth. A **556**, 169 (2006) (2006).

50. “First Year Performance of The IceCube Neutrino Telescope” (with A. Achterberg *et al.* [IceCube Collaboration]). astro-ph/0604450
10.1016/j.astropartphys.2006.06.007
Astropart. Phys. **26**, 155 (2006) 2006) (2006).
51. “Limits on the High-energy Gamma and Neutrino Fluxes from the SGR 1806-20 giant flare of December 27th, 2004 with the AMANDA-II detector” (with A. Achterberg *et al.* [IceCube Collaboration]). astro-ph/0607233
10.1103/PhysRevLett.97.221101
Phys. Rev. Lett. **97**, 221101 (2006)
52. “On the Selection of AGN Neutrino Source Candidates for a Source Stacking Analysis with Neutrino Telescopes” (with A. Achterberg *et al.* [IceCube Collaboration]). astro-ph/0609534
10.1016/J.ASTROPARTPHYS.2006.06.012
Astropart. Phys. **26**, 282 (2006)
53. “Astroparticle physics with high energy neutrinos: from AMANDA to IceCube” (F. Halzen *et al.*). The European Physical Journal **C** - Particles and Fields 21pp. 10.1140/epjc/s2006-02536-4 (2006).
54. “Limits on the Muon Flux from Neutralino Annihilations at the center of the Earth with AMANDA” (with A. Achterberg *et al.* [AMANDA Collaboration]). 10.1016/j.astropartphys.2006.05.007
Astropart. Phys. **26**, 129 (2006).
55. “From AMANDA to IceCube” (with M. Ribordy *et al.* [IceCube Collaboration]). astro-ph/0509322
10.1134/S1063778806110147
Phys. Atom. Nucl. **69**, 1899 (2006) 2005) (2006).
56. “Limits to the muon flux from neutralino annihilations in the sun with the amanda detector” (with M. Ackermann *et al.* [AMANDA Collaboration]). astro-ph/0508518
10.1016/j.astropartphys.2005.09.006
Astropart. Phys. **24**, 459 (2006)
57. “Search for Extraterrestrial Point Sources of High Energy Neutrinos with AMANDA-II Using Data Collected in 2000-2002” (with the AMANDA Collaboration, M. Ackermann *et al.*). Phys. Rev. **D71** 077102 (2005).
58. “Flux limits on ultra high energy neutrinos with AMANDA-B10” (with M. Ackermann, J. Ahrens, H. Albrecht, D. Atlee, X. Bai, R. Bay, M. Bartelt and S. W. Barwick *et al.*). 10.1016/j.astropartphys.2004.09.008
Astropart. Phys. **22**, 339 (2005).
59. “Measurement of the Cosmic Ray Composition at the Knee with the SPASE-2/AMANDA-B10 Detectors” (with the AMANDA and SPASE Collaborations, J. Ahrens *et al.*). Astropart. Phys. **21** 565-581 (2004).

60. “Calibration and Survey of AMANDA with the SPASE Detectors” (with the SPASE and AMANDA Collaborations, J. Ahrens *et al.*). Nucl. Instrum. Meth. **A522** 347-359 (2004).
61. “Status of the IceCube Neutrino Observatory” (with the IceCube Collaboration, J. Ahrens *et al.*). Prepared for 2nd VERITAS Symposium on TeV Astrophysics of Extragalactic Sources, Chicago, Illinois (24-26 Apr 2003). Published in New Astron. Rev. **48** 519-525 (2004).
62. “Search for Neutrino-induced Cascades with AMANDA” (with the AMANDA Collaboration, M. Ackermann *et al.*). Astropart. Phys. **22** 127-138 (2004).
63. “Muon Track Reconstruction and Data Selection Techniques in AMANDA” (with the AMANDA Collaboration, J. Ahrens *et al.*). Nucl. Instrum. Meth. **A524** 169-194 (2004).
64. “Search for Extraterrestrial Point Sources of Neutrinos with AMANDA-II” (with the AMANDA Collaboration, J. Ahrens *et al.*). Phys. Rev. Lett. **92** 071102 (2004).
65. “Sensitivity of the IceCube Detector to Astrophysical Sources of High Energy Muon Neutrinos” (with the IceCube Collaboration, J. Ahrens *et al.*). Astropart. Phys. **20** 507-532 (2004).
66. “Limits on Diffuse Fluxes of High-energy Extraterrestrial Neutrinos with the AMANDA-B10 Detector” (J. Ahrens *et al.*). Phys. Rev. Lett. **90** 251101 (2003).
67. “Limits To The Muon Flux From Wimp Annihilation In The Center Of The Earth With The AMANDA Detector” (by the AMANDA Collaboration, J. Ahrens *et al.*) (Feb 2002). 13pp. Phys. Rev. **D66** 032006 (2002). e-Print Archive: astro-ph/0202370. (2002).
68. “Results from AMANDA” (with C. Wiebusch *et al.* [AMANDA Collaboration]). 10.1142/S0217732302008575
Mod. Phys. Lett. A **17**, 2019 (2002).
69. “Search for Point Sources of High Energy Neutrinos with AMANDA” (the AMANDA Collaboration, J. Ahrens *et al.*) (Aug 2002). 46pp. Submitted to Astrophys. J. (2002) e-Print Archive: astro-ph/0208006. (2002).
70. “Observation of high-energy atmospheric neutrinos with the Antarctic Muon and Neutrino Detector Array” (with J. Ahrens *et al.* [AMANDA Collaboration]). astro-ph/0205109
10.1103/PhysRevD.66.012005
Phys. Rev. D **66**, 012005 (2002)
71. “Search For Supernova Neutrino Bursts With The AMANDA Detector” (the AMANDA Collaboration, J. Ahrens *et al.*) (May 2001). 20pp. Astropart. Phys. **16** 345-359 (2002). e-Print Archive: astro-ph/0105460. (2002).
72. “Observation of High-Energy Neutrinos Using Cerenkov Detectors Embedded Deep in Antarctic Ice” (with the AMANDA Collaboration, E. Andres, *et al.*), Nature **410** 441-443 (2001).

73. “The AMANDA Neutrino Telescope: Principle of Operation and First Results” (with the AMANDA Collaboration, E. Andres *et al.*), DESY-99-073 (Jun 1999). 36pp. *Astropart. Phys.* **13** 1-20 (2000).
74. “The AMANDA Neutrino Telescope And The Indirect Search For Dark Matter” (with the AMANDA Collaboration, F. Halzen *et al.*). MADPH-98-1050 (Apr 1998). 16pp. Talk given at 3rd International Symposium on Sources and Detection of Dark Matter in the Universe (DM 98), Santa Monica, CA (18-20 Feb 1998). Published in *Phys. Rept.* **307** 243-252 (1998).
75. “Digital Optical Module and System Design for a km-Scale Neutrino Detector in Ice” (with D. M. Lowder, K. H. Becker, D. Cowen, C. Guenther, V. Drozdov, A. Karle and H. Leich *et al.*). 10.1016/S1387-6473(98)00016-5 *New Astron. Rev.* **42**, 301 (1998).
76. “The AMANDA neutrino telescope and the indirect search for dark matter” (with F. Halzen *et al.* [AMANDA Collaboration]). hep-ex/9804007 10.1016/S0370-1573(98)00041-6 *Phys. Rept.* **307**, 243 (1998)
77. “UV and Optical Light Transmission Properties in Deep Ice at the South Pole” (with the AMANDA collaboration, P. Askebjør *et al.*), *Geophysical Research Letters* **24**, 11, 1355 (1997).
78. “Ultratransparent Ice as a Supernova Detector” (with F. Halzen and E. Zas), *Phys. Rev.* **D53**, n12, p. 7359 (1996).
79. “Optical Properties of the South Pole Ice at Depths Between 0.8 and 1 Kilometer” (with P. Askebjør *et al.*), *Science*, Vol. 267, p. 1147 (1995) (1995).
80. “Possibility that High-Energy Neutrino Telescopes Could Detect Supernovae” (with F. Halzen and E. Zas), *Phys. Rev.* **D49**, n4, p. 1758 (1994).
81. “Measurement of the Absolute Luminosity with the ALEPH Detector” (with the ALEPH Collaboration, D. Decamp *et al.*), *Z. Phys.* **C53** 375-390 (1992).
82. “Searches for New Particles in Z Decays Using the ALEPH Detector” (with the ALEPH Collaboration, D. Decamp *et al.*), *Phys. Rept.* **273** 253-340 (1992).
83. “An Investigation Into Intermittency” (with the ALEPH Collaboration, D. Decamp *et al.*), *Z. Phys.* **C53** 21-32 (1992).
84. “Improved measurements of electroweak parameters from Z decays into fermion pairs” (with D. Decamp *et al.* [ALEPH Collaboration]). 10.1007/BF01483868 *Z. Phys. C* **53**, 1 (1992).
85. “Measurement of the Charged Particle Multiplicity Distribution in Hadronic Z Decays” (with the ALEPH Collaboration, D. Decamp *et al.*), *Phys. Lett.* **B273** 181-192 (1991).

86. “Production and decay of charmed mesons at the Z resonance” (with D. Decamp *et al.* [ALEPH Collaboration]). 10.1016/0370-2693(91)90769-M
Phys. Lett. B **266**, 218 (1991).
87. “Search for the neutral Higgs bosons of the MSSM and other two doublet models” (with D. Decamp *et al.* [ALEPH Collaboration]). 10.1016/0370-2693(91)90083-3
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