

Curriculum Vitae

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Education

Ph.D. in Astrophysics	September 1996	Indiana University
Thesis:	<u>Muon Astronomy and Cosmic Ray Physics with the MACRO Detector</u> with Prof. Stuart Mufson	
M.A. in Astronomy	February 1992	Indiana University
B.S. in Physics	May 1989	Wright State University
Thesis:	<u>N-Body Simulations of Interacting Galaxies</u> with Prof. David Wood	

Research Experience

Current Sabbatical: (August 2007-August 2008)	Visiting Scientist Fermilab Neutrino Department MINOS Experiment Run Coordinator, NOVA Experiment DAQ development
Current Position:	Associate Professor (from July 2005, Asst. Prof from September 2000) University of Minnesota Duluth Department of Physics MINOS Experiment, Implementation of Detector Control System, Manager of Far Detector Operations, and convener of cosmic ray analysis group; Super-Kamiokande Experiment, Analysis of atmospheric neutrinos; Organization and implementation of the SNEWS (<u>S</u> upernova <u>E</u> arly <u>W</u> arning <u>S</u> ystem) SN neutrino coincidence network.
September 1996 to August 2000	Postdoctoral Research Associate Boston University Particle Astrophysics Group Super-Kamiokande and MACRO Experiments Analysis of atmospheric neutrinos, and cosmic-ray muons. Organization and implementation of the SNEWS SN neutrino coincidence network.
January 1991 to August 1996	Graduate Research Assistant Indiana University High Energy Astrophysics Group MACRO and GRACE Experiments Analysis of cosmic-ray muons and muon astronomy. Construction and operation of scintillator calibration system. Construction, operation, and analysis of air Cherenkov- underground muon coincidence experiment.
March 1989 to July 1989	Research Assistant Wright State University Physics Department Designed and built Al-Si plasma deposition system.

Hubble Space Telescope Proposals

Cycles 8–13 complete; HST Proposals 8404, 8646, 9108, 9429, 9808 & 10264 (PI J. Bahcall)
“Observing the next nearby supernova”,
a Target of Opportunity triggered by a SNEWS neutrino coincidence.

Teaching Experience

from September 2000 Assistant/Associate (from 2005) Professor
Univ. of Minnesota Duluth Dept. of Physics
Instrumentation, Experimental Methods, Intro Astronomy, General Physics,
Electromagnetism and Optics, Relativity and Quantum Mechanics,
Data Analysis, Astrophysics, and Seminar Classes

August 1989 to Dec. 1990 Associate Instructor
Indiana University Astronomy Department
Introductory Astronomy Classes

July 1988 to July 1989 Laboratory Technician
Wright State University Physics Department
Teaching lab and lecture demo equipment maintenance

March 1987 to May 1989 Teaching Assistant
Wright State University Physics Department
Introductory Physics and Astronomy labs and tutoring

University Service

July 2006 to present Director of Graduate Studies, Physics Department
January 2005 to present Elected member of MINOS Executive Committee
Sept. 2004 to present Member Curriculum Policies Committee, College of Science & Engineering
January 2003 to Dec. 2003 Member Undergraduate Research Opportunities Program selection committee
April 2002 to present University Representative to the Minnesota Space Grant Consortium
Oct. 2001 to present UMD Fencing Club faculty adviser
July 2001 to present Physics Department Library Representative
June 1999 to August 2000 Departmental Computer Committee, Boston Univ. Physics Dept.

Grants, Honors, Awards and Affiliations

Received a Research at Undergraduate Institutions grant (w/ Rik Gran, UMD) for three years from June 2007 from the NSF, for “Neutrino Studies with Experiments in the NuMI Beam”
Received a Council on Public Engagement Seed Grant from the UofM, for “Soudan Underground Lab Traveling Outreach Project”, 2005
McKnight Land Grant Professor, 2004-2006.
Received a Research at Undergraduate Institutions grant for three years from June 2004 from the NSF, for “Neutrino Oscillation Studies Using the MINOS and Super-Kamiokande Detectors”
Received a Grant-in-Aid of Research, Artistry, and Scholarship from the University of Minnesota, for “Neutrino Studies with the Super-K Experiment”, July 2003 through January, 2005
Received a Collaborative Research grant (w/ Kate Scholberg, MIT) for three years from July 2003 from the NSF, for “SNEWS, the SuperNova Early Warning System”
Received a Research at Undergraduate Institutions grant for three years from June 2001 from the NSF, for “Neutrino Oscillation Studies with MINOS and Super-K”

Received a Cottrell College Science Award from the Research Corporation, for two years from May 2001, to support Super-K research, for “Neutrino Oscillation Studies at the University of Minnesota Duluth”
Received a Grant-in-Aid of Research, Artistry, and Scholarship from the University of Minnesota, for “A Study of Neutrino Oscillations with the MINOS Experiment”, January 2001 through June, 2002
Asahi prize, 1998, with members of the Super-Kamiokande Collaboration for the “Discovery of the Finite Mass of Neutrinos”, Asahi-Shinbun Cultural Foundation, Inc., Tokyo, Japan
INFN Graduate Research Fellowship, Laboratori Nazionale del Gran Sasso, June 1992 to July 1993
Sigma Pi Sigma, 1988
National Merit Scholar, 1985; Wright State University Full-tuition Merit Scholarship, 1985-1989
Member of the American Astronomical Society, High Energy Astrophysics Division
Member of the American Physical Society, Divisions of Particles and Fields; Astrophysics

Recent Public Presentations

“Neutrinos Change Flavor Under Wisconsin”, McKnight Professorship talk at UMD, May 3 2006,
Astrophysics/High Energy Physics Seminar, Purdue University, January 30, 2007.
Seminar, University of Washington, July 11, 2008.

“Cosmic Ray Studies with the MINOS Detectors”, Poster at Neutrino 08, Christchurch, New Zealand, May 25-31 2008.

“Current NuMI/MINOS Oscillation Results”, invited talk at Rencontres de Moriond ElectroWeak, La Thuile, Italy, March 5 2008, proceedings are arXiv:0805.2317 [hep-ex].

“MINOS Atmospheric Neutrino Contained Events”, Poster at the 30th International Cosmic Ray Conference (ICRC), Merida, Mexico, July 3-11 2007, proceedings are FERMILAB-CONF-07-177-E.

“SNEWS, the Supernova Early Warning System”, Invited talk at the “Twenty Years after SN1987A” conference, Waikoloa, HI, 24 February 2007.

“First NuMI/MINOS $\nu_\mu \leftrightarrow \nu_\tau$ Oscillation Results”, Seminar at the Kamioka Observatory, 16 May 2006.

“Status of Atmospheric Neutrino Experiments”, Invited talk at “Topical Workshop on Physics at Henderson DUSEL”, Colorado State University, November 18-19 2005.

Also organized the Astrophysics Working Group session at this conference.

“Neutrino-induced muons observed with MINOS”, Talk at the 29th International Cosmic Ray Conference (ICRC), Pune, India, August 3-10 2005, proceedings are *hep-ex/0507010*

“High-Energy Neutrino Astronomy with the Super-Kamiokande Detector”, Poster at the 29th International Cosmic Ray Conference (ICRC), Pune, India, August 3-10 2005, proceedings are *astro-ph/0507051*

“Upward Showering Muons in Super-K”, Talk at the 29th International Cosmic Ray Conference (ICRC), Pune, India, August 3-10 2005,

talk at the High Energy Astrophysics Division meeting of the AAS, New Orleans, LA, Sept. 11 2004.

“Status of MINOS”, Invited talk at the Physics with Atmospheric Neutrinos and Neutrinos from Muon Storage Rings workshop, Mumbai, India August 1-2 2005

Papers Published in Refereed Journals

Primary Authorship

“High energy neutrino astronomy using upward-going muons in Super-Kamiokande-I”
Abe, K. *et al*, The Super-Kamiokande Collaboration, *Astrophysical Journal*, **652**, 198. (2006)

“A Measurement of Atmospheric Neutrino Oscillation Parameters by Super-Kamiokande I”
Ashie, Y. *et al*, The Super-Kamiokande Collaboration, *Phys. Rev. D*, **71** 112005. (2005)

“SNEWS: The SuperNova Early Warning System”
Antonionioli, P. *et al*, The SNEWS group, *New Journal of Physics*, **6** 114. (2004)

“Search for Dark Matter WIMPs using Upward Through-going Muons in Super-Kamiokande”
Desai, S., *et al*, The Super-Kamiokande Collaboration, *Phys. Rev. D* **70**, 083523. (2004)

“Search for the sidereal and solar diurnal modulations in the total MACRO muon data set”
Ambrosio, M., *et al*, The MACRO Collaboration, *Phys. Rev. D* **67**, 042002. (2003)

“Search for cosmic ray sources using muons detected by the MACRO experiment”
Ambrosio, M., *et al*, The MACRO Collaboration, *Astroparticle Physics* **18**, 615. (2003)

“The MACRO detector at Gran Sasso”
Ambrosio, M., *et al*, The MACRO Collaboration, *Nucl. Instr. & Meth.*, **A486**, 663. (2002)

“Neutrino-induced upward-going stopping muons in Super-Kamiokande”
Fukuda, Y., *et al*, The Super-Kamiokande Collaboration, *Phys. Lett.* **B467**, 185. (1999)

“Measurement of the flux and zenith angle distribution of upward through-going muons by Super-Kamiokande”
Fukuda, Y., *et al*, The Super-Kamiokande Collaboration, *Phys. Rev. Lett.* **82**, 2644. (1999)

“Calibration of Super-Kamiokande using an electron LINAC”
Nakahata, M., *et al*, The Super-Kamiokande Collab., *Nucl. Instr. & Meth.* **A421** 113. (1999)

“Observation of the shadowing of cosmic rays by the Moon using a deep underground detector”
Ambrosio, M., *et al*, The MACRO Collaboration, *Phys. Rev. D* **59** 012003. (1999)

“Seasonal variations in the underground muon intensity as seen by MACRO”
Ambrosio, M., *et al*, The MACRO Collaboration, *Astroparticle Physics*, **7**, 109. (1997)

“Coincident observation of air cherenkov light by a surface array and muon bundles by a deep underground detector”, Levin, D.S., Barish, B.C., Diehl, E., Habig, A.T., Handel, J., Kertzman, M., Mufson, S., Musser, J., Nutter, S., Sembroski, G., Tarlé, G., and the MACRO Collab., *Phys. Rev. D*, **50**, 3046. (1994)

“Muon astronomy with the MACRO detector”
Ahlen, S., *et al*, The MACRO Collaboration, *Astrophysical Journal*, **412**, 301. (1993)

“GRACE: A prototype for the Gran Sasso Air Cherenkov Experiment”
Levin, D.S., Barish, B.C., Diehl, E., Habig, A.T., Handel, J., Kertzman, M., Mufson, S., Musser, J., Nutter, S., Sembroski, G., and Tarlé, G., *Nucl. Instr. & Meth.*, **A322**, 101. (1992)

Contributed Authorship

“Study of muon neutrino disappearance using the Fermilab Main Injector neutrino beam”

Adamson, P. *et al*, The MINOS Collaboration, *Phys. Rev. D*, **77** 072002. (2008)

“Measurement of the atmospheric muon charge ratio at TeV energies with MINOS”

Adamson, P. *et al*, The MINOS Collaboration, *Phys. Rev. D*, **76** 052003. (2007)

“Charge-Separated Atmospheric Neutrino-Induced Muons in the MINOS Far Detector”

Adamson, P. *et al*, The MINOS Collaboration, *Phys. Rev. D*, **75**, 092003. (2007)

“Study of TeV neutrinos with upward showering muons in Super-Kamiokande”

Desai, S. *et al*, The Super-K Collaboration, *Astroparticle Physics* **29**, 42. (2007)

“Search for Neutral Q-balls in Super-Kamiokande II”

Takenaga, Y. *et al*, The Super-K Collaboration, *Phys. Lett.* **B647**, 18. (2007)

“Observation of muon neutrino disappearance with the MINOS detectors in the NuMI neutrino beam”

Michael, D.G. *et al*, The MINOS Collaboration, *Phys. Rev. Lett.*, **97**, 191801. (2006)

“A Measurement of Atmospheric Neutrino Flux Consistent with Tau Neutrino Appearance”

Abe, K. *et al*, The Super-Kamiokande Collaboration, *Phys. Rev. Lett.*, **97**, 171801. (2006)

“Search for Diffuse Astrophysical Neutrino Flux Using Ultra-High Energy Upward-Going Muons in Super-Kamiokande I”

Swanson, M.E.C. *et al*, The Super-Kamiokande Collaboration, *Astrophysical Journal*, **652**, 206. (2006)

“Three Flavor Neutrino Oscillation Analysis of Atmospheric Neutrinos in Super-Kamiokande”

Hosaka, J. *et al*, The Super-Kamiokande Collaboration, *Phys. Rev. D*, **74**, 032002. (2006)

“First Observations of Separated Atmospheric Muon Neutrino and Muon Anti-Neutrino Events in the MINOS Detector”

Adamson, P. *et al*, The MINOS Collaboration, *Phys. Rev. D*, **73**, 072002. (2006)

“Observation of the Anisotropy of 10 TeV Primary Cosmic Ray Nuclei Flux with the Super-Kamiokande-I Detector”

Guillian, G. *et al*, The Super-Kamiokande Collaboration, *Phys. Rev. D*, **75**, 062003. (2007).

“Search for Nucleon Decay Via Modes Favored by Supersymmetric Grand Unification Models in Super-Kamiokande-I”

Kobayashi, K. *et al*, The Super-Kamiokande Collaboration, *Phys. Rev. D*, **72**, 052007. (2005)

“Evidence for an oscillatory signature in atmospheric neutrino oscillation”

Ashie, Y., *et al*, The Super-Kamiokande Collaboration, *Phys. Rev. Lett.*, **93**, 101801. (2004)

“Moon and Sun shadowing effect in the MACRO detector”

Ambrosio, M., *et al*, The MACRO Collaboration, *Astroparticle Physics* **20** 145. (2003)

“Search for neutrinos from gamma-ray bursts using Super-Kamiokande”

Fukuda, S., *et al*, The Super-Kamiokande Collaboration, *Astrophysical Journal* **578**, 317. (2002)

- “Search for diffuse neutrino flux from astrophysical sources with MACRO”
Ambrosio, M., *et al*, The MACRO Collaboration, *Astroparticle Physics*, **19** 1. (2003)
- “Matter effects in upward-going muons and sterile neutrino oscillations”
Ambrosio, M., *et al*, The MACRO Collaboration, *Phys. Lett.* **B517**, 59. (2001)
- “Neutrino astronomy with the MACRO detector”
Ambrosio, M., *et al*, The MACRO Collaboration, *Astrophysical Journal* **546**, 1038. (2001)
- “Tau neutrinos favored over sterile neutrinos in atmospheric muon neutrino oscillations”
Fukuda, S., *et al*, The Super-Kamiokande Collaboration, *Phys. Rev. Lett.* **85**, 3999. (2000)
- “Low energy atmospheric muon neutrinos in MACRO”
Ambrosio, M., *et al*, The MACRO Collaboration, *Phys. Lett.* **B478**, 5. (2000)
- “Search for proton decay through $p \rightarrow \bar{\nu}K^+$ in a large water Cherenkov detector”
Hayato, Y., *et al*, The Super-Kamiokande Collaboration, *Phys. Rev. Lett.* **83**, 1529. (1999)
- “Observation of the east-west anisotropy of the atmospheric neutrino flux”
Futagami, T., *et al*, The Super-Kamiokande Collaboration, *Phys. Rev. Lett.* **82**, 5194. (1999)
- “Evidence for oscillation of atmospheric neutrinos”
Fukuda, Y., *et al*, The Super-Kamiokande Collaboration, *Phys. Rev. Lett.* **81**, 1562. (1998)
- “Measurement of the neutrino-induced upgoing muon flux using MACRO”
Ambrosio, M., *et al*, The MACRO Collaboration, *Phys. Lett.* **B434** 451. (1998)
- “Limits on dark matter WIMPS using upward-going muons in the MACRO detector”
Ambrosio, M., *et al*, The MACRO Collaboration, *Phys. Rev. D*, **60**, 082002. (1999).
- “Search for proton decay via $p \rightarrow e^+\pi^0$ in a large water Cherenkov detector”
Shiozawa, M., *et al*, The Super-Kamiokande Collaboration, *Phys. Rev. Lett.* **81**, 3319. (1998)
- “Study of the atmospheric neutrino flux in the multi-GeV energy range”
Fukuda, Y., *et al*, The Super-Kamiokande Collaboration, *Phys. Lett.* **B436**, 33. (1998)
- “Measurement of a small atmospheric muon-neutrino / electron-neutrino ratio”
Fukuda, Y., *et al*, The Super-Kamiokande Collaboration, *Phys. Lett.* **B433**, 9. (1998)
- “The observation of upgoing charged particles produced by high energy muons in underground detectors”
Ambrosio, M., *et al*, The MACRO Collaboration, *Astroparticle Physics* **9**, 105. (1998)
- “Real time supernova neutrino burst detection with MACRO”
Ambrosio, M., *et al*, The MACRO Collaboration, *Astroparticle Physics* **8**, 123. (1998)
- “Atmospheric neutrino flux measurements using upgoing muons”
Ambrosio, M., *et al*, The MACRO Collaboration, *Phys. Lett.* **B357**, 481. (1995)
- “Vertical muon intensity measured with MACRO at the Gran Sasso Laboratory”
Ambrosio, M., *et al*, The MACRO Collaboration, *Phys. Rev. D*, **52**, 3793. (1995)

“The first supermodule of the MACRO detector at Gran Sasso”
Ahlen, S., *et al*, The MACRO Collaboration, *Nucl. Instr. & Meth.*, **A324**, 337. (1993)

“Search for neutrino bursts from collapsing stars with the MACRO Detector”
Ahlen, S., *et al*, The MACRO Collaboration, *Astroparticle Phys.*, **1**, 11. (1992)

Other Publications

“Solar neutrino measurements in Super-Kamiokande-II”
Cravens, J.P., *et al*, The Super-K Collaboration, *Phys. Rev. D*, **78**, 032002. (2008)

“Search for Matter-Dependent Atmospheric Neutrino Oscillations in Super-Kamiokande”
Abe, K., *et al*, The Super-K Collaboration, *Phys. Rev. D*, **77**, 052001. (2008)

“Measurement of neutrino velocity with the MINOS detectors and NuMI neutrino beam”
Adamson, P., *et al*, The MINOS Collaboration, *Phys. Rev. D*, **76**, 072005. (2007)

“Search for Supernova Neutrino Bursts at Super-Kamiokande”
Ikeda, M., *et al*, The Super-Kamiokande Collaboration, *Astrophysical Journal*, **669**, 519. (2007)

“Solar neutrino measurements in Super-Kamiokande-I”
Hosaka, J., *et al*, The Super-Kamiokande Collaboration, *Phys. Rev. D*, **73**, 112001. (2006)

“Measurements of atmospheric muon neutrino oscillations, global analysis of the data collected with the MACRO detector”
Ambrosio, M., *et al*, The MACRO Collaboration, *Eur. J. Phys.* **C36**, 323. (2004)

“Search for stellar gravitational collapses with the MACRO detector”
Ambrosio, M., *et al*, The MACRO Collaboration, *Eur. J. Phys.* **C37**, 265. (2004)

“The cosmic ray proton, helium and CNO fluxes in the 100 TeV energy region from TeV muons and EAS atmospheric Cherenkov light observations of MACRO and EAS-TOP”
Aglietta, M. *et al*, Ambrosio, M., *et al*, The EASTOP & MACRO Collaborations, *Astroparticle Physics* **21** 223. (2004)

“The primary cosmic ray composition between 10^{15} and 10^{16} eV from Extensive Air Showers electromagnetic and TeV muon data”
Aglietta, M. *et al*, Ambrosio, M., *et al*, The EASTOP & MACRO Collaborations, *Astroparticle Physics* **20** 641. (2004)

“Limit On the Neutrino Magnetic Moment Using 1496 Days of Super-Kamiokande-I Solar Neutrino Data”
Liu, D.W., *et al*, The Super-K Collaboration, *Phys. Rev. Lett.* **93**, 021802. (2004)

“Atmospheric neutrino oscillations from upward throughgoing muon multiple scattering in MACRO”
Ambrosio, M., *et al*, The MACRO Collaboration, *Phys. Lett.* **B566**, 35. (2003)

“Precise Measurement of the Solar Neutrino Day/Night and Seasonal Variation in Super-Kamiokande-I”
Smy, M., *et al*, The Super-K Collaboration, *Phys. Rev. D* **69** 011104. (2004)

- “A search for periodic modulations of the solar neutrino flux in Super-Kamiokande-I”
Yoo, J., *et al*, The Super-K Collaboration, *Phys. Rev. D* **68** 092002. (2003)
- “Search for $\bar{\nu}_e$ from the Sun at Super-Kamiokande-I”
Gando, Y., *et al*, The Super-K Collaboration, *Phys. Rev. Lett.* **90**, 171302. (2003)
- “The Super-Kamiokande Detector”
Fukuda, S., *et al*, The Super-K Collaboration, *Nucl. Instr. & Meth.* **A501**, 418. (2003)
- “Search for Supernova Relic Neutrinos at Super-Kamiokande”
Malek, M., *et al*, The Super-K Collaboration, *Phys. Rev. Lett.* **90**, 061101. (2003)
- “Measurement of the residual energy of muons in the Gran Sasso laboratories”
Ambrosio, M., *et al*, The MACRO Collaboration, *Astroparticle Physics* **19**, 313. (2003)
- “Search for Nucleon Decays induced by GUT Magnetic Monopoles with the MACRO Experiment”
Ambrosio, M., *et al*, The MACRO Collaboration, *Euro. Phys. J.* **C26**, 163. (2002)
- “Final results of magnetic monopole searches with the MACRO experiment”
Ambrosio, M., *et al*, The MACRO Collaboration, *Euro. Phys. J.* **C25**, 511. (2002)
- “Determination of Solar Neutrino Oscillation Parameters using 1496 Days of Super-Kamiokande-I Data”
Fukuda, S., *et al*, The Super-K Collaboration, *Phys. Lett.* **B539**, 179. (2002)
- “Muon energy estimate through multiple scattering with the MACRO detector”
Ambrosio, M., *et al*, The MACRO Collaboration, *Nucl. Instr. & Meth.*, **A492**, 376. (2002)
- “A combined analysis technique for the search for fast magnetic monopoles with the MACRO detector”
Ambrosio, M., *et al*, The MACRO Collaboration, *Astroparticle Physics* **18**, 27. (2002)
- “Solar 8B and hep Neutrino Measurements from 1258 Days of Super-Kamiokande Data”
Fukuda, S., *et al*, The Super-K Collaboration, *Phys. Rev. Lett.* **86**, 5651. (2001)
- “Constraints on Neutrino Oscillations Using 1258 Days of Super-Kamiokande Solar Neutrino Data”
Fukuda, S., *et al*, The Super-K Collaboration, *Phys. Rev. Lett.* **86**, 5656. (2001)
- “ ^{16}N as a calibration source for Super-Kamiokande”
Blaufuss, E., *et al*, The Super-Kamiokande Collab., *Nucl. Instr. & Meth. A* **458** 636 (2001).
- “A search for lightly ionizing particles with the MACRO detector”
Ambrosio, M., *et al*, The MACRO Collaboration, *Phys. Rev. D* **62** 052003. (2000)
- “Nuclearite search with the MACRO detector at Gran Sasso”
Ambrosio, M., *et al*, The MACRO Collaboration, *Euro. Phys. J.* **C13**, 453. (2000)
- “Measurement of radon concentrations at Super-Kamiokande”
Takeuchi, Y., *et al*, The Super-Kamiokande Collaboration, *Phys. Lett.* **B452**, 418. (1999)
- “High statistics measurement of the underground muon pair separation at Gran Sasso”
Ambrosio, M., *et al*, The MACRO Collaboration, *Phys. Rev. D* **60** 032001. (1999)

- “Measurement of the solar neutrino energy spectrum using neutrino-electron scattering”
Fukuda, Y., *et al*, The Super-Kamiokande Collaboration, *Phys. Rev. Lett.* **82**, 2430. (1999)
- “Constraints on neutrino oscillation parameters from the measurement of day-night solar neutrino fluxes at Super-Kamiokande”
Fukuda, Y., *et al*, The Super-Kamiokande Collaboration, *Phys. Rev. Lett.* **82**, 1810. (1998)
- “Measurements of the solar neutrino flux from Super-Kamiokande’s first 300 days”
Fukuda, Y., *et al*, The Super-Kamiokande Collaboration, *Phys. Rev. Lett.* **80**, 1158. (1998)
- “Measurement of the energy spectrum of underground muons at Gran Sasso with a TRD”
Ambrosio, M., *et al*, The MACRO Collaboration, *Astroparticle Physics* **10**, 11. (1999)
- “Magnetic monopole search with the MACRO detector at Gran Sasso”
Ambrosio, M., *et al*, The MACRO Collaboration, *Phys. Lett.* **B406**, 249. (1997)
- “High energy cosmic ray physics with the MACRO detector at Gran Sasso: Part I. Analysis Methods and Experimental Results” Ambrosio, M., *et al*, The MACRO Collaboration, *Phys. Rev. D*, **56**, 1407. (1996)
- “High energy cosmic ray physics with the MACRO detector at Gran Sasso: Part II. Primary Spectra and Composition” Ambrosio, M., *et al*, The MACRO Collaboration, *Phys. Rev. D*, **56**, 1418. (1996)
- “The performance of MACRO liquid scintillator in the search for magnetic monopoles with $10^{-3} < \beta < 1$ ” Ambrosio, M., *et al*, The MACRO Collaboration, *Astroparticle Physics*, **6**, 113. (1996)
- “Performance of the MACRO streamer tube system in the search for magnetic monopoles”
Ambrosio, M., *et al*, The MACRO Collaboration, *Astroparticle Physics*, **4**, 33. (1995)
- “Study of the primary cosmic ray composition around the knee of the energy spectrum”
Aglietta, M., *et al*, The MACRO and EASTOP Collaborations, *Phys. Lett.* **B337**, 376. (1994)
- “Search for slow moving magnetic monopoles with the MACRO detector”
Ahlen, S., *et al*, The MACRO Collaboration, *Phys. Rev. Lett.*, **72**, 608. (1994)
- “Search for nuclearites using the MACRO detector”
Ahlen, S., *et al*, The MACRO Collaboration, *Phys. Rev. Lett.*, **69**, 1860. (1992)
- “Measurement of the decoherence function with the MACRO detector at Gran Sasso”
Ahlen, S., *et al*, The MACRO Collaboration, *Phys. Rev. D*, **46**, 4836. (1992)
- “Study of the ultra-high energy primary cosmic ray composition with the MACRO experiment”
Ahlen, S., *et al*, The MACRO Collaboration, *Phys. Rev. D*, **46**, 895. (1992)