

Curriculum Vitae

Dr. Nathaniel James Tagg

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Education

B.Sc: University of Lethbridge, B.Sc. (Great Distinction) 1993.

M.Sc: University of Guelph, Ontario, Canada. 1996.
(Guelph-Waterloo Program for Graduate Studies in Physics)

Ph.D: University of Guelph, Ontario, Canada, 2001.
(Guelph-Waterloo Program for Graduate Studies in Physics)
Thesis supervisor: J. J. Simpson.
Thesis: "The ^8Li Calibration Source and Through-Going Muons in the Sudbury Neutrino Observatory"

Employment

2001-2005: Postdoctoral research assistant at Oxford University, UK

2005-2008: Visiting Scientist at Tufts University

2008-2013: Assistant Professor of Physics at Otterbein University

2013-2019: Associate Professor of Physics at Otterbein University

2015-2020: Physics Department Chair at Otterbein University

2019-present: Professor at Otterbein University

Grants and Support

- National Sciences and Engineering Council Post Graduate Scholarship (NSERC PGS A), 1993-95
- Nathaniel Tagg (PI): "RUI: Neutrino Experiments with the NuMI Beam." National Science Foundation, program for Research at Undergraduate Institutions. ~ \$140,000 to support research in experimental particle physics, including stipends for students. 2009-2012.
- Nathaniel Tagg (PI): "RUI: Neutrino Experiments at Fermilab" (similar to above) 2013-2015.
- Nathaniel Tagg (PI): "RUI: Neutrino Experiments at Fermilab" (similar to above) 2016-2018
- Nathaniel Tagg (PI): Visitor support for extended travel to Fermilab to work on MINERvA project. Roughly \$6800 to support PI and two undergraduate students for one month. Awarded and used June 2011.

Teaching

Introductory Physics (Algebra-based, Phys 121,122,123), Otterbein

Introductory Physics (Calculus based, with lab) (Phys 1500,1600), Otterbein

Introductory Physics Laboratory (Phys 141, 143, 1200), Otterbein

Classical Mechanics I and II (Phys 3000, 305), Otterbein

Nuclear and Particle Physics (Phys 440, Phys 4901)

Electronics (Phys 350, Phys 3700), Otterbein

Advanced Physics Laboratory (Phys 320/420, 3500), Otterbein

Modern Physics and Modern Physics laboratory (Phys 2700)

Physics for Future Presidents - phenomenological description of politically important physics topics for general education (INST 2404), Otterbein

Revolutions - relativity and quantum mechanics for a general education (INST 240), Otterbein

Other Teaching Experience

Advisor for graduate students, Tufts, 2006-7

Deputy Supervisor for graduate student, Oxford, 2003-5.

3rd year particle physics Tutor for Magdalen College, Oxford University, 2002.

3rd year particle physics Tutor for Queens' college, Oxford University, 2001.

Laboratory demonstrator, physics course (Electricity and Magnetism lab), Oxford University, 2001-02

Graduate Teaching Assistant 1993-2000.

Notable Service to School

- Advisor to students (2008-present)
- Science lecture series committee (2009-present)
- Participated in overhaul of university curriculum (2010-11) - change from quarters to semesters
- Institutional effectiveness committee (2009-11)
- Curriculum committee (2010-12)
- Personnel/Curriculum hiring subcommittee (2011)
- Teaching/learning/technology committee (2011-12)
- University senator (2008-present)
- Departmental assessment representative (2009-2015)
- Department chair (2015-present)
- Supervised overhaul of physics curriculum (2016-17) - change from 4-credit-hour model to 3-credit
- Arts & Sciences school personnel evaluation committee (2017-2018)

Professional Memberships and Service

Referee: Nuclear Instruments and Methods A, American Journal of Physics

Member: American Physical Society, American Association of Physics Teachers

Member: American Association of University Professors

Current Research Affiliations

MINOS+ Experiment Collaboration (legacy author, 2001-)

MINER ν A Experiment Collaboration (full author 2008-2015, limited author 2015-onward)

MicroBooNE Experiment Collaboration (2014-)

DUNE Experiment Collaboration (2017-)

Professional Development

AAPT New Faculty Workshop, 2009

Member, Otterbein's Center for Teaching and Learning "New Faculty Teaching and Learning Community", 2009-10

Member, Otterbein's Center for Teaching and Learning "STEM Professional Learning Community", 2014-15

Participant, Partnership for Integration of Computation into Undergraduate Physics (PICUP), 2017-

Publications

Papers in Refereed Journals

(Newest first. The PDF version of this document includes hyperlinks.)

1. **"Measurement of differential cross sections for ν_μ -Ar charged-current interactions with protons and no pions in the final state with the MicroBooNE detector"**
P. Abratenko *et al.* [MicroBooNE Collaboration].
arXiv:2010.02390 [hep-ex]
DOI:10.1103/PhysRevD.102.112013
Phys. Rev. D **102**, no. 11, 112013 (2020)
FERMILAB-PUB-20-505-AD-ND-SCD-TD
2. **"Measurement of space charge effects in the MicroBooNE LArTPC using cosmic muons"**
P. Abratenko *et al.* [MicroBooNE Collaboration].
arXiv:2008.09765 [physics.ins-det]
DOI:10.1088/1748-0221/15/12/P12037
JINST **15**, no. 12, P12037 (2020)
FERMILAB-PUB-20-367-ND
3. **"Precision Constraints for Three-Flavor Neutrino Oscillations from the Full MINOS+ and MINOS Dataset"**
P. Adamson *et al.* [MINOS+ Collaboration].
arXiv:2006.15208 [hep-ex]
DOI:10.1103/PhysRevLett.125.131802
Phys. Rev. Lett. **125**, no. 13, 131802 (2020)
FERMILAB-PUB-20-253-ND
4. **"First Measurement of Differential Charged Current Quasielastic-like ν_μ -Argon Scattering Cross Sections with the MicroBooNE Detector"**
P. Abratenko *et al.* [MicroBooNE Collaboration].
arXiv:2006.00108 [hep-ex]

DOI:10.1103/PhysRevLett.125.201803
 Phys. Rev. Lett. **125**, no. 20, 201803 (2020)
 FERMILAB-PUB-20-226-ND

5. **“Improved Constraints on Sterile Neutrino Mixing from Disappearance Searches in the MINOS, MINOS+, Daya Bay, and Bugey-3 Experiments”**
 P. Adamson *et al.* [MINOS+ and Daya Bay Collaborations].
 arXiv:2002.00301 [hep-ex]
 DOI:10.1103/PhysRevLett.125.071801
 Phys. Rev. Lett. **125**, no. 7, 071801 (2020)
 FERMILAB-PUB-20-054-ND
6. **“Search for Heavy Neutral Leptons Decaying into Muon-Pion Pairs in the MicroBooNE Detector”**
 P. Abratenko *et al.* [MicroBooNE Collaboration].
 arXiv:1911.10545 [hep-ex]
 DOI:10.1103/PhysRevD.101.052001
 Phys. Rev. D **101**, no. 5, 052001 (2020)
 FERMILAB-PUB-19-581-ND
7. **“Reconstruction and Measurement of $\mathcal{O}(100)$ MeV Energy Electromagnetic Activity from $\pi^0 \rightarrow \gamma\gamma$ Decays in the MicroBooNE LArTPC”**
 C. Adams *et al.* [MicroBooNE Collaboration].
 arXiv:1910.02166 [hep-ex]
 DOI:10.1088/1748-0221/15/02/P02007
 JINST **15**, no. 02, P02007 (2020)
 FERMILAB-PUB-19-512-ND-SCD
8. **“A method to determine the electric field of liquid argon time projection chambers using a UV laser system and its application in MicroBooNE”**
 C. Adams *et al.* [MicroBooNE Collaboration].
 arXiv:1910.01430 [physics.ins-det]
 DOI:10.1088/1748-0221/15/07/P07010
 JINST **15**, no. 07, P07010 (2020)
 FERMILAB-PUB-19-496-ND
9. **“Calibration of the charge and energy loss per unit length of the MicroBooNE liquid argon time projection chamber using muons and protons”**
 C. Adams *et al.* [MicroBooNE Collaboration].
 arXiv:1907.11736 [physics.ins-det]
 DOI:10.1088/1748-0221/15/03/P03022
 JINST **15**, no. 03, P03022 (2020)
 FERMILAB-PUB-19-357-ND
10. **“First Measurement of Inclusive Muon Neutrino Charged Current Differential Cross Sections on Argon at $E_\nu \sim 0.8$ GeV with the MicroBooNE Detector”**
 P. Abratenko *et al.* [MicroBooNE Collaboration].
 arXiv:1905.09694 [hep-ex]
 DOI:10.1103/PhysRevLett.123.131801
 Phys. Rev. Lett. **123**, no. 13, 131801 (2019)
 FERMILAB-PUB-19-235-ND
11. **“Design and construction of the MicroBooNE Cosmic Ray Tagger system”**
 C. Adams *et al.* [MicroBooNE Collaboration].
 arXiv:1901.02862 [physics.ins-det]
 DOI:10.1088/1748-0221/14/04/P04004
 JINST **14**, no. 04, P04004 (2019)
 FERMILAB-PUB-18-678-ND
12. **“Rejecting cosmic background for exclusive charged current quasi elastic neutrino interaction studies with Liquid Argon TPCs; a case study with the MicroBooNE detector”**

- C. Adams *et al.* [MicroBooNE Collaboration].
arXiv:1812.05679 [physics.ins-det]
DOI:10.1140/epjc/s10052-019-7184-7
Eur. Phys. J. C **79**, no. 8, 673 (2019)
FERMILAB-PUB-18-677-E
13. **“First measurement of ν_μ charged-current π^0 production on argon with the MicroBooNE detector”**
C. Adams *et al.* [MicroBooNE Collaboration].
arXiv:1811.02700 [hep-ex]
DOI:10.1103/PhysRevD.99.091102
Phys. Rev. D **99**, no. 9, 091102 (2019)
FERMILAB-PUB-18-608-ND
 14. **“Deep neural network for pixel-level electromagnetic particle identification in the MicroBooNE liquid argon time projection chamber”**
C. Adams *et al.* [MicroBooNE Collaboration].
arXiv:1808.07269 [hep-ex]
DOI:10.1103/PhysRevD.99.092001
Phys. Rev. D **99**, no. 9, 092001 (2019)
FERMILAB-PUB-18-231-ND
 15. **“Comparison of ν_μ -Ar multiplicity distributions observed by MicroBooNE to GENIE model predictions”**
C. Adams *et al.* [MicroBooNE Collaboration].
arXiv:1805.06887 [hep-ex]
DOI:10.1140/epjc/s10052-019-6742-3
Eur. Phys. J. C **79**, no. 3, 248 (2019)
FERMILAB-PUB-18-077-ND
 16. **“Ionization Electron Signal Processing in Single Phase LArTPCs II. Data/Simulation Comparison and Performance in MicroBooNE”** C. Adams *et al.* [MicroBooNE Collaboration]. arXiv:1804.02583 [physics.ins-det] Submitted to Phys.Rev.D
 17. **“Ionization Electron Signal Processing in Single Phase LArTPCs I. Algorithm Description and Quantitative Evaluation with MicroBooNE Simulation”** C. Adams *et al.* [MicroBooNE Collaboration]. arXiv:1802.08709 [physics.ins-det] Awaiting submission.
 18. **“Measurement of total and differential cross sections of neutrino and antineutrino coherent π^\pm production on carbon”** A. Mislivec *et al.* [MINERvA Collaboration]. Phys. Rev. D **97**, no. 3, 032014 (2018)
 19. **“The Pandora multi-algorithm approach to automated pattern recognition of cosmic-ray muon and neutrino events in the MicroBooNE detector”** R. Acciarri *et al.* [MicroBooNE Collaboration]. Eur. Phys. J. C **78**, no. 1, 82 (2018)
 20. **“Measurement of cosmic-ray reconstruction efficiencies in the MicroBooNE LArTPC using a small external cosmic-ray counter”** R. Acciarri *et al.* [MicroBooNE Collaboration]. JINST **12**, no. 12, P12030 (2017)
 21. **“Noise Characterization and Filtering in the MicroBooNE Liquid Argon TPC”** R. Acciarri *et al.* [MicroBooNE Collaboration]. arXiv:1705.07341 [physics.ins-det] JINST **12**, no. 08, P08003 (2017)
 22. **“Design and Construction of the MicroBooNE Detector”** R. Acciarri *et al.* [MicroBooNE Collaboration]. arXiv:1612.05824 [physics.ins-det] JINST **12**, no. 02, P02017 (2017)
 23. **“Convolutional Neural Networks Applied to Neutrino Events in a Liquid Argon Time Projection Chamber”** R. Acciarri *et al.* [MicroBooNE Collaboration]. arXiv:1611.05531 [physics.ins-det] JINST **12**, no. 03, P03011 (2017)
 24. **“Constraints on Large Extra Dimensions from the MINOS Experiment”** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. D **94**, no. 11, 111101 (2016)

25. **“Measurement of single π^0 production by coherent neutral-current ν Fe interactions in the MINOS Near Detector”** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. D **94**, no. 7, 072006 (2016)
26. **“Limits on Active to Sterile Neutrino Oscillations from Disappearance Searches in the MINOS, Daya Bay, and Bugey-3 Experiments”** P. Adamson *et al.* [Daya Bay and MINOS Collaborations]. Phys. Rev. Lett. **117**, no. 15, 151801 (2016), Addendum: [Phys. Rev. Lett. **117**, no. 20, 209901 (2016)]
27. **“Search for Sterile Neutrinos Mixing with Muon Neutrinos in MINOS”** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. Lett. **117**, no. 15, 151803 (2016)
28. **“Measurement of single π^0 production by coherent neutral-current ν Fe interactions in the MINOS Near Detector”** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. D **94**, no. 7, 072006 (2016)
29. **“Limits on Active to Sterile Neutrino Oscillations from Disappearance Searches in the MINOS, Daya Bay, and Bugey-3 Experiments”** P. Adamson *et al.* [Daya Bay and MINOS Collaborations]. Phys. Rev. Lett. **117**, no. 15, 151801 (2016)
30. **“Search for Sterile Neutrinos Mixing with Muon Neutrinos in MINOS”** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. Lett. **117**, no. 15, 151803 (2016)
31. **“Evidence for Neutral-Current Diffractive π^0 Production from Hydrogen in Neutrino Interactions on Hydrocarbon”** J. Wolcott *et al.* [MINERvA Collaboration]. Phys. Rev. Lett. **117**, no. 11, 111801 (2016)
32. **“Measurement of the Multiple-Muon Charge Ratio in the MINOS Far Detector”** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. D **93**, no. 5, 052017 (2016)
33. **“Measurement of Partonic Nuclear Effects in Deep-Inelastic Neutrino Scattering using MINERvA”** J. Mousseau *et al.* [MINERvA Collaboration]. Phys. Rev. D **93**, no. 7, 071101 (2016)
34. **“Measurement of Neutrino Flux from Neutrino-Electron Elastic Scattering”** J. Park *et al.* [MINERvA Collaboration]. arXiv:1512.07699 [physics.ins-det] Phys. Rev. D **93**, no. 11, 112007 (2016)
35. **“Identification of nuclear effects in neutrino-carbon interactions at low three-momentum transfer”** P. A. Rodrigues *et al.* [MINERvA Collaboration]. Phys. Rev. Lett. **116**, 071802 (2016)
36. **“Measurement of electron neutrino quasielastic and quasielasticlike scattering on hydrocarbon at $\langle E_\nu \rangle = 3.6$ GeV”** J. Wolcott *et al.* [MINERvA Collaboration]. Phys. Rev. Lett. **116**, no. 8, 081802 (2016)
37. **“The Detector System of The Daya Bay Reactor Neutrino Experiment”** F. P. An *et al.* [Daya Bay Collaboration]. arXiv:1508.03943 [physics.ins-det] Nucl. Instrum. Meth. A **811**, 133 (2016)
38. **“The NuMI Neutrino Beam”** P. Adamson *et al.* arXiv:1507.06690 [physics.acc-ph] Nucl. Instrum. Meth. A **806**, 279 (2016)
39. **“Precision measurement of the speed of propagation of neutrinos using the MINOS detectors”** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. D **92**, no. 5, 052005 (2015)
40. **“Observation of Seasonal Variation of Atmospheric Multiple-Muon Events in the MINOS Near and Far Detectors”** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. D **91**, no. 11, 112006 (2015)
41. **“Single neutral pion production by charged-current $\bar{\nu}_\mu$ interactions on hydrocarbon at $\langle E_\nu \rangle = 3.6$ GeV”** T. Le *et al.* [MINERvA Collaboration]. Phys. Lett. B **749**, 130 (2015)
42. **“A Proposal for a Three Detector Short-Baseline Neutrino Oscillation Program in the Fermilab Booster Neutrino Beam”** M. Antonello *et al.* [MicroBooNE and LAr1-ND and ICARUS-WA104 Collaborations]. arXiv:1503.01520 [physics.ins-det]
43. **“MINERvA neutrino detector response measured with test beam data”** L. Aliaga *et al.* [MINERvA Collaboration]. arXiv:1501.06431 [physics.ins-det] Nucl. Instrum. Meth. A **789**, 28 (2015)
44. **“Study of quasielastic scattering using charged-current ν_μ -iron interactions in the MINOS near detector”** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. D **91**, no. 1, 012005 (2015)

45. **“Measurement of muon plus proton final states in ν_μ interactions on hydrocarbon at $\langle E_\nu \rangle = 4.2$ GeV”** T. Walton *et al.* [MINERvA Collaboration]. Phys. Rev. D **91**, no. 7, 071301 (2015)
46. **“Measurement of Coherent Production of π^\pm in Neutrino and Antineutrino Beams on Carbon from E_ν of 1.5 to 20 GeV”** A. Higuera *et al.* [MINERvA Collaboration]. Phys. Rev. Lett. **113**, no. 26, 261802 (2014)
47. **“Observation of muon intensity variations by season with the MINOS Near Detector”** P. Adamson *et al.* Phys. Rev. D **90**, no. 1, 012010 (2014)
48. **“Charged pion production in ν_μ interactions on hydrocarbon at $\langle E_\nu \rangle = 4.0$ GeV”** B. Eberly *et al.* [MINERvA Collaboration]. Phys. Rev. D **92**, no. 9, 092008 (2015)
49. **“Measurement of Ratios of ν_μ Charged-Current Cross Sections on C, Fe, and Pb to CH at Neutrino Energies 2-20 GeV”** B. G. Tice *et al.* [MINERvA Collaboration]. Phys. Rev. Lett. **112**, no. 23, 231801 (2014)
50. **“Combined analysis of ν_μ disappearance and $\nu_\mu \rightarrow \nu_e$ appearance in MINOS using accelerator and atmospheric neutrinos”** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. Lett. **112**, 191801 (2014)
51. **“Results from the Daya Bay Reactor Neutrino Experiment”** K. V. Tsang *et al.* Nucl. Phys. Proc. Suppl. **246-247**, 18 (2014).
52. **“Design, Calibration, and Performance of the MINERvA Detector”** L. Aliaga *et al.* [MINERvA Collaboration]. arXiv:1305.5199 [physics.ins-det] Nucl. Instrum. Meth. A **743**, 130 (2014)
53. **“Measurement of Muon Neutrino Quasielastic Scattering on a Hydrocarbon Target at $E_\nu \sim 3.5$ GeV”** G. A. Fiorentini *et al.* [MINERvA Collaboration]. Phys. Rev. Lett. **111**, 022502 (2013)
54. **“Measurement of Muon Antineutrino Quasielastic Scattering on a Hydrocarbon Target at $E_\nu \sim 3.5$ GeV”** L. Fields *et al.* [MINERvA Collaboration]. Phys. Rev. Lett. **111**, no. 2, 022501 (2013)
55. **“Measurement of Neutrino and Antineutrino Oscillations Using Beam and Atmospheric Data in MINOS”** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. Lett. **110**, no. 25, 251801 (2013)
56. **“Search for flavor-changing non-standard neutrino interactions by MINOS”** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. D **88**, no. 7, 072011 (2013)
57. **“Electron neutrino and antineutrino appearance in the full MINOS data sample”** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. Lett. **110**, no. 17, 171801 (2013)
58. **“Comparisons of annual modulations in MINOS with the event rate modulation in CoGeNT”** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. D **87**, no. 3, 032005 (2013)
59. **“Improved Measurement of Electron Antineutrino Disappearance at Daya Bay”** F. P. An *et al.* [Daya Bay Collaboration]. Chin. Phys. C **37**, 011001 (2013)
60. **“Measurements of atmospheric neutrinos and antineutrinos in the MINOS Far Detector”** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. D **86**, 052007 (2012)
61. **“Demonstration of Communication using Neutrinos”** D. D. Stancil *et al.* [MINERvA Collaboration]. Mod. Phys. Lett. A **27**, 1250077 (2012)
62. **“An improved measurement of muon antineutrino disappearance in MINOS”** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. Lett. **108**, 191801 (2012)
63. **“Search for Lorentz invariance and CPT violation with muon antineutrinos in the MINOS Near Detector”** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. D **85**, 031101 (2012)
64. **“Arachne - A web-based event viewer for MINERvA”** N. Tagg *et al.* [MINERvA Collaboration]. Nucl. Instrum. Meth. **676**, 44 (2012)
65. **“Search for the disappearance of muon antineutrinos in the NuMI neutrino beam”** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. D **84**, 071103 (2011)

66. **“Improved search for muon-neutrino to electron-neutrino oscillations in MINOS”** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. Lett. **107**, 181802 (2011)
67. **“MINOS+: a Proposal to FNAL to run MINOS with the medium energy NuMI beam”** G. Tzanankos *et al.* [MINOS+ Collaboration]. FERMILAB-PROPOSAL-1016
68. **“Active to sterile neutrino mixing limits from neutral-current interactions in MINOS”** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. Lett. **107**, 011802 (2011)
69. **“First direct observation of muon antineutrino disappearance”** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. Lett. **107**, 021801 (2011)
70. **“Measurement of the Neutrino Mass Splitting and Flavor Mixing by MINOS”** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. Lett. **106**, 181801 (2011)
71. **“Measurement of the underground atmospheric muon charge ratio using the MINOS Near Detector”** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. D **83**, 032011 (2011)

— Started at Otterbein —

72. **“Observation in the MINOS far detector of the shadowing of cosmic rays by the sun and moon”** P. Adamson *et al.* [MINOS Collaboration]. Astropart. Phys. **34**, 457 (2011)
73. **“A Search for Lorentz Invariance and CPT Violation with the MINOS Far Detector”** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. Lett. **105**, 151601 (2010)
74. **“New constraints on muon-neutrino to electron-neutrino transitions in MINOS”** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. D **82**, 051102 (2010)
75. **“Search for sterile neutrino mixing in the MINOS long baseline experiment”** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. D **81**, 052004 (2010)
76. **“Neutrino and Antineutrino Inclusive Charged-current Cross Section Measurements with the MINOS Near Detector”** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. D **81**, 072002 (2010)
77. **“Search for muon-neutrino to electron-neutrino transitions in MINOS”** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. Lett. **103**, 261802 (2009)
78. **“Observation of muon intensity variations by season with the MINOS far detector”** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. D **81**, 012001 (2010)
79. **“Measurement of the Cosmic Ray and Neutrino-Induced Muon Flux at the Sudbury Neutrino Observatory”** B. Aharmim *et al.* [SNO Collaboration]. Phys. Rev. D **80**, 012001 (2009)
80. **“Comparisons of the MINOS Near and Far Detector Readout Systems at a Test Beam”** A. Cabrera *et al.* [MINOS Collaboration]. arXiv:0902.1116 [physics.ins-det] Nucl. Instrum. Meth. A **609**, 106 (2009)
81. **“Sudden stratospheric warmings seen in MINOS deep underground muon data”** S. Osprey *et al.* [MINOS Collaboration]. Geophys. Res. Lett. **36**, L05809 (2009).
82. **“Search for active neutrino disappearance using neutral-current interactions in the MINOS long-baseline experiment”** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. Lett. **101**, 221804 (2008)
83. **“Testing Lorentz Invariance and CPT Conservation with NuMI Neutrinos in the MINOS Near Detector”** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. Lett. **101**, 151601 (2008)
84. **“Measurement of Neutrino Oscillations with the MINOS Detectors in the NuMI Beam”** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. Lett. **101**, 131802 (2008)
85. **“The Magnetized steel and scintillator calorimeters of the MINOS experiment”** D. G. Michael *et al.* [MINOS Collaboration]. arXiv:0805.3170 [physics.ins-det] Nucl. Instrum. Meth. A **596**, 190 (2008)
86. **“A Study of Muon Neutrino Disappearance Using the Fermilab Main Injector Neutrino Beam”** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. D **77**, 072002 (2008)

87. **"The NOvA Technical Design Report"** D. S. Ayres *et al.* [NOvA Collaboration]. FERMILAB-DESIGN-2007-01
88. **"Measurement of neutrino velocity with the MINOS detectors and NuMI neutrino beam"** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. D **76**, 072005 (2007)
89. **"Measurement of the atmospheric muon charge ratio at TeV energies with MINOS"** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. D **76**, 052003 (2007)
90. **"Charge-separated atmospheric neutrino-induced muons in the MINOS far detector"** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. D **75**, 092003 (2007)
91. **"A Precision measurement of the neutrino mixing angle θ_{13} using reactor antineutrinos at Daya-Bay"** X. Guo *et al.* [Daya Bay Collaboration].
92. **"Determination of the ν_e and total ^8B solar neutrino fluxes with the Sudbury neutrino observatory phase I data set"** B. Aharmim *et al.* [SNO Collaboration]. Phys. Rev. C **75**, 045502 (2007)
93. **"Observation of muon neutrino disappearance with the MINOS detectors and the NuMI neutrino beam"** D. G. Michael *et al.* [MINOS Collaboration]. Phys. Rev. Lett. **97**, 191801 (2006)
94. **"First MINOS results from the NuMI beam"** N. Tagg [MINOS Collaboration]. eConf C **060409**, 019 (2006) FERMILAB-CONF-06-130-E, FPCP06-232, FPCP-2006-019
95. **"The MINOS calibration detector"** P. Adamson *et al.* Nucl. Instrum. Meth. A **556**, 119 (2006).
96. **"First observations of separated atmospheric $\nu(\mu)$ and anti- $\nu(\mu)$ events in the MINOS detector"** P. Adamson *et al.* [MINOS Collaboration]. Phys. Rev. D **73**, 072002 (2006)
97. **"Performance of Hamamatsu 64-anode photomultipliers for use with wavelength-shifting optical fibres"** N. Tagg *et al.* physics/0408055 Nucl. Instrum. Meth. A **539**, 668 (2005) NUMI-PUB-SCINT-1040
98. **"NOvA: Proposal to build a 30 kiloton off-axis detector to study $\nu(\mu)$ o $\nu(e)$ oscillations in the NuMI beamline"** D. S. Ayres *et al.* [NOvA Collaboration]. FERMILAB-PROPOSAL-0929
99. **"The MINOS data acquisition system"** A. Belias *et al.* IEEE Trans. Nucl. Sci. **51**, 451 (2004).
100. **"Neutral current and day night measurements from the pure D-2.O phase of SNO"** A. L. Hallin *et al.* Nucl. Phys. Proc. Suppl. **118**, 3 (2003).
101. **"The MINOS experiment"** N. Tagg [MINOS Collaboration].
102. **"Direct evidence for neutrino flavor transformation from neutral-current interactions in SNO"** A. B. McDonald *et al.* [SNO Collaboration]. AIP Conf. Proc. **646**, 43 (2003).
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105. **"Measurement of day and night neutrino energy spectra at SNO and constraints on neutrino mixing parameters"** Q. R. Ahmad *et al.* [SNO Collaboration]. Phys. Rev. Lett. **89**, 011302 (2002)
106. **"Direct evidence for neutrino flavor transformation from neutral current interactions in the Sudbury Neutrino Observatory"** Q. R. Ahmad *et al.* [SNO Collaboration]. Phys. Rev. Lett. **89**, 011301 (2002)
107. **"The Li-8 calibration source for the Sudbury Neutrino Observatory"** N. J. Tagg, A. Hamer, B. Sur, E. D. Earle, R. L. Helmer, G. Jonkmans, B. A. Moffat and J. J. Simpson. Nucl. Instrum. Meth. A **489**, 178 (2002)
108. **"Neutrino observations from the Sudbury Neutrino Observatory"** A. W. P. Poon *et al.* [SNO Collaboration]. AIP Conf. Proc. **610**, 218 (2002)

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110. **"Measurement of CC interactions produced by ^8B solar neutrinos at SNO"** A. B. McDonald *et al.* [SNO Collaboration]. PoS hep **2001**, 186 (2001).
111. **"First results from the Sudbury Neutrino Observatory"** A. McDonald *et al.*
112. **"Measurement of the rate of $\nu_e + d \rightarrow p + p + e^-$ interactions produced by ^8B solar neutrinos at the Sudbury Neutrino Observatory"** Q. R. Ahmad *et al.* [SNO Collaboration]. Phys. Rev. Lett. **87**, 071301 (2001) UPR-0240E
113. **"The Lithium 8 calibration source and through going muon analysis in the Sudbury Neutrino Observatory"** N. J. Tagg. UMI-NQ-65836
114. **"The Sudbury neutrino observatory"** J. Boger *et al.* [SNO Collaboration]. Nucl. Instrum. Meth. A **449**, 172 (2000)
115. **"Time-Symmetry: An Application to Shaped Pulse Excitation of Spin-1 Systems"**
S. Habot, D. Lu, N. Tagg, G. Gall, and D. Siminovitch
Solid State NMR, **10**, pp. 111-184, (1998)
116. **"The Role of Transfer Functions in Evaluating Composite-Pulse or Shaped-Pulse Excitation of Spin-1 Systems"**
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Public Technical Notes

1. 06/29/18 MICROBOONE-NOTE-1050-PUB Study of Reconstructed $\text{j}\sup\text{z}39\text{i}/\sup\text{z}4\text{r}$ Beta Decays at the MicroBooNE Detector
2. 06/01/18 MICROBOONE-NOTE-1032-PUB First Measurement of Muon Neutrino Charged Current Single Neutral Pion Production on Argon with the MicroBooNE LArTPC
3. 08/30/17 MICROBOONE-NOTE-1026-PUB A Measurement of the Attenuation of Drifting Electrons in the MicroBooNE LArTPC
4. 07/22/17 MICROBOONE-NOTE-1028-PUB Establishing a Pure Sample of Side-Piercing Through-Going Cosmic-Ray Muons for LArTPC Calibration in MicroBooNE
5. 06/04/17 MICROBOONE-NOTE-1024-PUB Measurement of Reconstructed Charged Particle Multiplicities of Neutrino Interactions in MicroBooNE
6. 01/26/17 MICROBOONE-NOTE-1025-PUB Proton Track Identification in MicroBooNE Simulation for Neutral Current Elastic Events
7. 11/29/16 MICROBOONE-NOTE-1018-PUB Study of Space Charge Effects in MicroBooNE
8. 07/04/16 MICROBOONE-NOTE-1017-PUB A Method to Extract the Charge Distribution Arriving at the TPC Wire Planes in MicroBooNE
9. 07/04/16 MICROBOONE-NOTE-1016-PUB Noise Characterization and Filtering in the MicroBooNE TPC
10. 07/04/16 MICROBOONE-NOTE-1015-PUB The Pandora multi-algorithm approach to automated pattern recognition in LAr TPC detectors
11. 07/04/16 MICROBOONE-NOTE-1014-PUB A Comparison of Monte-Carlo Simulations and Data from MicroBooNE
12. 07/04/16 MICROBOONE-NOTE-1013-PUB MicroBooNE Detector Stability
13. 07/04/16 MICROBOONE-NOTE-1012-PUB Demonstration of 3D Shower Reconstruction on MicroBooNE Data

14. 07/04/16 MICROBOONE-NOTE-1010-PUB Selection and kinematic properties of numu charged-current inclusive events in 5E19 POT of MicroBooNE data
15. 07/01/16 MICROBOONE-NOTE-1008-PUB Michel Electron Reconstruction Using the MicroBooNE LArTPC Cosmic Data
16. 05/03/16 MICROBOONE-NOTE-1006-PUB Study Towards an Event Selection for Neutral Current Inclusive Single Pi^0 Production in MicroBooNE
17. 05/30/16 MICROBOONE-NOTE-1005-PUB Cosmic Shielding Studies at MicroBooNE
18. 11/06/15 MICROBOONE-NOTE-1004-PUB MC performance study for an early numu charged-current inclusive analysis with MicroBooNE
19. 05/29/16 MICROBOONE-NOTE-1003-PUB Measurement of the Electronegative Contaminants and Drift Electron Lifetime in the MicroBooNE Experiment
20. 11/02/15 MICROBOONE-NOTE-1002-PUB First neutrino interactions observed with the MicroBooNE Liquid-Argon TPC detector
21. 08/28/15 MICROBOONE-NOTE-1001-TECH Noise Dependence on Temperature and LAr Fill Level in the MicroBooNE Time Projection Chamber

Conferences and Proceedings

1. **“Results from the First year of Beam with MINOS”**
N. Tagg [MINOS Collaboration]
Aspen Winter Conference on Neutrinos in Physics and Astrophysics, Aspen, Jan., 2007
2. **“First MINOS results from the NuMI beam”**
N. Tagg [MINOS Collaboration] [arXiv:hep-ex/0605058]
(First conference presentation of MINOS results.)
In the Proceedings of 4th Flavor Physics and CP Violation Conference (FPCP 2006), Vancouver, British Columbia, Canada, 9-12 Apr 2006
3. **“The MINOS experiment”**
N. Tagg [MINOS Collaboration]
Prepared for 2nd International Workshop on Neutrino Oscillations in Venice (NO-VE 2003), Venice, Italy, 3-5 Dec 2003
4. **“ ‘High Energy’ Physics in the Sudbury Neutrino Observatory”**
N. Tagg [SNO Collaboration]
10th International School of Particles and Cosmology, Baksan Valley, Kabardino-Balkaria, Russia, April 1999.

Posters

1. **Arachne: An Web-Based Event Display For Education And Outreach,**
N. Tagg for the MINERvA Collaboration,
Neutrino 2012, Kyoto, Japan, June 2012
2. **“Through-Going Muons in the Sudbury Neutrino Observatory”**
N. Tagg and C. Waltham [SNO Collaboration]
Canadian Association Of Physicists Congress, Waterloo, June 1998.

Invited Talks and Seminars

- **“Faster Than Light Neutrinos?”**, Graduate seminar, University of Indiana, Nov, 2012.
- **“The Ghost Particles: Experimental Neutrino Physics”**, Junior Faculty Colloquium Series, Otterbein University, Apr, 2010.
- **“Daya Bay Software Tutorial”**, Various teachers, IHEP Beijing, Dec, 2007.

- **“The MINOS Experiment”**, Seminar at University of Wisconsin at Madison, April, 2007.
- **“Neutrino Oscillations and the MINOS Results”**, Colloquium at Ohio University, Jan., 2007.
- **“Calibrating the ‘Identical’ MINOS Detectors”**, Seminar at Argonne National Lab, Dec 2006.
- **“Neutrino Oscillations and the MINOS Results”**, Colloquium at Brandeis University, Sept 2006.
- **“First MINOS Results from the NuMI Beam”**, Henderson DUESEL Capstone workshop, Stony Brook, May 2006.
- **“First MINOS Results from the NuMI Beam”**, Seminars at Tufts University and the University of British Columbia, April 2006.
- **“First MINOS results from the NuMI beam”**, Flavor Physics and CP Violation Conference (FPCP 2006), Vancouver, British Columbia, Apr 2006
- **“Muons Through SNO”**, Seminar, University of Sheffield, November 2001.
- **“Muons Through SNO”**, Seminar, Oxford University, May 2001
- **“The Sudbury Neutrino Observatory”**, University of Lethbridge, December 1999.