

Publications

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Scientific Publications in Refereed Journals:

- “Constraining Muon Internal Bremsstrahlung as a Contribution to the MiniBooNE Low Energy Excess,” The MiniBooNE Collaboration, (A.A. Aguilar-Arevalo, *et al.*), hep-ex/0710.3897, 2007, submitted to Phys. Rev. D.
- “Measurement of Muon Neutrino Quasielastic Scattering on Carbon,” The MiniBooNE Collaboration, (A.A. Aguilar-Arevalo, *et al.*), hep-ex/0706.0926, 2007, submitted to Phys. Rev. Lett.
- “A Search for Electron Neutrino Appearance at the $\Delta m^2 \sim 1 \text{ eV}^2$ Scale,” The MiniBooNE Collaboration, (A.A. Aguilar-Arevalo, *et al.*), hep-ex/0704.1500, 2007, Phys. Rev. Lett. 98:231801, 2007.
- “Leptonic CP Violation Studies at MiniBooNE in the (3+2) Sterile Neutrino Oscillation Hypothesis”, G. Karagiorgi, A. Aguilar-Arevalo, J.M. Conrad, M. H. Shaevitz, K. Whisnant, M. Sorel, V. Barger, hep-ph/0609177, Phys. Rev. D75:01011, 2007.
- “Precise Measurements of Neutrino and Antineutrino Differential Cross Sections”, The NuTeV Collaboration, (M. Tzanov, *et al.*) Phys. Rev. D74:012008, 2006.
- “Can a 3+2 Oscillation Model Explain the NuTeV Electroweak Results?”, J.S. Ma, J.M. Conrad, M. Sorel, G. P. Zeller, Phys. Rev. D73:057302, 2006.
- “Precision Measurement of $\sin^2 \theta_W$ at a Reactor,” J. M. Conrad, J. M. Link and M. H. Shaevitz, Phys. Rev. D71:073013, 2005.
- “A Combined Analysis of Short Baseline Neutrino Experiments in the (3+1) and (3+2) Sterile Neutrino Oscillation Hypotheses,” M. Sorel, J.M. Conrad, M. Shaevitz, Phys. Rev. D70:073004, 2004.

- “A Search for $\nu_\mu \rightarrow \nu_e$ and $\bar{\nu}_\mu \rightarrow \bar{\nu}_e$ Oscillations at NuTeV,” The NuTeV Collaboration, (S. Avvakumov, *et al.*), Phys. Rev. Lett. 89:011804, 2002.
- “On the Effect of Asymmetric Strange Seas and Isospin Violating Parton Distribution Functions on $\sin^2 \theta_W$ Measured in the NuTeV Experiment,” The NuTeV Collaboration (G.P. Zeller, *et al.*), Phys. Rev. D65:111103, 2002.
- “Supernova Neutrinos and LSND,” M. Sorel and J. Conrad, Phys. Rev. D66:033009, 2002.
- “A Precise Determination of Electroweak Parameters in Neutrino Nucleon Scattering,” The NuTeV Collaboration, (G.P. Zeller, *et al.*), Phys. Rev. Lett. 88:091802, 2002.
- “Observation of an Anomalous Number of Dimuon Events in a High-Energy Neutrino Beam,” The NuTeV Collaboration (T. Adams, *et al.*), Phys. Rev. Lett. 87:041801, 2001
- “Search for the Lepton Number Violating Process $\bar{\nu}_\mu e^- \rightarrow \mu^- \bar{\nu}_e$,” The NuTeV Collaboration (J.A. Formaggio *et al.*), Phys. Rev. Lett. 87:071803, 2001.
- “Precise Measurement of Dimuon Production Cross-Sections in ν_μ -Fe and $\bar{\nu}_\mu$ -Fe Deep Inelastic Scattering at the TeVatron,” The NuTeV Collaboration (M. Goncharov *et al.*), Phys. Rev. D64:112006, 2001.
- “A First Measurement of Low x , Low Q^2 Structure Functions in Neutrino Scattering,” The CCFR/NuTeV Collaboration (B. T. Fleming, *et al.*), Phys. Rev. Lett. 86:5430, 2001.
- “Observation of Neutral Current Charm Production in ν_μ Fe Scattering at the TeVatron,” The NuTeV Collaboration (A. Alton *et al.*), Phys. Rev. D64:012002, 2001
- Measurements of F_2 and $xF_3^\nu - xF_3^{\bar{\nu}}$ From CCFR ν_μ -Fe and ν_μ -FE Data in a Physics Model Independent Way,” The CCFR/NuTeV Collaboration (U.K. Yang, *et al.*) Phys. Rev. Lett. 86:2742, 2001

- Search for Light to Heavy Quark Flavor Changing Neutral Currents in $\nu_\mu N$ and $\bar{\nu}_\mu N$ Scattering at the Tevatron,” The NuTeV Collaboration (A. Alton, *et al.*) Phys. Rev. D63:012001, 2001.
- “Search for a 33.9-MeV/c² Neutral Particle in Pion Decay,” The NuTeV Collaboration (J. Formaggio, *et al.*), Phys. Rev. Lett. 84:4043, 2000.
- “Evidence for Diffractive Charm Production in ν_μ -Fe and $\bar{\nu}_\mu$ -Fe Scattering at the Tevatron,” The NuTeV Collaboration (T. Adams, *et al.*), Phys. Rev. D61:092001, 2000.
- “Nuclear Structure Functions in the Large x , Large Q^2 Kinematic Region in Neutrino Deep Inelastic Scattering,” The CCFR/NuTeV Collaboration (M. Vakili, *et al.*), Phys. Rev. D 61:052003, 2000.
- “Search for Neutral Heavy Leptons in the NuTeV High-Energy Neutrino Beam,” The NuTeV Collaboration (A. Vaitaitis, *et al.*), Phys. Rev. Lett. 83:4943, 1999.
- “A High Statistics Search for ν_e ($\bar{\nu}_e$) \rightarrow ν_τ ($\bar{\nu}_\tau$) Oscillations,” The CCFR/NuTeV Collaboration (D. Naples, *et al.*). Phys. Rev. D59:3110, 1999.
- “A Measurement of $\alpha_s(Q^2)$ from the Gross-Llewellyn Smith Sum Rule,” The NuTeV Collaboration (J. H. Kim, *et al.*) Phys. Rev. Lett. 81:3595, 1999.
- “Precision Measurements with High Energy Neutrino Beams,” J. Conrad, M. Shaevitz, T. Bolton Rev. Mod. Phys. 70:1341, 1998.
- “Helicity Effects in Neutral Heavy Lepton Decays,” J. A. Formaggio, J. M. Conrad, M. S. Shaevitz, A. Vaitaitis, R. Drucker, Phys. Rev. D57:7037, 1998.
- “A Precision Measurement of Electroweak Parameters in Neutrino - Nucleon scattering,” The CCFR/NuTeV Collaboration (K. McFarland, *et al.*) Eur. Phys. J. C1:509, 1998.
- “Diffractive Production of ρ^0 (770) Mesons in Muon Proton Interactions at 470-GeV,” The E665 Collaboration, (M. Adams *et al.*), Z. Phys. C74:237, 1997.

- “Inclusive Single-Particle Distributions and Transverse Momenta of Forward Produced Charged Hadrons in μp Scattering at 470 GeV,” The E665 Collaboration, (M. Adams, *et al.*), *Zeits. für Physik*, C76:441, 1997.
- “Improved Determination of α_s from Neutrino - Nucleon Scattering,” The CCFR/NuTeV Collaboration (W. Seligman, *et al.*), *Phys. Rev. Lett.* 79:1213, 1997
- “A High Statistics Search for $\nu_\mu(\bar{\nu}_\mu) \rightarrow \nu_e(\bar{\nu}_e)$ Oscillations in the Small Mixing Angle Regime,” The CCFR/NuTeV Collaboration (A. Romosan, *et al.*) *Phys. Rev. Lett.* 78:2912, 1997 .
- “Proton and Deuteron Structure Functions in Muon Scattering at 470 GeV,” The E665 Collaboration (M. Adams, *et al.*), *Phys.Rev* D54:3006, 1996.
- “Determination of the Gluon Distribution Function of the Nucleon Using Energy-Energy Angular Pattern in Deep Inelastic Muon - Deuteron Scattering,” The E665 Collaboration (M. Adams, *et al.*), *Zeits. für Physik*, C71:391, 1996.
- “Nuclear Decay Following Deep Inelastic Scattering of 470 GeV Muons,” The E665 Collaboration (M. Adams, *et al.*), *Phys. Rev. Lett.* 74:5198, 1995.
- “A Limit on $\nu_\mu(\bar{\nu}_\mu) \rightarrow \nu_\tau(\bar{\nu}_\tau)$ Oscillations from a Precision Measurement of $\nu -$ nucleon Neutral Current Interactions,” The CCFR/NuTeV Collaboration (K. McFarland, *et al.*), *Phys. Rev. Lett* 75:3993, 1995.
- “Shadowing in Inelastic Scattering of Muons on Carbon, Calcium and Lead at Low x,” The E665 Collaboration (M. Adams, *et al.*), *Zeits. für Physik* C67:403, 1995.
- “Extraction of the Ratio F_2^n/F_2^p from Muon-Deuteron and Muon-Proton Scattering at Small x and Q^2 ,” The E665 Collaboration (M. Adams, *et al.*), *Phys. Rev. Lett.* 75:1466, 1995.

- “Measurement of Nuclear Transparencies from Exclusive ρ^0 Meson Production in Muon Nucleus Scattering at 470 GeV,” The E665 Collaboration (M. Adams, *et al.*), Phys. Rev. Lett. 74:1525, 1995.
- “Nuclear Shadowing, Diffractive Scattering and Low Momentum Protons in μ Xe Interactions at 490 GeV,” The E665 Collaboration (M. Adams, *et al.*), Zeits. für Physik C65:225, 1995.
- “Large Density and Correlation Integrals in Deep-Inelastic Muon-Nucleon Scattering at 490 GeV,” The E665 Collaboration (M. Adams, *et al.*), Phys. Lett. B 335:535, 1995.
- “Production of Neutral Strange Particles in Muon-Nucleon Scattering at 490 GeV,” Zeits. für Physik 61:539, 1994.
- “Scaled Energy (z) Distributions of Charged Hadrons Observed in Deep Inelastic Muon Scattering at 490 GeV from Xenon and Deuterium Targets,” The E665 Collaboration (M. Adams, *et al.*), Phys. Rev. D50:1836., 1994
- “Production of Charged Hadrons by Positive Muons on Deuterium and Xenon at 490 GeV,” The E665 Collaboration (M. Adams, *et al.*), Zeits. für Physik 61:179, 1994.
- “ Q^2 dependence of the Average Squared Transverse Energy of Jets in Deep Inelastic Muon-Nucleon Scattering with Comparison to QCD,” The E665 Collaboration (M. Adams, *et al.*), Phys. Rev. Lett. 72:466, 1994.
- “Perturbative QCD Effects Observed in 490 GeV/c Deep Inelastic Muon Scattering,” The E665 Collaboration (M. Adams, *et al.*), Phys. Rev. D48:5057, 1993.
- “Measurement of the Ratio σ_n/σ_p in Inelastic Muon-Nucleon Scattering at Very Low x and Q^2 ,” The E665 Collaboration (M. Adams, *et al.*), Phys. Lett. B309:483, 1993.
- “An Investigation of Bose-Einstein Correlations in Muon-Nucleon Interactions at 490 GeV/c,” The E665 Collaboration (M. Adams, *et al.*), Phys. Lett. B308:418, 1993.

- “Shadowing in the Muon-Xenon Inelastic Scattering Cross Section at 490 GeV/c,” The E665 Collaboration (M. Adams, *et al.*), Phys. Lett. B287:375, 1992.
- “First Measurements of Jet Production Rates in Deep-Inelastic Lepton-Proton Scattering,” The E665 Collaboration (M. Adams, *et al.*), Phys. Rev. Lett. 69:1026, 1992.
- “Observation of the Saturation of Shadowing at very low x_{Bj} ,” The E665 Collaboration (M. Adams, *et al.*), Phys. Rev. Lett. 68:3266, 1992.
- “Distributions of Charged Hadrons Observed in Deep-Inelastic Muon-Deuterium Scattering at 490 GeV,” The E665 Collaboration (M. Adams, *et al.*), Phys. Lett. B272:163, 1992.
- “Jet Production and Fragmentation Properties in Deep Inelastic Muon Scattering,” The European Muon Collaboration (M. Arneodo, *et al.*), Zeits. für Physik C36:527, 1992.
- “Measurement of Azimuthal Angle Distributions in Deep Inelastic Muon Scattering,” The European Muon Collaboration (M. Arneodo, *et al.*), Zeits. für Physik C34:277, 1992.

Technical Publications:

- “Photomultiplier Tubes in the MiniBooNE Experiment,” S. Brice, *et al.*, Nuclear Instr. and Meth., 562:1, 97, 2006.
- “Accelerator/Experiment Operations – FY 2004 Through FY 2005,” C. Bromberg, *et al.*, FERMILAB-TM-2288, Dec 2005.
- “Accelerator/Experiment Operations – FY 2001 Through FY 2003,” J. Conrad, *et al.*, FERMILAB-TM-2230, Feb 2004.
- “Recent progress in neutrino factory and muon collider research within the Muon collaboration,” M. M. Alsharoa *et al.*, Phys. Rev. ST Accel. Beams, 6, 081001, 2003.

- “Precision Calibration of the NuTeV Calorimeter,” The NuTeV Collaboration (D. A. Harris, *et al.*), Nucl. Instrum. Meth. A447 (2000) 377.
- “NUTEV SSQT Performance,” The NuTeV Collaboration, FERMILAB-TM-2040, Feb 1998.
- “Tests of a Calorimetric Technique for Measuring the Energy of Cosmic Ray Muons in the TeV Energy Range,” The CCFR/NuTeV Collaboration (A. Chikkatur, *et al.*) Zeits. für Physik 74 (1997) 279.
- “The Sign Selected Quad Train,” The NuTeV Collaboration (R. Bernstein, *et al.*), Fermilab TM-1884, 1994.
- “A Spectrometer for Muon Scattering at the Tevatron,” The E665 Collaboration (M. Adams, *et al.*), Nuclear Instruments and Methods A291 (1990) 533.
- “An Electron/Positron Calibration Beam for the Tevatron Muon Spectrometer,” J. Conrad, A. Malensek, J. Morfin, FERMILAB-TM-1652.
- “The E665 (TMC) E-M Calorimeter,” S. Aid, J. Cole, J. Conrad, S. Kunori, D. Michael, R. Nickerson, S. O’Day, F. Pipkin, E. Ramberg, P. Rapp, M. Schmitt, A. Skuja, G. Snow, P. Steinberg, R. Talaga, H. Williams, R. Wilson, Proceedings of the Gas Sampling Calorimetry Workshop II (1985) 249.

Proposals, Proceedings, Preprints & Theses (Selected Unrefereed Publications)

- “Neutrino Scattering On Glass: NuSONG,” J.M. Conrad, to be published in the proceedings of NuFact07, arXiv:0711.0548, 2007.
- “Expression of Interest for Neutrino Scattering on Glass: NuSONG,” T. Adams, *et al.*, available from Fermilab Program Planning or at <http://www-nusong.fnal.gov>, 2007.

- “Neutrino Experiments,” J.M. Conrad, to be published in the proceedings of the TASI 2006 Summer School Lectures, arXiv:0708.2446, 2007.
- “First MiniBooNE Neutrino Oscillation Results,” J.M. Conrad and W.C. Louis, for the DNP Research Highlights webpage, 2007.
- “Bringing The SciBar Detector to the Booster Neutrino Beam,” The SciBooNE Collaboration (A. Aguilar-Arevalo, *et al.*), Fermilab-Proposal-0954, 2006.
- “New Opportunities for Surprise,” J. Conrad, Proceedings of The Nobel Symposium 2004: Neutrino Physics, Phys. Scripta T121, 39, 2005.
- “The Neutrino Matrix: The Joint Study on the Future of Neutrino Physics,” B. Kayser, *et al.*, Published by and available on request from, the American Physical Society, 2005.
- “Whitepaper Report on Using Nuclear Reactors to search for a value of θ_{13} ,” K. Anderson, *et al.*, hep-ex/0402041
- “A Proposal for a Near Detector Experiment on the Booster Neutrino Beamline: FINeSSE: Fermilab Intense Neutrino Scattering Scintillator Experiment,” The FINeSSE Collaboration (S. Brice *et al.*), hep-ex/0402007.
- “The MiniBooNE Run Plan,” The MiniBooNE Collaboration (A. Aguilar Arevalo, *et al.*), Fermilab Program Planning, Fermilab, 2003.
- “Reply to the Comment on ‘A Precise Determination of Electroweak Parameters in Neutrino Nucleon Scattering’.” The NuTeV Collaboration (G.P. Zeller, *et al.*), hep-ex/0207052.
- “The MiniBooNE Detector Technical Design Report,” The MiniBooNE Collaboration (J.M. Conrad, *et al.*), Fermilab-TM-2207, 2001.
- “Searching for the Lightest Neutralino at Fixed Target Experiments,” L. Borissov, J.M. Conrad, and M. Shaevitz, hep-ph/0007195

- “Searches for New Physics at NuTeV,” J. Conrad, published in the Proceedings of Particle Physics and Cosmology: Second Tropical Workshop, San Juan, Puerto Rico, May 1-5, 2000, AIP Conference Proceedings 540.
- “Recent Results on Neutrino Oscillations,” J. Conrad, Proceedings of The Particles and Nuclei International Conference, Nucl. Phys. A663 (2000) 210.
- “Expression of Interest for R&D Towards a Neutrino Factory Based on a Storage Ring and a Muon Collider,” (The Neutrino Factory and Muon Collider Collaboration, D. Ayres *et al.*), Nov 1999. physics/9911009
- “Future Tests of LSND: BooNE and I216,” J. Conrad, Proceedings of the 17th International Workshop on Weak Interactions and Neutrinos, Kapstadt, 1999, 395.
- “Recent Results on Neutrino Oscillations,” J. Conrad, Proceedings of the International Conference on High Energy Physics, Vancouver, hep-ex/9811009.
- “A Proposal for an Experiment to Measure $\nu_\mu \rightarrow \nu_e$ Oscillations and ν_μ Disappearance at the Fermilab Booster (BooNE),” the BooNE Collaboration (E. Church *et al.*, J. Conrad and W. Louis, spokespersons), FNAL Office of Program Planning P898, Dec 1997.
- “A Letter of Intent for an Experiment to Measure $\nu_\mu \rightarrow \nu_e$ Oscillations and ν_μ Disappearance at the Fermilab Booster (BooNE),” the BooNE Collaboration (E. Church *et al.*, J. Conrad and W. Louis, spokespersons), FNAL Office of Program Planning LOI 898, June 1997, e-Print Archive: nucl-ex/9706011
- “Precision Structure Function Measurements from CCFR/NuTeV,” J. Conrad, Submitted to The Proceedings of the XXIV SLAC Summer Institute, August 19-30, 1996.
- “Some Highlights of the Recent Fermilab Fixed Target Program of Interest to the Nuclear Physics Community,” J. Conrad, V. Papavassiliou, M. Zielinski, Presented at NSAC/DPN Town Meeting, Fermilab-Conf-95-018, 1995.

- “The 1994 Fermilab Fixed Target Program,” J. Conrad, Fermilab-Pub-94/393, The Proceedings of the XXII SLAC Summer Institute, August 6-19, 1994.
- “Future Experimental Studies of QCD at Fermilab: Options for a Fermilab Strategic Plan,” M. Albrow, *et al.*, Fermilab-FN-622, 1994.
- “A Study of the Q^2 Dependence of the QCD Coupling Constant from the Transverse Momentum of Jets in Deep Inelastic Muon Scattering,” J. Conrad, Ph.D. Thesis, Harvard University, UMI-93-18661-mc, 1993.
- “Jet Production in Deep Inelastic Muon Scattering,” J. Conrad, for the E665 Collaboration, Proceedings of The 7th Meeting of the Division of Particles and Fields of the American Physical Society, (1992).
- “Di-jet Production in the Forward CMS From Deep Inelastic Muon Scattering,” J. Conrad, for the E665 Collaboration, Proceedings of The XXVII Rencontres de Moriond, QCD and High Energy Hadronic Interactions (March 22-28, 1992).
- “High Luminosity Muon Scattering at FNAL,” K. Bazizi, J. Conrad, M. Erdmann, G. Fang, D. Geesaman, C. Guyot, H. Holmgren, H. Jackson, A. Malensek, H. Melanson, J. Morfin, R. Nickerson, H. Schellman, M. Virchaux, FERMILAB-CONF-90/139 (1990).
- “Fixed Target Electroweak and Hard Scattering Physics,” The Fixed Target Electroweak and Hard Scattering Study Group (P. Aurenche, *et al.*), Physics at Fermilab in the 1990’s (1990) 358.
- “A Study of QCD Effects in Muon-Nucleon Scattering,” J. Conrad, M.Sc. Thesis, Oxford University (1986).