Box 500 Fermilab
Batavia, IL 60510
apana@fnal.gov

Leonard Apanasevich

Work: (630) 840–2263
Fax: (630) 840–2269
Home: (630) 406–6382

Education

- Ph.D., expected 1999, Michigan State University, East Lansing, MI
  Thesis: *A Study of High Transverse Momentum Direct Photon Production with 515 GeV/c Pion and 530 and 800 GeV/c Proton Beams Incident on Beryllium, Copper, and Liquid Hydrogen Targets*
- M.A., 1991, Northeastern University, Boston, MA
- B.A., 1987, State University of New York at Brockport, Brockport, NY
  Department Scholar, 1987.

Technical Experience

Fermilab E706 — Department of Physics and Astronomy
1991 to present — Michigan State University, East Lansing, MI

- Currently involved in high energy physics experiment E706 at Fermilab. Participated heavily in measurements of inclusive direct photon, π^0, and η production. Principal contributor to the measurement of the inclusive direct photon cross section.
- Heavily involved in the development of the E706 full shower Monte Carlo simulation program. Created the event selection algorithms used in this program.
- Developed a parameterized Monte Carlo simulation to characterize the direct photon background due to π^0's, η's, and ω's.
- Helped develop the analysis software used in the measurement of the direct photon and neutral meson production cross sections. Served as librarian for this software.
- Managed the production of Monte Carlo data using the Fermilab SGI and IBM computer farm systems.
- Participated in the development of the electromagnetic shower and charged track reconstruction software.
- Participated in taking data for the 1991 fixed target run of E706. Primarily involved in operation and maintenance of the E706 tracking system. Responsibilities included monitoring of the electronic readout devices and debugging of readout hardware.

Computer Skills

- Fluent in FORTRAN. Experience with Pascal, C/C++.
- Operating Systems: UNIX, VMS, Macintosh.
- In-depth experience in multi-author computer code projects.
- Familiar with simulation software including GEANT, HERWIG, and PYTHIA.

Teaching Experience

- Laboratory instructor for introductory physics course at Michigan State University. Also taught recitation sessions for introductory physics classes at Michigan State University.
- Taught introductory physics laboratory sections at Northeastern University.

Presentations

1. New Perspectives, July 1999, Batavia, IL.
   Talk: *K_T Effects in High P_T Particle Production*
   Poster: *High-p_T Direct-Photons and π^0's at E706*
2. Centenial Meeting of the American Physical Society, March 1999, Atlanta, GA.
   Talk: *Nuclear Dependence of High p_T Direct Photon, π^0, and η Production at 0.5 and 0.8 TeV/c*
3. General Meeting of the American Physical Society, April 1997, Washington D.C.
   Talk: *Direct Photon Production in $\pi^- N$ and pN Interactions*
4. General Meeting of the American Physical Society, May 1996, Indianapolis, IN.
   Talk: *Direct Photon Production by 0.5 TeV/c π^- Beam on Nuclear Targets*

Journal Publications

1. L. Apanasevich *et al.*, *k_T effects in direct photon production*, Phys. Rev. D **59**, 074007 (1999).
2. L. Apanasevich *et al.*, *Evidence for parton k_T effects in high-p_T particle production*, Phys. Rev. Lett. **81**, 2642 (1998).
3. L. Apanasevich *et al.*, *Calibration and performance of the E706 lead and liquid-argon electromagnetic calorimeter*, Nucl. Instrum. Methods **A417**, 50 (1998).
4. L. Apanasevich *et al.*, *Production of charm mesons at high transverse momentum in 515 GeV/c π^--nucleon collisions*, Phys. Rev. D **56**, 1391 (1997).
5. V. Koreshev *et al.*, *Production of charmonium states in π^--Be collisions at 515 GeV/c*, Phys. Rev. Lett. **77**, 4294 (1996).

Conference Proceedings

1. M. Begel *et al.*. "Photons and Diphotons from E706" in *DIS'99: 7th International Workshop on Deep Inelastic Scattering and QCD, April 1999, DESY Zeuthen, Germany*, to be published in Nucl. Phys. B (Proc. Suppl).
2. M. Begel *et al.*, "High-$\mathrm{p_T}$ Direct Photon and π^0 Production at E706" in *Hard Parton Physics in High Energy Nuclear Collisions: A RIKEN BNL Research Center Workshop*, submitted.
3. M. Begel *et al.*, "Influence of Parton $\mathrm{k_T}$ on High-$\mathrm{p_T}$ Particle Production" in *DPF 99: The Los Angeles Meeting, Proceedings of the 10th Meeting of the Division of Particles and Fields of the American Physical Society, The University of California at Los Angeles, January 5–9, 1999*, edited by K. Arisaka and Z. Bern (Library of the University of California at Los Angeles, 1999), submitted.
4. M. Zieliński *et al.*, "Effects of Parton $\mathrm{k_T}$ in High-$\mathrm{p_T}$ Particle Production," *Proceedings of the International Conference on Hadron Structure (HS 98), Stará Lesná, Slovakia, 7–13 Sep 1998*, edited by D. Bruncko, P. Stríženec. (IEP SAS Košice, 1998) p. 436, hep-ph/9811278.
5. C. Bromberg *et al.*, "Influence of Parton $\mathrm{k_T}$ on High-$\mathrm{p_T}$ Particle Production and Determination of the Gluon Distribution Function," to be published in the *Proceedings of the 29th International Conference on High-Energy Physics (ICHEP 98), Vancouver, Canada, 23-29 Jul 1998.*
6. M. Zieliński *et al.*, "Parton $\mathrm{K_T}$ and Large $\mathrm{P_T}$ Production of Direct Photons and Neutral Mesons" in *Proceedings of QCD 97, Montpellier, France, 3-9 July 1997*, Nucl. Phys. B (Proc. Suppl.) **64**, 84 (1998).

7. G. Ginther *et al.*, “High $\mathrm{P_T}$ Production of Neutral Mesons and Direct Photons” in *Proceedings of the Sixth Conference on the Intersections of Particle and Nuclear Physics, Big Sky, Montana, 27 May-2 June 1997*, edited by T. W. Donnelly (American Institute of Physics, Woodbury, NY, 1997) p. 632.

8. M. Zieliński *et al.*, “On Large $\mathrm{P_T}$ Direct γ's, π^0's, Parton $\mathrm{K_T}$, and the Gluon Distribution” in *Deep Inelastic Scattering and QCD, 5th International Workshop, Chicago, IL, 14-18 April 1997*, edited by Jose Repond and Daniel Krakauer, (American Institute of Physics, Woodbury, NY, 1997) Vol. I, p. 426.

9. M. Begel *et al.*, “$\mathrm{K_T}$ Effects in E706 Data” in *DPF 96: The Minneapolis Meeting, Proceedings of the 9th Meeting of the Division of Particles and Fields of the American Physical Society, The University of Minnesota, August 11-15, 1996*, edited by K. Heller, J. K. Nelson, and D. Reeder, (World Scientific, Singapore, 1998), Vol. 1, p. 563.

10. D. Skow *et al.*, “Production of Direct Photons in π^-N and pN Interactions at 0.5 and 0.8 TeV/c” in *DPF 96: The Minneapolis Meeting, Proceedings of the 9th Meeting of the Division of Particles and Fields of the American Physical Society, The University of Minnesota, August 11-15, 1996*, edited by K. Heller, J. K. Nelson, and D. Reeder, (World Scientific, Singapore, 1998), Vol. 1, p. 560.

11. L. deBarbaro *et al.*, “High $\mathrm{P_T}$ Production of Neutral Mesons in 0.5 TeV/c π^-N and 0.5 TeV/c and 0.8 TeV/c pN Interactions” in *DPF 96: The Minneapolis Meeting, Proceedings of the 9th Meeting of the Division of Particles and Fields of the American Physical Society, The University of Minnesota, August 11-15, 1996*, edited by K. Heller, J. K. Nelson, and D. Reeder, (World Scientific, Singapore, 1998), Vol. 1, p. 441.

12. M. Zieliński *et al.*, “On High $\mathrm{P_T}$ Direct Photons, Mesons and pQCD” in *Proceedings of the 3rd International Symposium on Radiative Corrections - CRAD96, Cracow, Poland, August 1-5, 1996*, edited by S. Jadach, M. Skrzypek, and Z. Wąs, Acta Physica Polonica B Vol. B28, March-April 1997, 571.

13. M. Zieliński *et al.*, “Testing pQCD in Direct Photons and Meson Production” in *Proceedings of the 28th International Conference on High Energy Physics, Warsaw, Poland, 25-31 July 1996*, edited by Z. Ajduk and A. K. Wroblewski, (World Scientific, Singapore, 1997) Vol. I, p. 765.

14. R. Jesik *et al.*, “Charmonium Production in π^--Be Collisions at 515 GeV/c” in *Proceedings of the Quarkonium Physics Workshop, University of Illinois at Chicago, IL, 13 Jun-15 Jun 1996*, edited by H. Goldberg, T. Imbo and W.-Y. Keung, (World Scientific) International Journal of Modern Physics A12, 3817 (1997).

15. T. Ferbel *et al.*, “Direct-γ and Meson Production in a QCD-inspired Phenomenological Framework” in *'96 QCD and High Energy Hadronic Interactions, Proceedings of the XXXIst Rencontre de Moriond, Les Arcs, Savoie, France, 23-30 March 1996*, edited by J. Trân Thanh Vân, (Editions Frontières, France, 1996), p. 181.

16. H. Mendez *et al.*, “Hadroproduction of Charmonium States” in *'95 QCD and High Energy Hadronic Interactions, Proceedings of the XXXth Rencontre de Moriond, Savoie, Savoie, France, March 18-25 1995*, edited by J. Trân Thanh Vân (Editions Frontières, France, 1995), p. 333.

17. N. Varelas *et al.*, “Calibration of the Fermilab E706 Liquid Argon Electromagnetic Calorimeter” in *Proceedings of the 4th International Conference on Advanced Technology and Particle*

Physics, Como, Italy, 3-7 Oct 1994, edited by E. Borchi et al., Nucl. Phys. B (Proc. Suppl.) **44**, 153 (1995).

18. R. Roser *et al.*, "Inclusive Production of Direct Photons, π^0's and η's in π^- Collisions with Be and Cu Nuclei at 515 GeV/c" in *The Albuquerque Meeting, Proceedings of the 8th Meeting of the Division of Particles and Fields of the American Physical Society, August 2-6, 1994, The University of New Mexico*, edited by Sally Seidel (World Scientific, Singapore, 1995), Vol. 2, p. 1278.

19. M. Zieliński *et al.*, "Nuclear Effects in High P_T Production of Neutral Mesons and Direct Photons" in *Intersections Between Particle and Nuclear Physics, 5th Conference, St. Petersburg, FL, June 1994*, edited by Susan J. Seestrom (AIP Conference Proceedings 338, New York, 1995), p. 386.

20. M. Zieliński *et al.*, "Large P_T Production of Direct Photons and Neutral Mesons at 0.5 TeV/c" in *Proceedings of the XXIII International Symposium on Multiparticle Dynamics, Aspen, Colorado, 12-17 September 1993*, edited by Martin M. Block and Alan R. White (World Scientific, Singapore, 1994), p. 366.

21. T. Ferbel *et al.*, "Nuclear Effects in Inclusive Production at Large P_T" in *HEP93, Proceedings of the International Europhysics Conference on High Energy Physics, Marseilles, France, 22-28 July 1993*, edited by J. Carr and M. Perrottet (Editions Frontières, France, 1994), p. 524.

Draft Papers

1. A. Gribushin *et al.*, *Production of J/ψ mesons in pBe collisions at 530 and 800 GeV/c*, in preparation.

2. L. Apanasevich *et al.*, *Omega meson production at large transverse momenta in π^-Be interactions at 515 GeV/c*, in preparation.

3. L. Apanasevich *et al.*, *π^0 and η meson production at large transverse momenta in pp and pBe interactions at 530 and 800 GeV/c*, in preparation.

4. L. Apanasevich *et al.*, *High-mass production of $\pi^0\pi^0$ and $\eta\pi^0$ pairs in* $\pi^\pm$N *and* pN *interactions at 0.5 TeV/c and* pN *interactions at 0.8 TeV/c*, in preparation.