

# Erik K. Blaufuss

## Contact Information

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## Education

**B.S.** (Physics), University of California, Irvine, CA, 1995

**Ph.D.** (Physics), Louisiana State University, Baton Rouge, LA, 2000

Thesis: "Study of the Energy Spectrum of Solar Neutrinos above 5.5 MeV"

Adviser: Professor Robert Svoboda

## Research Experience

**Research Associate**, University of Maryland, College Park (2000-present)

Milagro Gamma-Ray Observatory and IceCube Neutrino Observatory

- Improved Milagro's sensitivity with new trigger and updated DAQ system
- Search for TeV emission from the galactic plane in Milagro data.
- Built and maintain a 30TB data archive and analysis computer cluster
- Design and implement an online data filtering system for IceCube

**Graduate Student**, Louisiana State University (1995-2000)

Super-Kamiokande Experiment

- Measurement of solar neutrino flux and spectrum at Super-Kamiokande
- Designed and operated portable neutron accelerator calibration source
- Maintained online data quality monitor computer system

## Teaching Experience

University of Maryland- Fall semester 2001, 140 students.

Physics 106: "Light, Perception, Photography and Visual Phenomena"

## Honors and Awards

Board of Regents Fellow (1995-1999), Louisiana State University  
Dean's List; Admission with distinction, University of California, Irvine  
Member: American Physical Society

## References

Prof. Greg Sullivan  
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Prof. Robert Svoboda  
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## Refereed Publications

1. "Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a new Background Rejection Technique" R.Atkins, W.Benbow, D.Berley, E. Blaufuss, J.Bussons, D.G. Coyne, R.S.Delay, T.DeYoung, B.L.Dingus, D.E.Dorfman, R.W.Ellsworth, A.Falcone, L.Fleyscher, R.Fleyscher, G.Gisler, M.M.Gonzalez, J.A.Goodman, T.J.Haines, E.Hays, C.M.Hoffman, L.A.Kelley, J.McCullough, J.E.McEnery, R.S.Miller, A.I.Mincer, M.F.Morales, P.Nemethy, D.Noyes, J.M.Ryan, F.W.Samuels, M.Schneider, B.Shen, A.Shoup, G.Sinnis, A.J.Smith, G.W.Sullivan, O.T.Tumer, K.Wang,

M.Wascko, D.A.Williams, S.Westerhoff, M.E.Wilson, X.Xu, (The Miagro Collaboration), *Ap. J.* **595**, 803 (2003).

2. “Search for  $\bar{\nu}_e$  from the Sun at Super-Kamiokande-I,” Y.Gando, S.Fukuda, Y.Fukuda, M.Ishitsuka, Y.Itow, T.Kajita, J.Kameda, K. Kaneyuki, K.Kobayashi, Y.Koshio, M.Miura, S.Moriyama, M.Nakahata, S.Nakayama, T.Nambda, Y.Obayashi, A.Okada, T.Ooyabu, C.Saji, N.Sakurai, M.Shiozawa, Y.Suzuki, H.Takeuchi, Y.Takeuchi, Y.Totsuka, S.Yamada, S. Desai, M.Earl, E.Kearns, M.D.Messier, J.L.Stone, L.R.Sulak, C.W.Walter, M.Goldhaber, T.Barszczak, D.Casper, W.Gajewski, W.R.Kropp, S.Mine, D.W.Liu, M.Smy, H.W.Sobel, M.R.Vagins, K.S.Ganezer, J.Hill, W.E.Keig, E.W.Ellsworth, S.Tasaka, A.Kibayashi, J.G.Learned, S.Matsuno, D.Takemori, Y.Hayato, A.Ichikawa, T.Ishii, T.Kobayashi, T.Maruyama, K.Nakamura, Y.Oyama, M.Sakuda, M.Yoshida, M.Kohama, T.Iwashuta, A.T.Suzuki, T.Inagaki, I.Kato, T.Nakaya, K.Nishikawa, T.J.Haines, S.Dazeley, S. Hatakeyama, R.Svoboda, E.Blaufuss, M.L.Chen, J.A.Goodman, G.Guillian, G.W.Sullivan, D.Turcan, K.Scholberg, A.Habig, M.Ackermann, C.K.Jung, K.Martens, M.Malek, C.Mauger, C.McGrew, E.Sharkey, B.Viren, C.Yanagisawa, T.Toshito, C.Mitsuda, K.Miyano, T.Shibata, Y.Kajiyama, Y.Nagashima, K.Nitta, M.Takita, H.I.Kim, S.B.Kim, J.Yoo, H.Okazawa, T.Ishizuka, M.Etoh, T.Hasegawa, K.Inoue, K.Ishihara, J.Shirai, A.Suzuki, M.Koshiba, Y.Hatakeyama, Y.Ichikawa, M.Koike, K.Nishijima, H.Ishino, M.Morii, R.Nishimura, Y.Watanabe, D.Kielczewska, H.G.Berns, S.C.Boyd, A.L.Stachyra, and R.J.Wilkes, (The Super-Kamiokande Collaboration) *Phys. Rev. Lett.* **90**, 061101 (2003).
3. “The Super-Kamiokande Detector” S. Fukuda et al., (The Super-Kamiokande Collaboration), *Nucl. Inst. Meth. A* **501** 418 (2003).
4. “Search for Supernova Relic Neutrinos at Super-Kamiokande,” M. Malek et al., (The Super-Kamiokande Collaboration) *Phys. Rev. Lett.* **90**, 061101 (2003).
5. “Search for Neutrinos from Gamma-Ray Bursts using Super-Kamiokande,” S. Fukuda et al., (The Super-Kamiokande Collaboration), *Ap. J.* **578**,

317 (2002).

6. "Determination of Solar Neutrino Oscillation Parameters using 1496 Days of Super-Kamiokande-I Data," S. Fukuda et al., (The Super-Kamiokande Collaboration), *Phys. Lett. B* **539**, 179 (2002).
7. "Constraints on Neutrino Oscillations Using 1258 Days of Super-Kamiokande Solar Neutrino Data," S. Fukuda et al., (The Super-Kamiokande Collaboration), *Phys. Rev. Lett.* **86**, 5656 (2001).
8. " $^8\text{B}$  and hep Neutrino Measurements from 1258 Days of Super-Kamiokande Data," S. Fukuda et al., (The Super-Kamiokande Collaboration), *Phys. Rev. Lett.* **86**, 5651 (2001).
9. " $^{16}\text{N}$  as a calibration source for Super-Kamiokande," E. Blaufuss et al., (The Super-Kamiokande Collaboration), *Nucl. Inst. Meth. A* **458**, 636 (2001).
10. "Tau neutrino favored over sterile neutrinos in atmospheric muon neutrino oscillations," S. Fukuda et al., (The Super-Kamiokande Collaboration), *Phys. Rev. Lett.* **85**, 3999 (2000).
11. "Neutrino-induced upward stopping muons in Super-Kamiokande," Y. Fukuda et al., (The Super-Kamiokande Collaboration), *Phys. Lett. B* **467**, 185 (1999).
12. "Search for Proton Decay through  $p \rightarrow \bar{\nu}K^+$  in a Large Water Cherenkov Detector," Y. Hayato et al., (The Super-Kamiokande Collaboration), *Phys. Rev. Lett.* **83** 8, 1529 (1999).
13. "Observation of the East-West Anisotropy of the Atmospheric Neutrino Flux," T. Futagami et al., (The Super-Kamiokande Collabora-

tion), *Phys. Rev. Lett.* **82** 26, 5194 (1999).

14. "Measurement of radon concentrations at Super-Kamiokande," Y.Takeuchi et al., (The Super-Kamiokande Collaboration), *Phys. Lett. B* **452**, 418 (1999).
15. "Constraints on Neutrino Oscillation Parameters from the Measurement of Day-Night Solar Neutrino Fluxes at Super-Kamiokande," Y.Fukuda et al., (The Super-Kamiokande Collaboration), *Phys. Rev. Lett.* **82** 9, 1810 (1999).
16. "Measurement of the Flux and Zenith-Angle Distribution of Upward Throughgoing Muons by Super-Kamiokande," Y.Fukuda et al., (The Super-Kamiokande Collaboration), *Phys. Rev. Lett.* **82** 13, 2644 (1999).
17. "Measurement of the Solar Neutrino Energy Spectrum Using Neutrino-Electron Scattering," Y.Fukuda et al., (The Super-Kamiokande Collaboration), *Phys. Rev. Lett.* **82** 12, 2430 (1999).
18. "Calibration of Super-Kamiokande using an electron LINAC," M.Nakahata et al., (The Super-Kamiokande Collaboration), *Nucl. Inst. Meth. A* **421**, 113 (1999).
19. "Evidence for Oscillation of Atmospheric Neutrinos," Y.Fukuda et al., (The Super-Kamiokande Collaboration), *Phys. Rev. Lett.* **81** 8, 1562 (1998).
20. "Measurement of the Solar Neutrino Flux from Super-Kamiokande's First 300 Days," Y.Fukuda et al., (The Super-Kamiokande Collaboration), *Phys. Rev. Lett.* **81** 6, 1158 (1998).

21. "Search for Proton Decay via  $p \rightarrow e^+\pi^0$  in a Large Water Cherenkov Detector," M.Shiozawa et al., (The Super-Kamiokande Collaboration), *Phys. Rev. Lett.* **81** 16, 3319 (1998).
22. "Study of the atmospheric neutrino flux in the multi-GeV energy range," Y.Fukuda et al, (The Super-Kamiokande Collaboration), *Phys. Lett. B* **436** 6, 33 (1998).
23. "Measurement of a Small Atmospheric  $\nu_\mu/\nu_e$  Ratio," Y. Fukuda et al., (The Super-Kamiokande Collaboration), *Phys. Lett. B* **433**, 9 (1998).

### Other Publications and Presentations

1. "Results from the Milagro Gamma-Ray Observatory" E. Blaufuss, Contributed paper and presentation to the 8th International Workshop on Topics in Astroparticle and Underground Physics, Seattle, WA, USA (2003).
2. "Results from the Milagro Gamma-Ray Observatory" E. Blaufuss, Invited paper and presentation to the 2nd Veritas Symposium on TeV Astrophysics of Extragalactic Sources, Chicago, IL, USA (2003).
3. "The Flux and Spectrum of Solar Neutrinos at Super-Kamiokande" E. Blaufuss, Contributed paper and presentation to the 27th International Cosmic Ray Conference, Hamburg, Germany (2001).
4. "Measurement of Solar Neutrinos in Super-Kamiokande" E. Blaufuss, Contributed presentation to the April 2000 APS meeting, Long Beach, CA, USA (2000).
5. "LINAC Calibration at Super-Kamiokande," E. Blaufuss, N.Sakurai. Invited poster presentation at Neutrino 98, Takayama, Japan (1998).