

Curriculum Vitae

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Education:

B.S. 1974 Cornell University Applied & Engineering Physics (with distinction)
M.A. 1976 Princeton University Physics
Ph.D. 1979 Princeton University Physics

Positions:

Astronomy and Astrophysics Center, The University of Chicago, Chicago IL
Robert R. McCormick Postdoctoral Fellow, 1979–1981
Research Associate, 1981–1982
Senior Research Associate, 1982–1983
Department of Physics, University of Florida, Gainesville FL
Assistant Professor of Physics, 1983–1989
Associate Professor of Physics, 1989–1995
Professor of Physics, 1995–
Graduate Coordinator, 1989–1992, 2008–2011
Graduate Council, 1990–1991

Visiting Positions:

Institute of Astronomy, Cambridge University, Cambridge England
Visiting Scholar, March–June 1982
Institute for Theoretical Physics, University of California, Santa Barbara CA
Visiting Assistant Research Scientist, January–June 1984
NASA/Fermilab Astrophysics Center, Fermi National Accelerator Laboratory
Visiting Scientist, September 1992–May 1993
Institut d’Astrophysique de Paris, 98 bis Boulevard Arago, 75014 Paris France
CNRS *Poste Rouge*, September–December 2002
Research in Paris *Bourse de Recherche*, February–August 2012

Professional Memberships:

American Astronomical Society
American Physical Society
Astronomical Society of the Pacific

Honors:

Named Fellow of the Astrophysics Division of the American Physical Society, 2005
For important contributions to the theory of large-scale cosmological structure, emphasizing nonlinear effects and higher order correlations.

Publications

- “Statistical analysis of catalogs of extragalactic objects. IX. The four-point galaxy correlation function,” J.N. Fry and P. J. E. Peebles, *Astrophys. J.*, 221, 19 (1978).
- “On the description and development of large clusters of galaxies through the cluster-galaxy correlation functions,” Ph.D. thesis, Princeton University (1979, unpublished).
- “Monte Carlo model for the evolution of the galaxy correlation functions,” J.N. Fry and P. J. E. Peebles, *Astrophys. J.*, 236, 343 (1980).
- “Statistical analysis of catalogs of extragalactic objects. XII. The cluster-galaxy-galaxy three-point correlation function,” J.N. Fry and P. J. E. Peebles, *Astrophys. J.*, 238, 785 (1980).
- “Unification, monopoles, and cosmology,” J.N. Fry and D. N. Schramm, *Phys. Rev. Lett.*, 44, 1361 (1980).
- “Evolution of cosmological baryon asymmetries. I. The role of gauge bosons,” J.N. Fry, K. A. Olive, and M. S. Turner, *Phys. Rev. D*22, 2953 (1980).
- “Evolution of cosmological baryon asymmetries. II. The role of Higgs bosons,” J.N. Fry, K. A. Olive, and M. S. Turner, *Phys. Rev. D*22, 2977 (1980).
- “Hierarchy of cosmological baryon generation,” J.N. Fry, K. A. Olive, and M. S. Turner, *Phys. Rev. Lett.*, 45, 2074 (1980).
- “Dynamical friction and massive neutrinos,” in *Proceedings of the Neutrino Mass Miniconference at Telemark, Wisconsin*, ed. V. Barger and D. Cline, p. 81 (1980).
- “Gravitational correlations and the monopole problem,” J.N. Fry, *Astrophys. J. Lett.*, 246, L93 (1981).
- “Baryogenesis without the initial presence of superheavy bosons,” M. S. Turner and J.N. Fry, *Phys. Rev. D*24, 3341 (1981).
- “Note on the redshift-magnitude controversy,” EFI Preprint 81-19 (1981, unpublished).
- “Transform analysis of the high resolution Shane-Wirtanen Catalog,” J.N. Fry and M. Seldner, *Astrophys. J.*, 259, 474 (1982).
- “The four-point function in the BBGKY hierarchy,” J.N. Fry, *Astrophys. J.*, 262 424 (1982).
- “Cosmological Grand Unification Monopoles: Astrophysical Constraints,” in *The Birth of the Universe*, Proceedings of the 1982 Moriond Astrophysics meeting, ed. J. Audouze and J. Tran Thanh Van, p. 125 (1982).
- “Cosmological effects of primeval fermion degeneracy in the Grand Unified Theories” (pre-printed as “Alternative Grand Unified Cosmology”), J.N. Fry and C. J. Hogan, *Phys. Rev. Lett.* 49, 1873 (1982).
- “Hierarchy of cosmological baryon generation,” J.N. Fry, K. A. Olive, and M. S. Turner, reprinted in *Unity of Forces in the Universe*, ed. A. Zee (Singapore: World Scientific, 1982), p. 637.

- “Grand Unification and cosmology,” in *The Origin and Evolution of Galaxies*, Proceedings of the 1981 Erice NATO Advanced Study Institute, ed. B. J. T. Jones and J. E. Jones (1983), p. 65.
- “A new evaluation of the four-point galaxy correlation function amplitudes,” J. N. Fry, *Astrophys. J.*, 267, 483 (1983).
- “Baryogenesis and Supersymmetric GUTs,” J. N. Fry and M. S. Turner, *Phys. Lett.* 125B, 379 (1983).
- “Correlation functions in a filamentary clustering prescription,” J. N. Fry, *Astrophys. J. Lett.*, 270, L31 (1983).
- “Galaxy N -point correlation functions: Theoretical amplitudes for arbitrary N ,” J. N. Fry, *Astrophys. J. Lett.*, 277, L5 (1984).
- “The galaxy correlation hierarchy in perturbation theory,” J. N. Fry, *Astrophys. J.*, 279, 499 (1984).
- “Supermassive monopole stars,” J. N. Fry and G. M. Fuller, *Astrophys. J.*, 286, 397 (1984).
- “Cosmological density fluctuations and large-scale structure: From N -point correlation functions to the probability distribution,” J. N. Fry, *Astrophys. J.*, 289, 10 (1985).
- “Statistical comparison of galaxy formation models: The bispectrum,” J. N. Fry and A. L. Melott, *Astrophys. J.*, 292, 395 (1985).
- “QSO metal-line absorbers: The key to large-scale structure?” A. P. S. Crotts, A. L. Melott, D. G. York, and J. N. Fry, *Phys. Lett.* 155B, 251 (1985).
- “Statistical measures of density in exotic cosmologies,” J. N. Fry, *Phys. Lett.* 158B, 211 (1985).
- “An independent test of biased galaxy formation with cold particles: The three-point correlation function,” A. L. Melott and J. N. Fry, *Astrophys. J.*, 305, 1 (1986).
- “Statistics of voids in hierarchical universes,” J. N. Fry, *Astrophys. J.*, 306, 358 (1986).
- “On statistical searches for filaments,” J. N. Fry, *Astrophys. J.*, 306, 366 (1986).
- “Nonlinear statistics and biasing,” J. N. Fry, *Astrophys. J. Lett.*, 308, L71 (1986).
- “On the origin of cosmological density fluctuations,” in *Chaotic Phenomena in Astrophysics*, ed. J. R. Buchler and H. Eichhorn, N. Y. Acad. Sci. 497, 66 (1987).
- “Voids and scaling in cosmology,” J. N. Fry, *Publ. Astron. Soc. Pac.*, 100, 1336 (1988).
- “Void statistics, scaling, and the origins of large-scale structure,” J. N. Fry, R. Giovanelli, M. Haynes, A. L. Melott, and R. Scherrer, *Astrophys. J.*, 340, 11 (1989).
- “Cosmological structure formation from soft topological defects,” C. T. Hill, D. N. Schramm and J. N. Fry, *Comments Nucl. Part. Phys.*, 19, 25 (1989).
- “Large-scale correlations and dark matter,” in *Dark matter in the universe*, Proceedings of the 1988 Erice NATO Advanced Study Institute, ed P. Galeotti and D. N. Schramm (Dordrecht/Boston: Kluwer Academic, 1990).

- “Growth of nonlinear cosmological structure,” J. N. Fry and L. Ruamsuwan, *Ann. N. Y. Acad. Sci.* 631, 40 (1991).
- “Fourier spectra of three-dimensional data,” D. Baumgart and J. N. Fry, *Astrophys. J.*, 375, 25 (1991).
- “The three-point function in an ensemble of numerical simulations,” J. N. Fry, A. L. Melott, and S. F. Shandarin, *Astrophys. J.*, 393, 431; accompanying Videotape, Segment 1 (1992).
- “Stability of scale-invariant nonlinear gravitational clustering,” L. Ruamsuwan and J. N. Fry, *Astrophys. J.*, 396, 416 (1992).
- “Cosmic microwave background anisotropies from plausible double inflation,” J. N. Fry and Y. Wang, *Phys. Rev. D* 46, 3318 (1992).
- “The three-point function in an ensemble of three-dimensional simulations,” J. N. Fry, A. L. Melott, and S. F. Shandarin, *Astrophys. J.*, 412, 504 (1993).
- “Biasing and hierarchical statistics in large-scale structure,” J. N. Fry and E. Gaztañaga, *Astrophys. J.*, 413, 447 (1993).
- “The minimal power spectrum: Higher order contributions,” J. N. Fry, *Astrophys. J.*, 421, 21 (1994).
- “Redshift distortions of galaxy correlation functions,” J. N. Fry and E. Gaztañaga, *Astrophys. J.*, 425, 1 (1994).
- “Skewness in the galaxy distribution and non-Gaussian initial conditions,” J. N. Fry and R. J. Scherrer, *Astrophys. J.*, 429, 36 (1994).
- “Gravity, bias, and the galaxy three-point correlation function,” J. N. Fry, *Phys. Rev. Lett.* 73, 215 (1994).
- “Biased power spectrum and bispectrum for an ensemble of three-dimensional scale-free numerical simulations,” J. N. Fry, A. L. Melott, and S. F. Shandarin, *Mon. Not. R. Astron. Soc.* 274, 745 (1995).
- “The evolution of bias,” J. N. Fry, *Astrophys. J. Lett.*, 461, L65 (1996).
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- “Gravity and Large Scale Structure: Observational Evidence,” J. N. Fry, in *Long-Range Correlations in Astrophysical Systems*, ed. J. R. Buchler, J. W. Dufty, and H. E. Kandrup, *Ann. N. Y. Acad. Sci.*, 848, 62 (1998).
- “Large-scale Structure and the Redshift-Distance Relation,” M. A. Jones and J. N. Fry, [astro-ph/9804213](#); *Astrophys. J. Lett.*, 500, L75 (1998).
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- “Effects of Inhomogeneities on Cosmic Expansion,” E. R. Siegel and J. N. Fry, *astro-ph/0504421*; *Astrophys. J. Lett.*, 628, L1 (2005).
- “Effects of Inhomogeneities on Cosmic Expansion,” E. R. Siegel and J. N. Fry, in *Inflating Horizons of Particle Astrophysics and Cosmology*, Proceedings of Yamada Conference LIX, ed. H. Suzuki, J. Yokoyama, Y. Suto, K. Sato (Tokyo, Universal Academy Press, 2006), p. 229.
- “Cosmological Structure Formation Creates Large-Scale Magnetic Fields,” E. R. Siegel and J. N. Fry, *astro-ph/0604526*; *Astrophys. J.*, 652, 627 (2006).
- “Can Electric Charges and Currents Survive in an Inhomogeneous Universe?”, E. R. Siegel and J. N. Fry, *astro-ph/0609031*.
- “Probing Dark Matter Substructure with Pulsar Timing”, E. R. Siegel, M. P. Hertzberg, and J. N. Fry, *astro-ph/0702546*; *Mon. Not. R. Astron. Soc.*, 382, 879 (2007).

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- “Weakly Nonlinear Dynamics and the σ_8 Parameter”, R. Juszkiewicz, H. A. Feldman, J. N. Fry, and A. H. Jaffe, [arXiv:0901.0697](#); *J. Cosmol. Astropart. Phys.* JCAP02(2010)021.
- “Anisotropic quasiparticle lifetimes in Fe-based superconductors,” A. F. Kemper, M. M. Korshunov, T. P. Devereaux, J. N. Fry, H.-P. Cheng, and P. J. Hirschfeld, [arXiv:1102.1422](#); *Phys. Rev. B* 83, 184516 (2011).
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- “Gaussianizing the non-Gaussian lensing convergence field I: the performance of the Gaussianization,” Y. Yu, P. Zhang, W. Lin, W. Cui, and J. N. Fry, [arXiv:1103.2858](#); *Phys. Rev. D* 84, 023523 (2011).
- “Gaussianizing the non-Gaussian lensing convergence field I: the applicability to noisy data,” Y. Yu, P. Zhang, W. Lin, W. Cui, and J. N. Fry, [arXiv:1201.4527](#); *Phys. Rev. D* 86, 023515 (2012).
- “Void Statistics and Hierarchical Scaling in the Halo Model,” J. N. Fry and S. Colombi, [arXiv:1305.5571](#); *Mon. Not. R. Astron. Soc.*, 433, 581.590 (2013).
- “Evolution of hierarchical clustering in the CFHTLS-Wide since $z \sim 1$,” M. Wolk, H. J. McCracken, S. Colombi, J. N. Fry, M. Kilbinger, P. Hudelot, Y. Mellier and O. Ilbert, [arXiv:1301.3301](#); *Mon. Not. R. Astron. Soc.*, 435, 2.17 (2013).
- “Resistance of Ag-silicene-Ag junctions: A combined nonequilibrium Green’s function and Boltzmann transport study,” Y.-P. Wang, J. N. Fry, and H.-P. Cheng, *Phys. Rev. B* 88, 125428 1.8 (2013) (as “Electron Transport Through Ag-Silicene-Ag Junctions,” [arXiv:1305.5285](#)).
- “Reversible spin polarization at hybrid organic-ferromagnetic interfaces,” Y. Wang, J. Che, J. N. Fry, and H.-P. Cheng, *J. Phys. Chem. Lett.*, 4, 3508.3512 (2013).

Books (Edited)

Dark Matter, Proceedings of the First IFT Workshop on Dark Matter, ed. R. D. Field, J. Fry, P. Ramond, and P. Sikivie, Int. J. Mod. Phys. D3, Suppl (Singapore, World Scientific, 1995).

The Onset of Nonlinearity in Cosmology, Proceedings of the 15th Florida Workshop in Nonlinear Astronomy and Physics, ed. J. N. Fry, J. R. Buchler, and H. Kandrup (N. Y. Acad. Sci., New York, 2001).

Book Reviews

Book *The large-scale structure of the universe* by P. J. E. Peebles (Princeton: Princeton University Press, 1980); review by J. N. Fry, C. Hogan, and D. N. Schramm, *Nature*, 292, 179 (1981).

Book *Neutrino 81*, Proceedings of the International Conference held at Maui, Hawaii, ed. R. J. Cence, E. Ma, and A. Roberts (University of Hawaii, 1981); review by D. N. Schramm and J. N. Fry, *Science*, 216, 617 (1982).

Book *Gauge theory and the early universe*, Proceedings of the Erice May 1986 NATO Advanced Study Institute, ed. P. Galeotti and D. N. Schramm (Dordrecht; Boston: Kluwer Academic, 1988); review *American Scientist*, 78, 465 (1990).