

Edison P. Liang
PUBLICATIONS

(Abbreviations: Ap.J. = Astrophysical Journal; Mon. Not. Roy. Ast. Soc. = Monthly Notices Royal Astronomical Society; **AIP Conf. Proc.** = American Institute of Physics Conference Proceedings; J. Math. Phys. = Journal of Mathematical Physics; Phys. Rev. = Physical Review; Gen. Rel. Grav. = General Relativity and Gravitation; Bull. = Bulletin; Lett. = Letters; Comm. = Communications).

MONOGRAPHS

1. "Gamma Ray Bursts," **AIP Conf. Proc.** No. 141, ed. with V. Petrosian, (New York: AIP 1986).

BOOK REVIEWS

1. University Astronomy by Pasachoff and Kutner, **American Scientist** 67, 350 (1979).
2. Restless Universe by Shipman, **American Scientist**, 67, 350 (1979).
3. The Big Bang by J. Silk, **American Scientist** (1981).
4. Emerging Cosmology by Sir Bernard Lovell, **American Scientist** (1982).

RESEARCH AND REVIEW ARTICLES

A. Relativity and Cosmology

1. with D. Eardley and R. Sachs
"Velocity-Dominated Singularity in Irrotational Dust Cosmologies," **J. Math. Phys.**, 13, 99 (1972).
2. "Velocity-Dominated Singularities in Irrotational Hydrodynamic Cosmological Models," **J. Math. Phys.**, 13, 386 (1972).
3. "Quantum Models for the Lowest Order Velocity-Dominated Solutions of Irrotational Dust Cosmologies," **Phys. Rev. D**, 5, 2458 (1972).
4. "Local Structure of Space-Time Singularity and Gravitational Collapse," **Lett. al Nuovo Cimento**, 6, 459 (1973).
5. "Normal-Dominated Singularities in Static Space-Times," **Comm. Math. Phys.**, 32, 51 (1973).
6. "A Note on Black Hole and Naked Singularity," **Lett. al Nuovo Cimento**, 7, 599 (1973).
7. "Some Exact Models of Inhomogeneous Dust Collapse," **Phys. Rev. D**, 10, 447 (1974).
8. with R. Bowers
"Anisotropic Spheres in General Relativity," **Ap. J.**, 188, 657 (1974).
9. "Equatorial Circular Orbits of Some Static Gravitational Fields with Naked Singularities," **Phys. Rev. D**, 9, 3257 (1974).
10. "Anisotropy and Large Scale Density Inhomogeneity in Non-rotating Cosmologies," **Phys. Lett.**, 51A, 141 (1975).
11. "A Note on Zeldovich's p=p Cold Big Bang," **Mon. Not. Roy. Ast. Soc.**, 171, 551 (1975).
12. "Dynamics of Primordial Inhomogeneities in Model Universes," **Ap. J.**, 204, 235 (1976).
13. "Relativistic Simple Waves: Shock Damping and Entropy Production," **Ap. J.** 211, 361 (1977).
14. "On the Binding Energy of Primeval Fluctuations," **Mon. Not. Roy. Ast. Soc.** 180, 117 (1977).
15. "Galaxies and Entropy from Nonlinear Fluctuations: A Simple Wave Analysis," **Ap. J.**, 216, 206 (1977).

16. with K. Baker
"Damping of Relativistic Shocks" **Phys. Rev. Lett.**, 39, 1 (1977).
17. "Entropy Generation in the Very Early Universe," **Phys. Rev. D**, 16, 3669 (1977).
18. "On Gravity as a Dispersive Force," Gravity Foundation Award Essay Honorable Mention, Gravity Foundation Bulletin (1978).
19. "Nonlinear Periodic Waves in a Self-Gravitating Fluid and Galaxy Formation," **Ap. J.**, 230, 325 (1979).
20. "Singularities in Irrotational Dust Collapse," GR8 Symposium Proceedings, **Gen. and Grav.** 10, 1051 (1979).
21. with M. P. Haugan
"Stability of Weyl Singularities in Nonspherical Gravitational Collapse" **Gen. Rel. and Grav.** 11, 223 (1979).
22. with R. K. Sachs
"Cosmology" invited article in the Einstein Centennial Volume, p. 329 A. Held and P. Bergmann, eds. (New York: Plenum, 1980).
23. "Conjecture on the Physical Origin of Cosmic Inhomogeneities," **Mon. Not. Roy. Astr. Soc.** 190, 743 (1980).
24. "Some Thoughts on the Origin of Cosmic Inhomogeneities," invited article in the A. H. Taub Festschrift Essays in General Relativity, F. Tipler, ed. (New York: Academic Press, 1980).
25. with H. Kurki-Suonio
"Red-shift Distance Relations in Inhomogeneous Shell Cosmologies" **Ap. J.** 390, 5 (1992)

B. Applied Physics

1. "Estimates of Air Column Density Evolution Behind Strong Airblasts,"
UCID 19429 (LLNL, TID 1982).
2. with J. Wong and J. Garrison
"Generalized Laser Filamentation Instability Coupled to Cooling Instability," **AIAA Conf. Rep.** No. 84-1621 (New York: 1984).
3. with Bruce Langdon
"Laser Filamentation in a Thermally Unstable Plasma" **Phys., Fluid** 30, 175 (1987).
4. with Charles Dermer
"Laser Cooling of Positronium," **Optics Comm.** 65, 419 (1988).
5. with C. Dermer and J.C. Weisheit
"Doppler Free Annihilation Radiation from Ultra-Cold Positronium", **UCRL-53689-87** (LLNL TID, 1988).
6. "Photoexcitation and Cooling of Positronium", **Proc. VIIIth Int. Conf. on Positronium Annihilation** (World Scientific, Singapore ,1989).
7. "Electron-Positron Plasmas and Their Possible Formation by High Intensity Lasers" **AIP Conf. Proc.** No. 318, ed. G. Miley, p.79 (1994).
8. with S. Wilks
"Pair Production by Ultra-Intense Lasers," **LLNL Workshop Proc.** TID #CONF - 960297, p.147 (LLNL, Livermore).
9. "Nova Experiments to Study the Interactions of SN1987A with Circumstellar", **LLNL Workshop Proc.** TID #CONF-960297, p.151 (LLNL, Livermore).
10. with R. London et al.
"Nova Experiments to Simulate the Interactions of SN1987A with Circumstellar Matter," **AIP Conf. Proc.** No.406, p.671, ed. G. Miley (AIP, NY 1997).
11. with S. Wilks et al
"Pair Production by Ultraintense Lasers", **Phy. Rev. Lett.** 81, 4887 (1998).
12. E. Liang
"Sustained Acceleration of Over-dense Plasmas by Colliding Laser Pulses. **AIP Conference Proceedings of Superstrong Fields in Plasmas Conf.**, ed D. Batnai & M. Lontano, No. 827, p.277 (AIP, NY 2006).
13. E. Liang
"Comoving Acceleration of Overdense Electron-Positron Plasma by Colliding Ultra-intense Laser Pulses", **Physics of Plasmas** 13, 064506 (2006).
14. E. Liang
"Sustained Comoving Acceleration of Overdense Plasmas by Colliding Laser Pulses". **Proceedings of ICFA 2005** 2007 In Press.

C. High Energy Astrophysics and Plasma Astrophysics

1. "Accretion Disk Corona and the Nature of X-ray Burster 3U1820-30," **Ap. J. Lett.**, 221, L67 (1977).
2. with R. Price
"Accretion Disk Coronas and Cygnus X-1" **Ap. J.**, 218, 247 (1977).
3. "Convective Accretion Disks and X-ray Bursters," **Ap. J.**, 218, 243 (1977).
4. "On the Hard X-ray Emission Mechanism of Active Galactic Nuclei Sources," **Ap. J. Lett.** 231, L111 (1979).
5. with K. A. Thompson
"Models of Unsaturated Black Holes Compton Disks Around Supermassive In Active Galaxies" **Mon. Not. Roy. Ast. Soc.** 189, 421 (1979).
6. "e±- Pair Production in Hot Unsaturated Compton Accretion Models around Black Holes," **Ap. J.** 234, 1105 (1979).
7. "Test of the Inverse Compton Model for Cygnus X-1," **Nature**, 283, 642 (1980).
8. with K. A. Thompson
"Transonic Disk Accretion onto Black Holes" **Ap. J.** 240, 271 (1980).
9. "The Cosmic X-ray Background and the Accretion of Intergalactic Gas onto Collapsed Objects," **Nature**, 286, 39 (1980).
10. "Inverse Comptonization and the Nature of the March 1979 gamma-ray Burst Event," **Nature**, 292, 319 (1981).
11. "Emission Mechanisms of the March 5, 1979, Gamma Ray Transient," AIP Proc. No. 77, p. 241, La Jolla Workshop on Gamma-Transients, R. Lingenfelter, ed. (New York: AIP 1981).
12. "On the Emission Mechanisms and Distances of Gamma Ray Bursts," **Nature** **299**, 321 (1982).
13. with P. Nolan
"Cyg X-1 Revisited" **Space Science Rev.** 38, 353 (1984).
14. "Two Dimensional Self-Similar Accretion Flows," **Ap. J.** 334, 339 (1988).
15. with T. E. Jernigan and R. Rodrigues
"Analyses of the Konus Catalogue of Gamma-Ray Bursts with the Thermal Synchrotron Model," **Ap. J.** 271, 766 (1983).
16. "On the Nature of Two Gamma Bursts with Spectral Evolutions Observed by the Konus Experiment," **Ap. J. Lett.** 268, L8 (1983).
17. with S. Antiochos
"Magnetic Flare Model of Gamma Ray Bursts" **Nature** 310, 121 (1984).
18. "Emission Model of Gamma Ray Bursts," **AIP Conf. Proc.** No. 101, e+e- Pair Workshop at GSFC, ed. Burns, Harding and Ramaty (New York: AIP 1983).
19. with R. Chevalier
"Interaction of Supernova Ejecta with Interstellar and Circumstellar Matter" **Annual NY Acad. Sci.** XI Texas Symp. Proc., D. Evans ed. (New York: A.P. 1983).
20. "Physics of the Synchrotron Model of Cosmic Gamma Ray Bursts," **AIP Conf. Proc.** No. 115, p. 597 Santa Cruz Summer Workshop, S. Woosley ed. (New York: AIP 1984).
21. "Resonant Absorption, Hot Electrons, and Cosmic Gamma Ray Bursts," **Ap. J. Lett.** 283, L21 (1984).
22. "Plasma Radiation During Gamma Ray Bursts," **Nature** 313, 202 (1985).
23. "Gamma Ray Burst Spectra and Energy Sources," Contribution to Chapters 4 and 5 in **AIP Conf. Proc.** No. 141; Stanford Gamma Ray Burst Workshop, E. Liang, V. Petrosian eds. (New York: AIP 1986).
24. with E. Canfield and M. Howard
"Inverse Comptonization by 1-D Relativistic Electrons," **Ap. J.** 323, 565 (1987).

25. "On the Emission Region of Gamma Ray Bursts," **XIX ICRC Proc.** Vol. 1, p.11, La Jolla, CA (1985).
26. "Gamma Ray Burst and Neutron Star Structure," **Proc. IV Marcel Grossmann Meeting on General Relativity**, R. Ruffini ed. p. 855 (Amsterdam: North Holland 1986).
27. "Gamma Burst Annihilation Lines and Neutron Star Structure," **Ap. J.** 304, 682 (1986).
28. "New Synchrotron Luminosity Distance Limit for the March 5th 1979 Event," **Ap. J. Lett.** 308, L17 (1986).
29. "Physics Issues of Gamma Ray Burst Emissions," **Comments Astrophys.** 12, 35 (1987).
30. "New Distance Limit for the 3-5-79 Source," **Proc. IAU Symp.** No. 125, Helfand and Huang ed. (Reidel 1987).
31. with M. Howard
"Inverse-Compton Model of Gamma Burst Spectra," **Proc. IAU Symp.** No. 125, Helfand and Huang ed. (Reidel 1987).
32. with C. Dermer
"Interpretation of the Gamma Ray Bump from Cygnus X-1," **Ap. J. Lett.** 325, L39 (1988).
33. with D. Band "Adiabatic Supernova Expansion into the Circumstellar Medium," **Proc. Penticton, B.C. SNR-ISM Symposium**, ed. T. Landecker et al. (1987).
34. with D. Band
"The Early Interaction of a Supernova with the Ambient Medium: I. Adiabatic Expansion," **Ap. J.** 334, 266 (1988).
35. "Spectral Models and Distance Limits for the Soft Gamma Ray Repeater 1806-20," **Nature** accepted (1988).
36. with C. Dermer
"Gamma Rays from Cygnus X-1: Modeling and Nonthermal Pair Production," **Conf. Proc.** No. 170, 326, ed. N. Gehrels and G. Share (AIP, N.Y. 1988).
37. "Spectral Modeling of the Soft Gamma Ray Repeater," **AIP Conf. Proc.** No. 170, 307, ed. N. Gehrels and G. Share (AIP, N.Y. 1988).
38. "Gamma Rays from Cygnus X-1: New Diagnostics for a Black Hole," **Proc. NATO ASI, VI Int'l Sch. Cosmic Rays**, Erice, Italy, ed. M. M. Shapiro p.73 (Kluwer Acad., Dordrecht, Holland, 1989).
39. with C. Dermer
"Electron Thermalization and Heating in Relativistic Plasmas," **Ap. J.** 339, 512 (1989).
40. with R. Chevalier
"The Interaction of Supernova with Circumstellar Bubbles," **Ap. J.** 344, 332 (1989).
41. "Gamma Ray Bursts: Confrontation Between Theory and Observational Data," **GRO Science Workshop Proc.** p.4-397, ed. N. Johnson (NASA, 1989)
42. "The Emission Region of Cygnus X-1 MeV Gamma Rays",
Ast. Ap. 227, 447 (1990).
43. "Gamma Ray Astronomy and Black Hole Astrophysics",
AIP Conf. Proc. No. 211, p.32, ed. P. Joss (AIP, NY, 1990).
44. with C. Dermer
"Thermal Pair-Cloud Model of MeV Gamma Ray Emissions from Cygnus X-1 and the Galactic Center", **Proc. XXIst ICRC** OG3.1-14 (1990)
45. with C. Dermer and E. Canfield
"Luminosity Enhancement Factor for Thermal Comptonization and the Electron Energy Balance," **Ap. J.** 369, 410 (1991).
46. with A. Wandel
"Luminosity Limit for Alpha-Viscosity Accretion Disks" **Ap. J.** 376, 746.
47. "Structure of Thermal Pair Clouds around Gamma Ray Emitting Black Holes" **Ap. J.** 367, 470 (1991).
48. with V. Kargatis
"Analysis of Gamma Ray Burst Spectra with Cyclotron Lines", Epstein , p.443 (AIP, NY, 1992).

49. with C. Dermer
"Gamma Rays from the Galactic Center", **LLNL ER&D** 8970-32 (1991).
50. with D. Hartmann et al.
"Gamma Ray Bursts and Neutron Star Field Decay", **Taos Gamma-Ray Burst Workshop Proc.**, ed. C. Ho and R. Epstein, p.45 (AIP, NY, 1992).
51. "Pulsed Gamma-Ray Emission from Young Neutron Stars",
Proc. Int. Conf. on High Energy Gamma Ray Ast., Ann Arbor, Michigan, ed. C. Akerlof, J. Matthews and J. van den Velde (AIP, NY, 1991).
52. "Line and Continuum Spectroscopy as Diagnostic Tools for
Gamma Ray Bursts", **AIP Conf. Proc. No. 232 Gamma-Ray Line Ap. Symp. in Paris/Saclay**, ed. N. Prantzos, p.380 (World Sci. 1991).
54. "On the Galactic Center Region Gamma Ray Source", **Proc. 1991 Tex-Mex Ast. Meeting**, ed. C.R. O'Dell et al (PASP, 1991).
55. with A. Wandel
"Hybrid Accretion Disks in AGN: I Structure and Spectra" **Ap. J.**380, 84 (1991).
56. with A. Wandel
"Unified Treatment of AGN Accretion Disks", **Proc. IAU Colloq. No. 129** in Paris: Structure and Emission Properties of Accretion Disks (Reidel, Holland, 1991)
57. with M. Tavani
"Soft Gamma Rays from Accreting Neutron Stars," submitted to **Ap. J.**(1992).
58. with K. Hurley, V. Kargatis et al
"Spectral Variations in Gamma Ray Bursts", **AIP Conf. Proc. No. 265**, ed. Paciesas and Fishman, p.195 (AIP, NY, 1992).
59. with V. Kargatis, K. Hurley et al
"Search for Luminosity-Spectral Hardness Correlations in SIGNE Gamma Ray", **AIP Conf. Proc. No. 265**, ed. Paciesas and Fishman, p.201 (AIP, NY, 1992).
60. "Physics Issues of Gamma Ray Burst Spectral Evolution",
AIP Conf. Proc. No. 265, ed. Paciesas and Fishman, p.246 (AIP, NY, 1992).
61. "Soft Gamma Rays from Black Holes versus Neutron Stars",
Proc. 2nd GRO Science Workshop at Annapolis, ed. Shrader, Gehrels and Dennis, p. 173 (NASA, 1992).
62. "X-Ray Detectability of Gamma-Ray Bursts from M31", **Ap. J. Lett.** 380, L55 (1992).
63. with H. Li,
"X-Ray Flashes from M31 Based on Extended Halo Models of Gamma Ray Bursts", **Ap. J. Lett.** 400, L59 (1992).
64. with H. Li,
"Possible Stellar Flare Contributions to the BATSE Gamma Ray Burst Database"**Ast. & Ap. Lett.** 273, L53 (1993).
65. with V. Kargatis et al
"Spectral Evolution of Gamma Ray Bursts Detected by the SIGNE Experiment I", **Ap. J.** 422, 260 (1994).
66. "Thermal Hard-X-Ray/Gamma Ray Emission of Disk-Accreting Black Holes", **AIP Conf. Proc. No. 280 Compton Cent. Symp.**, ed. M. Friedlander et al., p.396 (AIP, NY, 1993).
67. "Spectral Modeling of Gamma Rays from Black Hole Candidates", **AIP Conf. Proc. No.280 Compton Cent. Symp.**, ed. M. Friedlander et al. p.418. (AIP, NY, 1993).
68. with Hui Li,
"Models for the Spatial Distribution of Gamma Ray Bursts", **AIP Conf. Proc.No. 280 Compton Cent. Symp.**, ed. M. Friedlander et al. p.1099 (AIP, NY, 1993).
69. with M. Tavani,

- "Magnetic Field Reconnection and High Energy Emission from Accreting Neutron Stars", **AIP Conf. Proc. No. 280 Compton Cent. Symp.**, ed. M. Friedlander et al. p.428 (AIP, NY, 1993).
70. with C. Luo,
"Disk Oscillations and Their Application to GRO J0422+32", **AIP Conf. Proc.No. 280 Compton Cent. Symp.**, ed. M. Friedlander et al. p.30 (AIP, NY, 1993).
71. with V. Kargatis et al.
"Rapid Spectral Evolution of BATSE Gamma-Ray Bursts", **AIP Conf.Proc. No. 280 Compton Cent. Symp.**, ed. M. Friedlander et al. p.907 (AIP, NY, 1993).
72. with H. Li et al.
"Galactic Halo Model for Gamma-Ray Burst from High-Velocity Neutron Stars," **AIP Conf. Proc. No. 280 Compton Cent. Symp.**, ed. M. Friedlander et al. p.1035 (AIP, NY, 1993).
73. with V. Kargatis et al.
"Duration versus Brightness of Gamma-Ray Bursts: Comparisons between SIGNE and BATSE," **Ap. J. Letters** 421, L83 (1994).
74. with C. Luo
"Stability and Oscillations of Thermal Accretion Disks around Black Holes," **Mon. Not. Roy. Ast. Soc.** 266, 386 (1994).
75. "Pair Annihilation and Radio Emission from Galactic Black Holes," **AIP Conf. Proc. No. 304 2nd Compton. Symp.**, ed. C. Fichtel et al. p.166 (AIP, NY, 1994).
76. with C. Luo
"Spectral Fitting to Black Hole Candidates using Radial-Zoned Thermal Accretion Disk Model and Estimate of Alpha," **AIP Conf. Proc. No. 304 2nd Compton. Symp.**, ed. C. Fichtel et al. p.338 (AIP, NY, 1994).
77. with C. Meirelles
"Pair Production and Escape in Accretion Disks," **AIP Conf. Proc. No. 304 2nd Compton Symp.**, ed. C. Fichtel et al. p.299 (AIP, NY, 1994).
78. "X-Rays from Gamma Ray Bursts," **AIP Conf. Proc. No. 307**, ed. G. Fishman et al. p.662 (AIP, NY, 1994).
79. "A Cold Absorption Model of GRB Spectra," **AIP Conf. Proc. No. 307**, ed. G. Fishman et al. p.351 (AIP, NY, 1994).
80. with H. Li et al.
"Effects of Pulse Shape on the Details of the Fluence Edge for Short Bursts," **AIP Conf. Proc. No. 307**, ed. G. Fishman et al. p.217 (AIP, NY, 1994).
81. with V. Kargatis et al.
"Duration versus Brightness of GRBs," **AIP Conf. Proc. No. 307**, ed. G. Fishman et al. p.207 (AIP, NY, 1994).
82. with C. Luo et al.
"X-Ray Transitions of Black Hole Binaries and Variable Alpha-parameter Disks," **AIP Conf. Proc. No. 308**, ed. S. Holt & C. Day, p.75 (AIP, NY, 1994).
83. with V. Kargatis
"An Iron Absorption Model of Gamma-Ray Burst Spectra," **Ap. J. Letters** 432, L111 (1994).
84. with H. Li
"On Relativistic Ejections from GRS 1915+105," **Ast. Ap. Lett.** 298, L45 (1995).
85. with E. Fenimore
"Synchrotron Self-Absorption Model and Luminosity Distance of SGR 1806-20," **Ap. J. Letters** 451, L57 (1995).
86. "Models of Soft Gamma Repeater Emissions," **Ap. Sp. Sci.** 231, 69 (1995).
87. with V. Kargatis et al.
"Spectral Evolution of GRB Pulses", **Ap. Sp. Sci.** 231, 177 (1995).

88. with H. Li
"Formation and Radiation Acceleration of Pair Plasmoids in Galactic Black Holes," **Ap. J.** 458, 514 (1996).
89. with H. Li and E. Fenimore
"Detectability of Gamma-Ray Burst Excess Towards M31", **Ap. J.** 461, 73 (1996).
90. with V. Kargatis
"Dependence of the Spectral Evolution of Gamma-Ray Bursts on their Photon Fluence", **Nature** 381, 49 (1996).
91. with I. Smith et al.
"Hardness Ratio versus Duration for PVO compared to BATSE and PHEBUS", **AIP Conf. Proc.** No. 384, p.101 ed. Kouveliotou, C. et al. (AIP, NY 1996).
92. with G. Mathews
"Prospects of Fluorescence Nuclear Line Searches in GRB Afterglows" **AIP Conf. Proc.** No. 384, p.764, ed. Kouveliotou, C. et al. (AIP, NY 1996).
93. with H. Li and M. Kusunose
"Gamma Rays from Galactic Black Hole Candidates with Stochastic Particle Acceleration", **Ap. J.** 460, 29 (1996).
94. with S. Sheth et al.
"ASCA Measurement of the Hydrogen Column Density to 1E1740.7-2942", **Ap. J.** 468, 755 (1996).
95. with I. Smith et al.
"Multiwavelength Observation of the Soft Gamma-Ray Repeaters", **AIP Conf. Proc.** No.366, p. 79, ed. Rothschild, R. et al. (AIP, NY 1996).
96. with M. Tavani
"Hard X-Ray Emission from X-Ray Bursters", **Ast. Ap. Supp.** p. (1996).
97. with I. Smith et al.
"GRB970228", **IAUC** No. 6577 (1997).
98. with A. Crider et al.
"GRB970228", **IAUC** No. 6581 (1977).
99. with M. Kusunose et al.
"Physical Model of Gamma-Ray Burst Spectral Evolution", **Ap. J. Lett.** 479, L35 (1997).
100. with A. Crider et al.
"Evolution of the Low-Energy Photon Spectra in Gamma-Ray Bursts", **Ap. J. Lett.** 479, L39 (1997).
101. with I. Smith et al.
"GRB970508", **IAUC** No. 6663 (1997).
102. with J. Dobrinskaya et al.
"Timing Analysis of ASCA Data of Galactic Black Hole Candidates", **X-Ray Imaging and Spectroscopy of Cosmic Hot Plasmas**, p. 481, ed. Makino, F. and Mitsuda, K. (Univ. Acad. Press, Tokyo, 1997).
103. with I. Smith et al.
"Multiwavelength Observations of GX339-4", **AIP Conf. Proc.** No. 410, p.932, ed. Dermer, C. et al. (AIP, NY 1997).
104. with I. Smith et al.
"BIMA Observations of Gamma-Ray Bursters GRB970111 and GRB970508", **Ap. J. Lett.** 487, L5 (1997).
105. with R. Narayan
"Spectral Signatures and Physics of Black Hole Accretion Disks", **AIP Conf. Proc.** No. 410, p. 461, ed. Dermer, C. et al. (AIP, NY 1997).
106. with A. Crider et al.
"A Thermal - Nonthermal Inverse Compton Model for Cyg X-1", **AIP Conf. Proc.** No. 410, p. 868, ed. Dermer, C. et al. (AIP, NY 1997).
107. with S.N. Zhang et al.

- "Two Distinct States of Microquasars 1E1740.7-2942 and GRS1758-258", **AIP Conf. Proc.** No. 410, p.873, ed. Dermer, C. et al. (AIP, NY 1997).
- 108.with S. Sheth et al.
"Broad Band Spectra Modeling of Cyg X-1 and 1E1740.7", **AIP Conf. Proc.** No. 410, p.878, ed. Dermer, C. et al. (AIP, NY 1997).
- 109.with C. Luo et al.
"Global Spectra of Transonic Accretion Disks", **AIP Conf. Proc.** No. 410, p.992, ed. Dermer, C. et al. (AIP, NY 1997).
- 110.with I. Smith et al.
"Saturated Compton Scattering Model for the Soft Gamma-Ray Repeater Bursts", **AIP Conf. Proc.** No. 410, p.1512, ed. Dermer, C. et al. (AIP, NY 1997).
- 111."Gamma-Ray Bursts: Physics versus Astronomy", **Proc. of the 21st Century Chinese Astronomy Conf.** p.251, ed. Cheng, K. and Chan, K. (World Sci. Singapore, 1997).
- 112."X-Ray Strategies for Solving the Gamma-Ray Burst Mystery", **Proc. Allsky X-ray Observations in the Next Decade**, p. 177, ed. Matsuoka, M. and Kawai, N. (RIKEN, Japan 1997).
- 113."Saturated Compton Cooling Model of Cosmological Gamma-Ray Bursts", **Ap. J. Lett.** 491, L15 (1997).
- 114."Spectral Evolution of Gamma-Ray Bursts", **Proc. Texas Symp. in Chicago 1996**, p.488, ed. A. Olinto et al. (NYAcad Sci., NY 1997).
- 115.with I. Smith et al.
"GRB970228", **IAUC** No. 6577 (1997).
- 116.with A. Crider et al.
"GRB970228", **IAUC** No. 6581 (1997).
- 117.with M. Kusunose et al.
"Physical Model of Gamma-Ray Burst Spectral Evolution", **Ap. J. Lett.** 479, L35 (1997).
- 118.with A. Crider et al.
"Evolution of the Low-Energy Photon Spectra in Gamma-Ray Bursts", **Ap. J. Lett.** 479, L39 (1997).
- 119.with I. Smith et al.
"GRB970508", **IAUC** No. 6663 (1997).
- 120."Multiwavelength Signatures of Galactic Black Holes", **Phys. Reports** 302, 67 (1998).
- 121.with M. Boettcher
"Comptonization Signature in the Rapid Aperiodic Variability of Galactic Black Hole Candidates", **Ap. J.** 506, 281 (1998).
122. with R. Gruendl et al.
"The BIMA Search for Millimeter-Wavelength Counterparts to Gamma-Ray Bursts", **AIP Conf. Proc.** No. 428, p.576, ed. C. Meegan et al (AIP, NY 1998).
- 123."Saturated Compton Model of Cosmological Gamma-Ray Bursts", **AIP Conf. Proc.** No.428, p.813, ed. C. Meegan et al. (AIP, NY 1998).
- 124.with D. Lin,
"Emission and Cooling Processes in a Hybrid Thermal - Nonthermal Plasma", **AIP Conf. Proc.** No.428, p.756, ed. C. Meegan et al. (AIP, NY 1998).
- 125.with A. Crider et al.
"Confronting Synchrotron Shock and Inverse Compton Models with GRB Spectral Evolution", **AIP Conf. Proc.** No.428, p.359, ed. C. Meegan et al. (AIP, NY 1998).
- 126.with A. Crider et al.
"Testing the Invariance of Cooling Rate in Gamma-Ray Burst Pulses", **AIP Conf. Proc.** No.428, p.63, ed. C. Meegan et al. (AIP, NY 1998).
- 127.with C. Luo
"Transonic Black Hole Accretion Disks--A Unified Model of Optically Thin and Thick Disks", **Ap. J.** 498, 307 (1998).
- 128.with M. Boettcher et al.

- “Radiation Feedback in Hot Accretion Disk Corona Models and Application to GX339-4”, **Ast. Ap.** 339, 87 (1998).
129. with M. Boettcher
“Monte Carlo Simulations on the Rapid Aperiodic Variability of Galactic Black Hole Candidates”, **ASP Conf. Series** No. 161, p.129, ed. J. Poutanen and R. Svensson (ASP, SF 1999).
130. with M. Boettcher
“Monte Carlo Simulations on the Aperiodic Variability of Galactic Black Hole Candidates”, **Ap. Lett. & Comm.** 38, 169 (1999).
131. with C. Luo and D. Lin
“Global Structure and Spectra of Galactic Black Hole Accretion Disks”, **ASP Conf. Series** No. 161, p.343, ed. J. Poutanen and R. Svensson (ASP, SF 1999).
132. with D. Lin
“Spectral Properties of a Hybrid Thermal - Nonthermal Isotropic Plasma”, **Ast. Ap.** 341, 954 (1999).
133. with M. Boettcher et al.
“Time-Dependent Photoelectric Absorption, Photoionization and Fluorescence Line Emission in Gamma-Ray Bursts Environments”, **Ast. Ap.** 343, 111 (1999).
134. with A. Crider et al.
“GRB990123: The Case for Saturated Comptonization”, **Ap. J.** 519, L21 (1999).
135. with A. Crider et al.
“Spectral Hardness Decay with respect to Fluence in BATSE Gamma-Ray Bursts”, **Ap. J.** 519, 206 (1999).
136. with A. Crider et al.
“The hardness Evolution of Gamma-Ray Bursts Pulses”, **Ast. Ap. Supp.** 138, 401 (1999).
137. with A. Crider
“Testing for Synchrotron Self-absorption in GRB 990111”, **Ast. Ap. Supp.** 138, 405 (1999).
138. “Gamma-Ray Burst Spectral Turnover and the Saturated Compton Cooling Model”, **Ast. Ap. Supp.** 138, 529 (1999).
139. with M. Boettcher
“A New Model for the Hard Time Lags in Black Hole X-Ray Binaries”, **Ap. J. Lett.** 511, L37 (1999).
140. with I. Smith et al.
“Multiwavelength Observations of GX339-4 in 1996 I”, **Ap. J.** 519, 762 (1999).
141. with I. Smith et al.
“Multiwavelength Observations of GX339-4 in 1996 II”, **Ap. J.** 519, 779 (1999).
142. with D. Ryutov et al.
“Similarity Criteria for the Laboratory Simulations of Supernova Hydrodynamics”, **Ap. J.** 518, 821 (1999).
143. with K. Keilty
“An Analytic Approximation to Radiative Blast Wave Evolution”, **Ap. J.** 533, 890 (2000).
144. with Shigemori et al.
“Developing a Radiative Shock Experiment Relevant to Astrophysics”, **Ap. J.** 533, L159 (2000).
145. “Gamma-Ray Bursts and Other Transients: Challenges for Rapid-Response Optical Astronomy”, **1999 AMOS Tech. Conf. Proc.** p.370, ed. P. Kervin et al. (MEDB, Maui, HI 2000).
146. with M. Boettcher et al.
“Monte Carlo Simulations of Radiation from Compact Objects”, **AIP Conf. Proc.** No. 510, p. 245, ed. M. McConnell and J. Ryan (AIP, NY 2000).
147. with K. Keilty et al.

- “Numerical Simulation of Blast Waves Generated by Intense Lasers”, **Ap. J. Supp.** 217, April issue (2000).
148. with A. Crider et al.
 “Testing the Gamma-Ray Burst Blast Wave Model: A Primer”, **Ap. J. Supp.** 217, April (2000).
149. with K. Keilty et al.
 “Modeling of Laser Generated Radiative Blast Waves”, **Ap. J.** 538, 538, 645 (2000).
150. with D. Lin et al.
 “The Energy Dependence of the Aperiodic Variability for Cygnus X-1, GX339-4, GRX1758-258, and 1E1740.7-2942”, **Ap. J.** 531, 963 (2000).
151. with D. Lin et al.
 “Simultaneous Observations of GRS 1758-258 in 1997 by VLA, IRAM, SEST, RXTE and OSSE: Spectroscopy and Timing”, **Ap. J.** 532, 548 (2000).
152. with D. Lin et al.
 “Complex Phase Lag Behaviors of the 0.5-10 Hz QPOs of GRS1915+105”, **Ap. J. Lett.** 543, L141 (2000).
153. with A. Crider et al.
 “Time Profiles and Spectral Evolution of GRB Pulses”, **AIP Conf. Proc.** No. 526, p.446, ed. G. Fishman et al. (AIP, NY 2000).
154. with I. Smith et al.
 “Multiwavelength Studies of Galactic Black Holes using Integral”, **4th Integral Workshop Proceedings**, ESA SP-459, p.211, (ESA, Netherlands, 2001).
155. with M. Boettcher et al.
 “An Analytic Fit to the Monte-Carlo Spectra from Hybrid Thermal-Nonthermal Plasmas”, **4th Integral Workshop Proceedings**, ESA SP-459, 271 (ESA, Netherlands, 2001).
156. with M. Boettcher
 “Monte Carlo Simulations of High Energy Radiation from Compact Objects”, **4th Integral Workshop Proceedings**, ESA, Holland to appear (2001).
157. with M. Boettcher et al.
 “An Analytic Function Fit to Monte-Carlo X-and-Gamma-Ray Spectra from Thomson Thick Thermal/Nonthermal Hybrid Plasmas”, **Ap.J. Supp.** 135, 1 (2001).
158. with M. Boettcher
 “Monte Carlo Simulations of Thermal-Nonthermal Radiation from a Neutron Star Magnetospheric Shell”, **Ap. J.** 552, 248 (2001).
159. with D. Kocevski
 “An Analytic Model for Gamma-Ray Burst Pulse Profiles”, **20th Texas Symp.Proc.** AIP Conf. Proc. No. 586, p.623, ed. C. Wheeler et al. (AIP, NY 2001).
160. with M. Boettcher
 “Monte Carlo Simulations of High Energy Radiation from Compact Objects”, **4th Integral Workshop Proceedings**, ESA SP-459, 203 (ESA, Netherlands, 2001).
161. with C. Dermer & M. Boettcher
 “Pair Production and Radiation Effects in Clouds Illuminated by Gamma-Ray Sources”, **4th Integral Workshop Proceedings**, ESA SP-459, 161 (ESA, Netherlands, 2001).
162. with Keilty, K. et al.
 "Modeling of Radiative Blast Waves," **AIP Conference Proceedings**, 565,: 85-88. (AIP, NY, 2001).
163. with Boettcher, M.
 "Coupled Monte-Carlo/Fokker-Planck simulations of accretion onto magnetized neutron stars," **Bulletin of American Astronomical Society**, 32 (2000): 126.04.
164. with Boettcher, M., Fryer, C.L. & Smith, I.
 "On the detectability of delayed x-ray flashes from GRBs," **ESO Astrophysics Workshop Proceedings**, (2001).
165. with D. Kocevski

- “Analytic Modeling of GRB Spectral and Temporal Evolution”, **AIP Conf. Proc.** on Woodshole GRB Workshop, in press, ed. R. Vanderspek (AIP, NY, 2003).
166. with M. Boettcher & D. Kocevski
“Inverse Compton Model of GRB Spectra”, **AIP Conf. Proc.** on Woodshole GRB Workshop, in press, ed. R. Vanderspek (AIP, NY, 2003).
 167. E. Liang
“Generation and Astrophysical Applications of Relativistic Pair Plasmas with Ultra-Intense Lasers”, **AIP Conf. Proc.** 611, 369 (AIP, NY, 2002).
 168. E. Liang, K. Nishimura, H. Li and S.P. Gary
“Particle Energization in an Expanding Magnetized Relativistic Plasma”, **Phys. Rev. Lett.** 90, (8), 085001 (2003).
 170. Markus Boettcher, David Jackson and Edison Liang
“2-D Monte-Carlo/Fokker-Planck Simulation of Flares in Accretion Disk Corona Models”. **Astrophysical Journal**, **586** 2003: 389.
 171. Edison Liang and Dan Kocevski
“Analytic Modeling of GRB Spectral and Temporal Evolution”. **AIP Conference Proceedings**, 662 2003: 237.
 172. Felix Ryde, Dan Kocevski, Edison Liang
“Analytical Descriptions of Gamma-Ray Burst Pulses”. **AIP Conference Proceedings**, 662 2003: 286.
 173. Dan Kocevski and Edison Liang
“Explaining GRB Lag with Spectral Evolution”. **AIP Conference Proceedings**, 662 2003: 157.
 174. Edison Liang, Markus Boettcher and Daniel Kocevski
“Inverse Compton Model of Gamma-Ray Burst Spectra”. **AIP Conference Proceedings**, 662 2003: 295.
 175. Dan Kocevski and Edison Liang
“The Use of Epk Decay Rate to Find Standard Candles in GRBs”. **AIP Conference Proceedings**, 662 2003: 130.
 176. Edison Liang and Kazumi Nishimura
“Bifurcation and Lorentz Factor Scaling of Relativistic Magnetized Plasma Expansion” **Physical Review Letters**, 92 2004: 175005.
 177. Kazumi Nishimura, Edison Liang and S. Peter Gary
“Charge Separation Effects in Magnetized Electron-ion Plasma Expansion into a vacuum”. **Physics of Plasmas**, 10 2004: 4559.
 178. Kazumi Nishimura and Edison Liang
“Parameter study of the Diamagnetic Relativistic Pulse Accelerator in slab geometry I”. **Physics of Plasmas**, 11 2004: 4753.
 179. Edison Liang
“Particle Acceleration via Electromagnetic Plasma Expansion”. **Advance in Plasma Research** 2007 In Press
 180. Edison Liang
“Particle Acceleration via Relativistic Magnetic Dominated Expansion and GRBs”. **AIP Conference Proceedings**, 727 2004: 233.
 181. Daniel Kocevski, Felix Ryde and Edison Liang
“Search for Relativistic Curvature Effects in Gamma-ray burst pulses”. **Astrophysical journal** , 596 2003: 389.
 182. Daniel Kocevski and Edison Liang
“The connection between spectral evolution and GRB lag”. **Astrophysical journal**, 594 2003: 385.
 183. E. Liang, K. Noguchi and S. Wilks
“Acceleration of Overdense Plasmas using Colliding Laser Pulses”. **Bulletin of the American Physical Society**, 50 No.8 2005: 186.
 184. E. Liang and K. Noguchi

- “Particle Acceleration by Electromagnetic-Dominated Outflows”. **Revisita Mexicana Astronomy and Astrophysics**, 23 2005: 43-52.
185. E. Liang
“Particle Acceleration by Relativistic Electromagnetic Explosions”. **Chiba Conference Proceedings** (Chiba Univ. Japan 2005).
186. K. Noguchi and E. Liang
“Particle Acceleration in Electromagnetic Dominated Outflows with Background Plasmas and Clumps”. **Bulletin of the American Physical Society**, 50 No.8 2005: 61.
187. E. Liang
“Particle Acceleration in Relativistic Magnetized Plasmas”. **Astrophysics and Space Science**, 298 2005: 211-218.
188. E. Liang
“Particle Acceleration via Colliding Electromagnetic Pulses”. **Bulletin of the American Physical Society**, 50 No.2 2005: 113.
189. E. Liang and K. Noguchi
“Particle Acceleration via Electromagnetic Explosion and Gamma-ray Bursts.” **Bulletin of the American Astronomical Society**, 36 No.5 2005: 1617.
190. D. Kocevski, E. Liang
“Quantifying the Luminosity Evolution in Gamma-Ray Bursts”
Astrophysical Journal 642, 2006: 371-381.
191. K. Noguchi and E. Liang
“Radiative Effects on Particle Acceleration via Relativistic Electromagnetic Expansion”.
SLAC e-Conf, SLAC-R-752 2005: CO41213.
192. K. Noguchi, E. Liang and K. Nishimura
“Self-consistent Radiative Effect on Relativistic Electromagnetic Particle Acceleration”
Il Nuovo Cimento C, 28 2005: 381.
193. E. Liang, K. Noguchi and S. Wilks
“Sustained Particle Acceleration by Poynting Flux”. **Bulletin of the American Physical Society**, 50 No.8 2005: 178.
194. K. Noguchi and E. Liang
“Three-dimensional Relativistic Particle Acceleration by Magnetic Cylinder and Torus”.
Bulletin of the American Physical Society, 50 No.8 2005: 61.
195. E. Liang, K. Noguchi and S. Sugiyama,
“PIC Simulations of Prompt GRB Emissions”, **AIP Conf. Proc.** No. 836, p.157, ed. S. Holt et al (2006).
196. S. Sugiyama, E. Liang, K. Noguchi and H. Takabe
“Compton Spectrum from Poynting Flux Accelerated e+e- Plasma”, **AIP Conf. Proc.** No. 836, p.197, ed. S. Holt et al (2006).
197. K. Noguchi and E. Liang,
“Interaction of Electromagnetic-Dominated Outflow with Inhomogeneous Medium” **AIP Conf. Proc.** No. 836, p.456, ed. S. Holt et al (2006).
198. E. Liang and K. Noguchi
“Intrinsic radiation from Poynting jets and magnetized collisionless shocks: Implications for prompt GRB emissions”. **Il Nuovo Cimento** 2007 In Press
199. E. Liang, K. Noguchi and S. Wilks,
“PIC Simulations of Particle Acceleration by Colliding Ultra-intense Laser Pulses”
Bulletin of APS, 51 2006: 345.
200. E. Liang and K. Noguchi,
“Particle Acceleration and Radiation in Relativistic Collisionless Shocks”
Bulletin of APS, 51 2006: 145.
201. E. Liang and K. Noguchi
“Relativistic Plasmas: A New Interface between High Energy Astrophysics and Intense Laser Experiments”. **Bulletin of APS**, 51 2006: 252.
202. E. Liang

- ”Simulating Poynting Flux Acceleration in the Laboratory with Colliding Laser Pulses”
Astrophysics and Space Science 2007 In Press.
203. K. Noguchi and E. Liang
“A Radiative PIC Code with Self-consistent Radiation Damping”
J. Comp. Phys. submitted 2007.
204. E. Liang and K. Noguchi
“Radiation from Poynting Flux Acceleration”, **Astrophysical Journal** submitted 2007.
205. E. Liang and K. Noguchi
“Structure and Radiation of Relativistic Collisionless Shocks”, **Astrophysical Journal**
submitted 2007
206. K. Noguchi and E. Liang
“3D PIC Simulation of Shock produced by collision of Poynting Jet with Ambient Plasma”
Physics of Plasmas submitted 2007.