# Final Report
# UCLA IGPP Space Plasma Simulation Group
# NASA Grant NAG5-1100
# For Period November 1, 1988 – January 31, 1998

During the past 10 years the UCLA IGPP Space Plasma Simulation Group has pursued its theoretical effort to develop a Mission Oriented Theory (MOT) for the International Solar Terrestrial Physics (ISTP) program. This effort has been based on a combination of approaches: analytical theory, large scale kinetic (LSK) calculations, global magnetohydrodynamic (MHD) simulations and self-consistent plasma kinetic (SCK) simulations. These models have been used to formulate a global interpretation of local measurements made by the ISTP spacecraft. The regions of applications of the MOT cover most of the magnetosphere: the solar wind, the low- and high-latitude magnetospheric boundary, the near-Earth and distant magnetotail, and the auroral region. Most recent investigations include: plasma processes in the electron foreshock, response of the magnetospheric cusp, particle entry in the magnetosphere, sources of observed distribution functions in the magnetotail, transport of oxygen ions, self-consistent evolution of the magnetotail, substorm studies, effects of explosive reconnection, and auroral acceleration simulations. A complete list of the activities completed under the grant follow.

Invited Talks

1. Ogino, T., R. J. Walker, and M. Ashour-Abdalla, Magnetic flux ropes in 3-dimensional MHD simulations, Extended Abstract Volume, 161, AGU Chapman Conference on: Physics of Magnetic Flux Ropes, Hamilton, Bermuda, March 27-31, 1989.

2. Ogino, T.,R. J. Walker, and M. Ashour-Abdalla, Three-dimensional global MHD simulations of the earth's magnetosphere, XVI IAGA Scientific Assembly, Exeter, Great Britain, July 24 – August 4, 1989 (IAGA Bull., 53, 413, 1989).

3. Ashour-Abdalla, M., Role of simulations in future magnetospheric programs, Royal Swedish Academy of Sciences, Magnetospheric Physics: Achievements and Prospects, Stockholm, Sweden, September 27-29, 1989.

4. Walker, R. J., T. Ogino, and M. Ashour-Abdalla, Simulating the configuration and dynamics of the earth's magnetosphere, Gordon Conference on Modeling in Solar Terrestrial Physics, Plymouth, NH, July 30 - August 3, 1990.

5. Ashour-Abdalla, M., Progress report on the technology of theory for ISTP: Mission oriented theory, Inter-Agency Coordination of Solar-Terrestrial Science Projects (IACG) Meeting, Tenerife, Canary Islands, November 12-16, 1990.

6. Ogino, T., R. J. Walker, and M. Ashour-Abdalla, Global magnetohydrodynamic simulation of the solar wind and magnetosphere interaction, Western Pacific Geophysics Meeting, Kanazawa, Japan, August 21 - 25, 1990. (EOS Trans. AGU, 71, 28, 913, 1990).

7. Ashour-Abdalla, M., J. Berchem and D. Schriver, The origin and structure of the plasma sheet due to stochastic motion and plasma instabilities, International Topical Conference on Research Trends in Nonlinear Space Plasma Physics, La Jolla, February 1991.

8. Raeder, J., M. Ashour-Abdalla, and J. Berchem, Modeling the multiple ion dynamics of the magnetosphere, Fourth International School for Space Simulation (ISSS-4), Nara, Japan, April 2-6, 1991.

9. Ashour-Abdalla, M., Space Science in the ISTP era, with F. V. Coroniti, U. S.–Taiwan Bilateral Workshop on Solar Variability Effects on the Atmosphere and Space Processing, Taipei, Taiwan, May 1-3, 1991.

10. Ogino, T., M. Ashour-Abdalla, and R. J. Walker, Global MHD simulation of the solar wind-magnetosphere interaction during northward IMF, XX IUGG General Assembly Vienna, Austria, August 11-24, 1991.

11. Ashour-Abdalla, M., L. M. Zelenyi, D. Schriver and J. M. Bosqued, Signatures in the auroral zone due to the precipitation of plasma sheet particles, AGU Chapman Conference on Auroral Plasma Dynamics, Minneapolis, MN, October 21-25, 1991.

12. Ashour-Abdalla, M., J.M. Bosqued, M. El Alaoui, and L.M. Zelenyi, Auroral zone signatures of acceleration processes acting in the magnetotail, AGU Chapman Conference on Micro- and Meso-scale Phenomena in Space Plasmas, Kauai, Hawaii, February 17-22, 1992.

13. Schriver, D., and M. Ashour-Abdalla, Local dynamics in the auroral zone and the magnetotail that result from large scale plasma acceleration, AGU Chapman Conference on Micro- and Meso-scale Phenomena in Space Plasmas, Kauai, Hawaii, February 17-22, 1992.

14. Ashour-Abdalla, M., Chaotic acceleration of magnetotail ions and auroral arcs, International Conference on Substorms, ICS-1, Kiruna, Sweden, March 23-27, 1992.

15. Ashour-Abdalla, M., Mission oriented theory: Plasma dynamics of the distant geomagnetic tail, IACG Meeting, Airlie, Virginia, June 1-4, 1992.

16. Raeder, J., Electromagnetic simulations of the magnetosphere, (Abstract) 3rd Goddard Workshop on the Modeling and Physics of the Global Magnetosphere, NASA Goddard Space Flight Center, Maryland, June 1992.

17. Ashour-Adballa, M., D. Scriver, and L.M. Zelenyi, Understanding the Earth's deep magnetotail, 1992 STEP Symposium, Laurel, Maryland, August 10-14, 1992.

18. Schriver, D. and L. M. Zelenyi, Understanding the Earth's deep magnetotail, 1992 STEP Symposium, Laurel, MD, August 24-27, 1992.

19. Ashour-Adballa, M., Simulations of chaoric acceleration in magnetotail ions and auroral arcs, 29th Plenary Meeting of the Committee on Space Research (COSPAR), Washington, DC, August 1992.

20. Ashour-Adballa, M., L. Zelenyi and J. Berchem, Transport of plasma in the near earth plasma sheet, with, Third Huntsville Workshop on Magnetosphere/Ionosphere Plasma Models, Guntersville, AL, October 5-8, 1992.

21. Walker, R. J., T. Ogino, and Ashour-Adballa, M., Simulating magnetospheric convection, Third Huntsville Workshop on Magnetosphere/Ionosphere Plasma Models, Guntersville, AL, October 5-8, 1992.

22. Ashour-Abdalla, M., V. Peroomian and D. Schriver. Sources and losses of ring current particles, AGU, San Francisco, CA, December 7-11, 1992 (EOS Trans., 73, 472).

23. Berchem, J., J. Raeder, and M. Ashour-Abdalla, Small and large scale turbulence at the dayside magnetospheric boundary, Spatio-Temporal Analysis for Resolving Plasma Turbulence (START) Conference, Aussois, France, February 1-5, 1993.

24. Ashour-Abdalla, M., Mission-oriented theory: Campaigns to the internal boundaries, IACG Workshop, Graz, Austria, April 13-15, 1993.

25. Ashour-Abdalla, M., Richard, R. L. and R. J. Walker, The formation of the low latitude boundary layer by dayside ion entry, 1993 GEM Workshop, Snowmass, CO, June 28-July 2, 1993.

26. Ashour-Abdalla, M. and D. Schriver, Signatures of electron acceleration in the magnetotail, 1993 MIT Symposium/Cambridge Workshop on the Physics of Space Plasmas, MIT, Cambridge, Massachusetts, July 19-23, 1993.

27. Ashour-Abdalla, M., T. Burinskaya and D. Schriver, Intermittent wave activity in the plasma sheet boundary layer, , 1993 MIT Symposium/Cambridge Workshop on the Physics of Space Plasmas, MIT, Cambridge, Massachusetts, July 19-23, 1993.

28. Ashour-Abdalla, M. and L. M. Zelenyi, Large scale kinetic modeling of the magnetotail, IAGA 7th Scientific Assembly, Buenos Aires, Argentina, August 8-20, 1993.

29. Ashour-Abdalla, M., J. M. Bosqued, V. Peroomian, R. L. Richard, D. Schriver, and L. M. Zelenyi, Magnetotail and auroral dynamics, IAGA 7th Scientific Assembly, Buenos Aires, Argentina, August 8-20, 1993.

30. Berchem, J., J. Raeder, and M. Ashour-Abdalla, Small and large scale structures at the dayside magnetic boundary: Results from global MHD simulations, 1993 Magnetopause Workshop, Fairbanks, AK, September 20-23, 1993.

31. Berchem, J., J. Raeder, and M. Ashour-Abdalla, Microstructure of the subsolar magnetoshpeic boundary: Results from two-dimensional electromagnetic simulations, 1993 Magnetopause workshop, Fairbanks, AK, September 20-23, 1993.

32. Ashour-Abdalla, M., Internal magnetospheric boundaries, Seminaire Scientific du GDR Plasmae, Giens, October 12-15, 1993.

33. Ashour-Abdalla, M., Thermodynamic properties of the magnetotail, Seminaire Scientific du GDR Plasmae, Giens, October 12-15, 1993.

34. Ashour-Abdalla, M., Coroniti, F. V., L. A. Frank, W. R. Paterson, K. L. Ackerson, S. Kokubun, and D. H. Fairfield, Plasma distributions at the distant tail lobe-plasma sheet interface measured by the Geotail comprehensive plasma instrumentation, AGU, San Francisco, CA, December 6-10, 1993 (EOS Trans., 74, 533).

35. Ashour-Abdalla, M., L. A. Frank, W. R. Paterson, K. L. Ackerson, F. V. Coroniti, L. M. Zelenyi, S. Kokubun, D. H. Fairfield, and A. J. Lazarus, On cold ion beams in the distant tail, AGU, San Francisco, CA, December 6-10, 1993 (EOS Trans., 74, 528).

36. Ashour-Abdalla, M., G. L. Siscoe, L. A. Frank, K. L. Ackerson, and W. R. Paterson, Interpretation of long period velocity dispersive plasma events at 100 Re and beyond in terms of comparison with an expansion fan model, AGU, San Francisco, CA, December 6-10, 1993 (EOS Trans., 74, 528).

37. Ashour-Abdalla, M., L. A. Frank, W. R. Paterson, K. L. Ackerson, S. Kokubun, F. V. Coroniti, G. L. Siscoe, D. H. Fairfield, R. P. Lepping, and A. J. Lazarus, Recent results from plasma measurements in earth's magnetotail and its environs with the Geotail spacecraft, AGU, San Francisco, CA, December 6-10, 1993 (EOS Trans., 74, 527).

38. Ashour-Abdalla, M., L. M. Zelenyi, J. M. Bosqued, F. V. Coroniti, J. Dandouras, and L. A. Frank, Structure of ion flows in the Earth's magnetotail, International Conference on Substorms-2 (ICS-2), Fairbanks, Alaska, March 7-11, 1994.

39. Walker, R. J., R. L. Richard, and M. Ashour-Abdalla, The entry of solar wind ions into the magnetosphere, AGU Chapman Conference on Physics of the Magnetopause, San Diego, CA, March 14-17, 1994.

40. Berchem, J., J. Raeder, and M. Ashour-Abdalla, Reconnection at the magnetosphere boundary: Results from global MHD simulations, AGU Chapman Conference on Physics of the Magnetopause, San Diego, CA, March 14-17, 1994.

41. Walker, R. J., R. L. Rishard, T. Ogino, and M. Ashour-Abdalla, The entry of solar wind ions, in the magnetospere, Space Science Seminar, University of California, Berkeley, CA, April 1994.

42. Ashour-Abdalla, M., Cross-scale coupling and global coherence in geospace, AGU, Baltimore, MD, May 23-27, 1994 (EOS Trans., 75, 49).

43. Reader, J., Global MHD simulations of the Earth's magnetosphere, 4$^{th}$ Goddard Workshop on the Modeling and Physics of the Global Magnetosphere, Goddard Space Flight Center, June 1994.

44. Raeder, J., Global MHD simulation- predictive capabilities for space weather forecasting, NOAA/SEL seminar presentation, NOAA Space Environment Laboratory, June 1994.

45. Ashour-Abdalla, M., Possible generation mechanism for NEN observed in the tail, The Second Geotail Workshop/SWG, The Institute of Space and Astronautical Science, Tokyo, Japan, October 3-5, 1994.

46. Ashour-Abdalla, M., L. A. Frank, W. R. Paterson, J. Berchem, J. Raeder, F. V. Coroniti, G. L. Siscoe, S. Shodan, A. J. Lazarus, K. Paularena, K. L. Ackerson, S. Kokubun, T. Yamamoto, R. P. Lepping, and D. H. Fairfield, Plasma observations with the comprehensive plasma instrumentation (CPI) on board the Geotail spacecraft in the magnetotail: Nonadiabatic acceleration of ions, magnetotail breathing, wind sock effect, currents in magnetic flux ropes, ion beamlets, fractal analysis of velocity distributions, comparisons with MHD modeling, and two-component ion velocity distributions in the magnetosheath, The Second Geotail Workshop/SWG, The Institute of Space and Astronautical Science, Tokyo, Japan, October 3-5, 1994.

47. Ashour-Abdalla, M., Structure of the plasma sheet: A theoretical prediction, The Solar Terrestrial Energy Program (STEP) meeting, Nagoya University, October 6-7, 1994.

48. Ashour-Abdalla, M., Spatial structuring of the magnetotail – A mosaic-like pattern, Radio Atmospheric Science Center (RADC), Kyoto University, Japan, October 12, 1994.

49. Schriver, D. and M. Ashour-Abdalla, Small and large scale anomalous plasma transport in the Earth's magnetosphere, 1994 Huntsville Workshop on Coupling of Micro- and Mesoscale Processes in Space Plasma Transport, Huntsville, AL, October 16-19, 1994.

50. Berchem, J., Mission-oriented theory and visualization tools, Cluster Workshop on Physical Measurements and Mission Oriented Theory, toulouse, France, November 1994.

51. Kojima, H., H. Matsumoto, S. Horiyama, S. Chikuba, R. R. Anderson, Y. Omura, M. Ashour-Abdalla, I. Nagano, T. Mukai, L. A Frank, S. Machida, Y. Saito, M. Hirahara, W. R. Paterson, T. Yamamoto, and S. Kokubun, Broadband/Narrowband electrostatic emissions observed by GEOTAIL spacecraft in the geomagnetic tail region, 1994 Fall AGU Meeting, San Francisco, CA, December 5-9, 1994.

52. Ashour-Abdalla, M., L. M. Zelenyi, L. A. Frank, and W. R. Paterson, Chaos and regular particle motion in the magnetotail 1995 Cambridge Symposium/Workshop on Multiscale Phenomena in Space Plasmas, Bermuda, Feb. 20-25, 1995.

53. Berchem, J., J. Raeder, and M. Ashour-Abdalla, Large scale motion of the magnetospheric boundary: Comparison between Global MHD simulations and observations, 1995 Cambridge Symposium/Workshop on Multiscale Phenomena in Space Plasmas, Bermuda, Feb. 20-25, 1995.

54. Raeder, J., J. Berchem, and M. Ashour-Abdalla, Global MHD simulations and the parameterization of small scale processes, 1995 Cambridge Symposium/Workshop on Multiscale Phenomena in Space Plasmas, Bermuda, Feb. 20-25, 1995.

55. Schriver, D., M. Ashour-Abdalla, and R. Richard, Electron particle dynamics in the magnetotail, 1995 Cambridge Symposium/Workshop on Multiscale Phenomena in Space Plasmas, Bermuda, Feb. 20-25, 1995.

56. Walker, R. J., R. L. Richard, T. Ogino, and M. Ashour-Abdalla, Ion entry into the magnetosphere, 1995 Cambridge Symposium/Workshop on Multiscale Phenomena in Space Plasmas, Bermuda, Feb. 20-25, 1995.

57. Frank, L. A., W. R. Paterson, K. L. Ackerson, J. Seon, S. Kokubun, T. Yamamoto, M. Ashour-Abdalla, M. G Kivelson, G. L. Siscoe, S. Shodhan-Shah, R. P. Lepping, and D. H. Fairfield, Observations of plasmas in Earth's magnetotail with the Galileo and Geotail spacecraft, 1995 Cambridge Symposium/Workshop on Multiscale Phenomena in Space Plasmas, Bermuda, Feb. 20-25, 1995.

58. Burinskaya, T., D. Schriver, and M. Ashour-Abdalla, Generation of low-frequency electrostatic waves in the neutral sheet as a consequence of magnetotail ion dynamics, 1995 Cambridge Symposium/Workshop on Multiscale Phenomena in Space Plasmas, Bermuda, Feb. 20-25, 1995.

59. Raeder, J., Global MHD simulations: Ionoshpere and distant tail, UCLA Institute of Geophysics and Planetary Physics Seminar, 1995.

60. Ashour-Abdalla, M., The structure of magnetotail plasma, National Center for Atmospheric Research, High Altitude Observatory, Boulder, CO, May 11, 1995.

61. Ashour-Abdalla, M., Predicting large-scale motion of the magnetospheric boundary: Global MHD simulation results, AGU, Baltimore, MD, May 30-June 2, 1995 (EOS, 76, 257).

62. Ashour-Abdalla, M., L. A. Frank, M. G. Kivelson, S. Kokubun, T. Yamamoto, and R. P. Lepping, Plasma dynamics in Earth's magnetotail: Observations with the Geotail and Galileo spacecraft, 1995 IUGG Meeting, Boulder, CO, July 2-14, 1995.

63. Berchem, J., Mission oriented simulations: A tool for mission planning and data interpretation, 1995 IUGG Meeting, Boulder, CO, July 2-14, 1995.

64. Raeder, J., Structure and dynamics of the distant tail, GEM Snowmass meeting, Snowmass Village, CO, July 1995.

65. J. Berchem, J. Raeder, and M. Ashour-Abdalla, Consequences of magnetic reconnection at the magnetospheric boundary: Results from a global magnetosphere-ionosphere simulation model, 1995 IUGG Meeting, Boulder, CO, July 2-14, 1995.

66. L. A. Frank, W. R. Paterson, K. L. Ackerson, M. Ashour-Abdalla, F. V. Coroniti, G. L. Siscoe, S. Kokubun, and T. Yamamoto, Third Geotail Workshop, Plasma velocity distributions in the near-Earth plasma sheet: A first look Institute of Space and Astronautical Science, Sagamihara, Kanagawa 229, Japan, October 23-25, 1995.

67. Ashour-Abdalla, M., J. Berchem, F. V. Coroniti, M. El Alaoui, J. Raeder, R. Richard, D. Schriver, R. J. Walker, L. A Frank, W. R. Paterson, K. L. Ackerson, D. J Williams, A. T. Y. Lui., S. Kokubun, T. Yamamoto, R. P Lepping, and K. Ogilvie, Theoretical technology for the ISTP mission: Examples of theory-data closure, AGU, San Francisco, CA, December 11-15, 1995 (EOS, 76, F461).

68. Raeder, J., Using global MHD simulations for space weather forecasting, GEM Space Weather Workshop, NOAA/SEC, Boulderm Colorado, January 1996.

69. Raeder, J., Global MHD simulations: What does Earth's magnetosphere really look like?, Space Science laboratory, University of California, Berkeley, Colloquium, March 1996.

70. Raeder, J., J. Berchem, and M. Ashour-Abdalla, Global MHD modeling of substorms, ICS-3, Versailles, France, may 1996.

71. Ashour-Abdalla, M., J. Raeder, and J. Berchem, Global MHD modeling of substorms, International Conference on Substorms (ICS-3), Versailles, France, May 13-17, 1996.

72. Ashour-Abdalla, M., V. Peroomian, J. Berchem, M. El-Alaoui, J. Raeder, R. J. Walker, W. R. Paterson, L. A. Frank, S. Kokubun, T. Yamamoto, R. P. Lepping, and K. Ogilvie, The origin of nonisotropic protons in the near-Earth magnetotail, AGU, Baltimore, MD, May 20-25, 1996 (EOS, 77, S231).

73. Berchem, J., J. Raeder, M. Ashour-Abdalla, L. A. Frank, W. R. Paterson, K. L. Ackerson, S. Kokubun, T. Yamamoto, R. P. Lepping, and K. O. Ogilvie, AGU, WIND/GEOTAIL comparative studies of the dayside magnetospheric boundary: Initial results from Global MHD modeling, Baltimore, MD, May 20-25, 1996 (EOS, 77, S241).

74. Yin, L., M. Ashour-Abdalla, M. El-Alaoui, D. Schriver, J. M. Bosqued, N. Lormant, J. L. Bougeret, H. Matsumoto, and R. P. Lin, $f_{pe}$ and $2f_{pe}$ waves in the upstream solar wind region: Theory analysis of WIND observations, AGU, Baltimore, MD, May 20-25, 1996 (EOS, 77, S242).

75. Raeder, J., J. Berchem, M. Ashour-Abdalla, L. A. Frank, W. R. Paterson, K. L. Ackerson, S. Kokubun, T. Yamamoto, R. P. Lepping, and K. Ogilvie, The distant tail during strong northward IMF: Comparisons between Geotail observations and the results of global MHD simulations, AGU, Baltimore, MD, May 20-25, 1996 (EOS, 77, S243).

76. Raeder, J., Mass, momentum, and energy flow from the solar wind into Earth's magnetosphere, ionosphere, and thermosphere: Global MHD simulations, UCLA Dept. of Atmospheric Sciences, Colloquium, Los Angeles, California, May 1996.

77. Ashour-Abdalla, M. and D. Schriver, Large scale self-consistent simulations of the auroral zone, International Union of Radio Science (URSI), XXV General Assembly, Lille, France, August 28-September 5, 1996.

78. Ashour-Abdalla, M., L. M. Zelenyi, J. Berchem, M. El-Alaoui, V. Peroomian, J. Raeder, R. L. Richard, D. Schriver, R. J. Walker, L. A. Frank, W. R. Paterson, K. Ackerson, S. Kokubun, T. Yamamoto, R. P. Lepping, and K. Ogilvie, Determination of particle sources for observed distribution functions, 1996 Huntsville Workshop on "Encounter between global observations and models in the ISTP era, Guntersville, AL, September 15-20, 1996. (Abstract, pg. 18).

79. Ashour-Abdalla, M., R. Walker, and T. Ogino, Magnetosphere ionosphere coupling in global magnetohydrodynamic simulations, 1996 Huntsville Workshop on "Encounter between global observations and models in the ISTP era, Guntersville, AL, September 15-20, 1996. (Abstract, pg. 25).

80. Ashour-Abdalla, M., J. Berchem, J. Raeder, M. Ashour-Abdalla, L. A. Frank, W. R. Paterson, K. Ackerson, S. Kokubun, T. Yamamoto, R. P. Lepping, and K. Ogilvie, Large-scale dynamics of the magnetospheric boundary: Comparisons between global MHD simulation results and ISTP observations, 1996 Huntsville Workshop on "Encounter between global observations and models in the ISTP era, Guntersville, AL, September 15-20, 1996. (Abstract, pg. 116).

81. Ashour-Abdalla, M., J. Raeder, J. Berchem, R. J. Walker, M. El-Alaoui, L. A. Frank, W. R. Paterson, S. Kokubun, T. Yamamoto, R. Lepping, and K. Ogilvie, The structure of the magnetotail: Simulations and Geotail observations, 1996 Chapman Conference on "The Earth's Magnetotail: New Perspectives," Kanazawa, Japan, November 5-9, 1996.

82. El-Alaoui, M., M. Ashour-Abdalla, V. Peroomian, J. Raeder, L. A. Frank, W. R. Paterson, L. M. Zelenyi, R. P. Lepping, K. Ogilvie, S. Kokubun, and T. Yamamoto, Particle tracing in time-dependent MHD fields, 5th International School for Space Simulations (ISSS-5), Kyoto, Japan, March 1997.

83. Ashour-Abdalla, M., M. El-Alaoui, J. Raeder, V. Peroomian, J. M. Bosqued, D. J. Williams, and A. T. Y. Lui, Modeling the transport of oxygen ions using time dependent LSK in global MHD fields, AGU, Baltimore, MD, May 27-30, 1997 (EOS 78, S285).

84. Ashour-Abdalla, M., M. El-Alaoui, V. Peroomian, J. Raeder, L. A. Frank, and W. R. Paterson, Determining the sources and transport of particles in observed distribution functions, AGU, Baltimore, MD, May 27-30, 1997 (EOS, 78, S308).

85. Berchem, J., J. Raeder, M. Ashour-Abdalla, L. A. Frank,. W. R. Paterson, J. B. Sigwarth, S. Kokubun, T. Yamamoto, and R. P. Lepping, Large-scale dynamics of the magnetosphere: Comparison of global MHD simulation results with local observations and global imaging, AGU, San Francisco, CA, December 8-12, 1997 (EOS, 78, F611).

86. Ashour-Abdalla, M., M. El-Alaoui, V. Peroomian, J. Raeder, L. A. Frank, and W. R. Paterson, Determining the sources and the transport mechanisms of ions in the magnetotail by using correlative observations and numerical simulation, AGU, San Francisco, CA, December 8-12, 1997 (EOS, 78, F611).

Publications

1. Ashour-Abdalla, M. and D. Schriver, Acceleration and transport in the plasma sheet boundary layer, in *Solar System Plasma Physics*, edited by J. H. Waite, Jr., J. L. Burch and R. L. Moore, pp. 305-317, *Geophys. Monogr. Ser., 54*, AGU, Washington, D. C, 1989.

2. Walker, R. J., T. Ogino and M. Ashour-Abdalla, Simulating the magnetosphere: The structure of the magnetotail, in *Solar System Plasma Physics*, edited by J. H. Waite, Jr., J. L. Burch and R. L. Moore, pp. 61, *Geophys. Monogr. Ser., 54*, AGU, Washington, D. C., 1989.

3. Ogino, T., R. J. Walker and M. Ashour-Abdalla, Magnetic flux ropes in 3-Dimensional MHD Simulations, in *The Physics of Magnetic Flux Ropes*, edited by C. T. Russell, E. R. Priest, and L. C. Lee, pp. 669, *Geophys. Monogr. Ser., 58*, AGU, Washington DC, 1990.

4. Ashour-Abdalla, M. and F. V. Coroniti, Role of simulations in future magnetospheric programs, in *Magnetospheric Physics*, edited by B. Hultqvist and C. -G. Fälthammar, p. 175-190, Plenum Press, New York, 1990.

5. Ashour-Abdalla, M., J. Büchner, and L. M. Zelenyi, The quasi-adiabatic distribution in the central plasma sheet and its boundary layer, *J. Geophys. Res., 96*, 1601, 1991.

6. Ashour-Abdalla, M., J. Berchem, J. Büchner and L. M. Zelenyi, Chaotic acceleration of ions in the earth's magnetotail, *Geophys. Res. Lett., 17*, 2317, 1990.

7. Ashour-Abdalla, M., J. Berchem, F. V. Coroniti, J. Raeder, D. Schriver and R. J. Walker, Progress report on the technology of theory for ISTP: Mission oriented theory, UCLA PPG report no. 1336, November 1990.

8. Berchem, J., D. Schriver, and M. Ashour-Abdalla, Simultaneous excitation of broadband electrostatic noise and electron cyclotron waves in the plasma sheet, *Geophys. Res. Lett., 18*, 729, 1991.

9. Ashour-Abdalla, M., J. Berchem, J. Büchner and L. M. Zelenyi, Large and small scale structures in the plasma sheet: A signature of chaotic motion, *Geophys. Res. Lett., 18*, 1603, 1991.

10. Ashour-Abdalla, M., J. Berchem, F. V. Coroniti, and R. J. Walker, Mission-oriented theory: Plasma dynamics of the distant geomagnetic tail, (UCLA IGPP Publ. no. 3963, report for NASA Inter-Agency Consultative Group - IACG for Space Science).

11. Ashour-Abdalla, M., L. M. Zelenyi, J. M. Bosqued, and R. A. Kovrazkhin, Precipitation of fast ion beams from the plasma sheet boundary layer, *Geophys. Res. Lett., 19*, 617, 1992.

12. Ashour-Abdalla, M., D. Schriver, J. Berchem, J. Büchner, and L. M. Zelenyi, The origin and structure of the plasma sheet due to stochastic motion and plasma instabilities, in *Research Trends in Physics: Nonlinear Space Plasma Physics*, R. Z. Sagdeev, ed., American Institute of Physics, p. 3, 1993.

13. Ashour-Abdalla, L. Zelenyi, J. M. Bosqued, V. Peroomian, Z. Wang, D. Schriver, and R. L. Richard, Effects of near-earth stochastic acceleration and reflections of magnetotail ions on the formation of auroral arcs, in *Proceedings of the International Conference on Substorms, (ICS-1)*, Kiruna, Sweden, 23-27 March 1992, (*ESA SP-335*), p. 545-552, Noordwijk, The Netherlands, 1992.

14. Walker, R. J., T. Ogino, M. Ashour-Abdalla, and R. Raeder, A global magnetohydrodynamic simulation of magnetospheric dynamics when the IMF is southward: Mapping to the auroral zone, in *Proceedings of the International Conference on Substorms, (ICS-1)*, Kiruna, Sweden, 23-27 March 1992, (*ESA SP-335*), p. 571-576, Noordwijk, The Netherlands, 1992.

15. Ashour-Abdalla, M., J. Berchem, J. Büchner, and L. Zelenyi, Shaping of the magnetotail from the mantle: Global and local structuring, *J. Geophys. Res.*, *98*, 5651, 1993.

16. Wang, Z., M. Ashour-Abdalla, and R. J. Walker, On the electric field model for an open magnetosphere, *J. Geophys. Res.*, *98*, 21,277, 1993.

17. Schriver, D., and M. Ashour-Abdalla, Self-consistent formation of parallel electric fields in the auroral zone, *Geophys. Res. Lett.*, *20*, 475, 1993.

18. Coroniti, F. V.,. M. Ashour-Abdalla, and R. L. Richard, Electron velocity space hole mode, *J. Geophys. Res.*, *98*, 11,349, 1993.

19. Richard, R. L., M. Ashour-Abdalla, and F. V. Coroniti, Narrowband electrostatic noise in the distant magnetotail, *J. Geophys. Res.*, *98*, 11,359, 1993.

20. Ogino, T., R. J. Walker, and M. Ashour-Abdalla, A global magnetohydrodynamic simulation of the magnetosheath and magnetosphere when the interplanetary magnetic field is northward, *IEEE Trans. Plasma Sci.*, *20*, 6, 487, 1992.

21. Ashour-Abdalla, M., L. M. Zelenyi, J. M. Bosqued, V. Peroomian, Z. Wang, D. Schriver, and R. L. Richard, The formation of the wall region: Consequences of the near-earth magnetotail, *Geophys. Res. Lett.*, *19*, 1739, 1992.

22. Bosqued, J. M., M. Ashour-Abdalla, M. El Alaoui, L. M. Zelenyi, and A. Berthelier, AUREOL-3 observations of new boundaries in the auroral ion precipitation, *Geophys. Res. Lett.*, *20*, 1203, 1993.

23. Ashour-Abdalla, M., L. M. Zelenyi, V. Peroomian, and R. L. Richard, On the structure of the magnetotail current sheet, *Geophys. Res. Lett.*, *20*, 2019, 1993.

24. Ashour-Abdalla, M., D. Schriver, L. M. Zelenyi, J. M. Bosqued, and F. V. Coroniti, Mechanisms of particle precipitation: A controversial issue?, in *Physics of Space Plasmas (1992), SPI Conference Proceedings and Reprint Series*, *12*, pp. 97-122, 1993.

25. Bosqued, J. M., M. Ashour-Abdalla, M. El Alaoui, V. Peroomian, L. M. Zelenyi, and C. P. Escoubet, Dispersed ion structures at the poleward edge of the auroral oval: Low-altitude observations and numerical modeling, *J. Geophys. Res.*, *98*, 19,181, 1993.

26. Berchem, J., J. Raeder, and M. Ashour-Abdalla, Mission-oriented simulations of small and large scale structures in the dayside magnetosphere, in *Proceedings of the Spatio-Temporal Analysis for Resolving Plasma Turbulence (START) Conference*, Aussois, France, February 1993, (*ESA SP-047*) p. 393-408, 1993.

27. Kuznetsova, M. M., M. Roth, Z. Wang and M. Ashour-Abdalla, Effect of the relative flow velocity on the structure and stability of the magnetopause current layer, *J. Geophys. Res.*, *99*, 4095, 1994.

28. Ashour-Abdalla, M., J. Berchem, F. V. Coroniti, V. Peroomian, J. Raeder, R. L. Richard, D. Schriver, R. J. Walker, and L. M. Zelenyi, Mission-oriented theory: Campaigns to the internal boundaries, (UCLA IGPP Publ. no. 3946, report for NASA Inter-Agency Consultative Group - IACG for Space Science).

29. Ashour-Abdalla, M., L. M. Zelenyi, V. Peroomian, and R. L. Richard, Consequences of magnetotail ion dynamics, *J. Geophys. Res.*, *99*, 14,891, 1994.

30. Walker, R. J., T. Ogino, J. Raeder, and M. Ashour-Abdalla, A global magnetohydrodynamic simulation of the magnetosphere when the interplanetary magnetic field is southward: The onset of magnetotail reconnection, *J. Geophys. Res.*, *98*, 17,235, 1993.

31. Ashour-Abdalla, M., R. L. Richard, D. Schriver, L. Zelenyi, and J. Raeder, Understanding the earth's distant magnetotail, in *Solar Terrestrial Energy Program: The Initial Results from STEP Facilities and Theory Campaigns*, (Proceedings of the 1992 STEP Symposium/5th COSPAR Colloquium), Edited by D. N. Baker, V. O. Papitashvili, and M. J. Teague, Pergamon Press, Oxford, England, p. 709-722, 1994.

32. Walker, R. J., T. Ogino, and M. Ashour-Abdalla, Using global magnetohydrodynamic simulation to model auroral dynamics, in *Solar Terrestrial Energy Program: The Initial Results from STEP Facilities and Theory Campaigns*, (Proceedings of the 1992 STEP Symposium/5th COSPAR Colloquium), Edited by D. N. Baker, V. O. Papitashvili, and M. J. Teague, Pergamon Press, Oxford, England, p. 775-784, 1994.

33. Wang, Z., and M. Ashour-Abdalla, Simulation of magnetic field line stochasticity at the magnetopause, *J. Geophys. Res.*, *99*, 2321, 1994.

34. Burinskaya, T., D. Schriver, and M. Ashour-Abdalla, Propagation of whistler waves driven by fine structured ion beams in the magnetotail, *J. Geophys. Res.*, *99*, 8647, 1994.

35. Ogino, T., R. J. Walker, and M. Ashour-Abdalla, A global magnetohydrodynamic simulation of the response of the magnetosphere to a northward turning of the interplanetary magnetic field, *J. Geophys. Res.*, *99*, 11,027, 1994.

36. Burinskaya, T., D. Schriver, and M. Ashour-Abdalla, Generation of electrostatic waves as a consequence of chaotic ion acceleration in the neutral sheet, *Geophys. Res. Lett.*, *21*, 2083, 1994.

37. Richard, R. L., R. J. Walker, and M. Ashour-Abdalla, The population of the magnetosphere by solar wind ions when the interplanetary magnetic field is northward, *Geophys. Res. Lett.*, *21*, 2455, 1994.

38. Ashour-Abdalla, M., J. Berchem, F. V. Coroniti, J. Raeder, D. Schriver, and R. J. Walker, Mission-oriented theory for ISTP, in *The Global Geospace Mission*, Edited by C. T. Russell, Kluwer Academic Press, Dordrecht, The Netherlands, p. 647-669, 1995. (Also *Space Sci. Rev.*, *71*, 647-669, 1995).

39. Schriver, D. and M. Ashour-Abdalla, Signatures of electron acceleration in the magnetotail, in *Physics of Space Plasmas (1993)*, edited by T. Chang and J. R. Jasperse, pp. 403-422, *SPI Conference Proceedings and Reprint Series*, *13*, MIT Center for Theoretical Geo/Cosmo Plasma Physics, Cambridge, MA 1995.

40. Burinskaya, T., D. Schriver, and M. Ashour-Abdalla, Intermittent wave activity in the plasma sheet boundary layer, in *Physics of Space Plasmas (1993)*, edited by T. Chang and J. R. Jasperse, pp. 201-221, *SPI Conference Proceedings and Reprint Series*, *13*, MIT Center for Theoretical Geo/Cosmo Plasma Physics, Cambridge, MA 1995.

41. Raeder, J., R. J. Walker, and M. Ashour-Abdalla, The structure of the distant geomagnetic tail during long periods of northward IMF, *Geophys. Res. Lett.*, *22*, 249, 1995.

42. Schriver, D., V. I. Sotnikov, M. Ashour-Abdalla, and J. Ernstmeyer, Propagation of beam driven VLF waves from the ionosphere towards the ground, *J. Geophys. Res.*, *100*, 3693, 1995.

43. Berchem, J., J. Raeder, and M. Ashour-Abdalla, Reconnection at the magnetospheric boundary: Results for global MHD simulations, in *Physics of the Magnetopause*, *Geophys. Monogr. Ser.*, *90*, edited by P. Song, B. U. O. Sonnerup, and M. F. Thomsen, p. 205-213, AGU, Washington, DC, 1995.

44. Walker, R. J., R. L. Richard, and M. Ashour-Abdalla, The entry of solar wind ions into the magnetosphere, in *Physics of the Magnetopause*, *Geophys. Monogr. Ser.*, *90*, edited by P. Song, B. U. O. Sonnerup, and M. F. Thomsen, p. 311-319, AGU, Washington, DC, 1995 (IGPP Publ. #4169).

45. Ashour-Abdalla, M., L. M. Zelenyi, J. M. Bosqued, V. Peroomian, R. L. Richard, L. A. Frank, and J. Dandouras, Structure of plasma flows in the Earth's magnetotail, in *Proceedings of the Second International Conference on Substorms (ICS-2)*, edited by J. R. Kan, J. D. Craven, and S. -I. Akasofu, pp. 365-372, Geophysical Institute, Fairbanks, AK, 1994.

46. Schriver, D., and M. Ashour-Abdalla, Ion and Electron distribution near an X-line, in *Proceedings of the Second International Conference on Substorms (ICS-2)*, edited by J. R. Kan, J. D. Craven, and S. -I. Akasofu, pp. 503-508, Geophysical Institute, Fairbanks, AK, 1994.

47. Bosqued, J. M., M. Ashour-Abdalla, V. Peroomian, R. L. Richard, and L. M. Zelenyi, Auroral precipitation patterns: Observations and 3D simulations, in *Proceedings of the Second International Conference on Substorms (ICS-2)*, edited by J. R. Kan, J. D. Craven, and S. -I. Akasofu, pp. 111-118, Geophysical Institute, Fairbanks, AK, 1994.

48. Ogino, T., R. J. Walker, and M. Ashour-Abdalla, A global magnetohydrodynamic simulation of steady magnetospheric convection, in *Proceedings of the Second International Conference on Substorms (ICS-2)*, edited by J. R. Kan, J. D. Craven, and S. -I. Akasofu, pp. 545-551, Geophysical Institute, Fairbanks, AK, 1994.

49. Frank, L. A., M. Ashour-Abdalla, J. Berchem, J. Raeder, W. R. Paterson, S. Kokubun, T. Yamamoto, R. P. Lepping, F. V. Coroniti, D. H. Fairfield, and K. L. Ackerson, Observations of plasmas and magnetic fields in Earth's distant magnetotail: Comparison with a global MHD model, *J. Geophys. Res.*, *100*, 19,177, 1995.

50. Ashour-Abdalla, M., L. M. Zelenyi, V. Peroomian, R. L. Richard, and J. M. Bosqued, The mosaic structure of plasma bulk flows in the Earth's magnetotail, *J. Geophys. Res.*, *100*, 19,191, 1995.

51. Ashour-Abdalla, M., T. Chang, and P. Dusenbery (Eds.), Space Plasmas: Coupling Between Small and Medium Scale Processes, (Proceedings of the AGU Chapman Conference on Micro and Meso-scale Phenomena in Space Plasmas), *Geophys. Monogr. Ser.*, *86*, 390 pp., AGU, Washington, DC, 1995.

52. Berchem, J., J. Raeder, and M. Ashour-Abdalla, Magnetic flux ropes at the high-latitude magnetopause, *Geophys. Res. Lett.*, *22*, 1189, 1995.

53. Richard, R. L., L. M. Zelenyi, and M. Ashour-Abdalla, Modeling the linear transient response of the magnetotail to variations in the plasma mantle, *J. Geophys. Res.*, *100*, 21,835, 1995.

54. Sotnikov, V. I, D. Schriver, M. Ashour-Abdalla, J. Ernstmeyer, and N. Myers, Excitation of electron acoustic waves by a gyrating electron beam, *J. Geophys. Res.*, *100*, 19,765, 1995.

55. Berchem, J., J. Raeder, and M. Ashour-Abdalla, Visualization of numerical simulation results: An interactive tool for mission oriented theory, in *Proceedings of the Cluster Workshop on Physical Measurements and Mission Oriented Theory Toulouse*, France, 16–17 November 1994, (*ESA SP-371*), pp. 167–178, 1995.

56. Peroomian, V., and M. Ashour-Abdalla, Relative contribution of the solar wind and the auroral zone to near-Earth plasmas, in *Cross-scale coupling in space plasmas*, Edited by J. H. Waite, Jr., J. L. Burch, and R. L. Moore, pp. 213-217, *Geophys. Monogr. Ser.*, *93*, American Geophysical Union, Washington, DC, 1995.

57. Berchem, J., J. Raeder, R. J. Walker, and M. Ashour-Abdalla, Interactive visualization of numerical simulation results: A tool for mission planning and data analysis, in *Visualization techniques in space and atmospheric sciences (SP-519)*, Edited by E. P. Szuszczewicz and J. H. Bredekamp, pp. 131-141, NASA, Washington, DC, 1995.

58. Ashour-Abdalla, M., L. A. Frank, W. R. Paterson, V. Peroomian, and L. M. Zelenyi, Proton velocity distributions in the magnetotail: Theory and observations, *J. Geophys. Res.*, *101*, 2587, 1996.

59. Raeder, J., J. Berchem, and M. Ashour-Abdalla, The importance of small scale processes in global MHD simulations: Some numerical experiments, in *Physics of Space Plasmas (1995)*, Proceedings of the 1995 Cambridge Symposium/Workshop in Geoplasma Physics on "Multiscale Phenomena in Space Plasmas 14, edited by T. Chang and J. R. Jasperse, pg. 403-414, MIT Center for Theoretical Geo/Cosmo Plasma Physics, Cambridge, MA, 1996.

60. Walker, R., R. L. Richard, T. Ogino, and M. Ashour-Abdalla, Solar wind entry into the magnetosphere when the interplanetary magnetic field is southward, in *Physics of Space Plasmas (1995)*, Proceedings of the 1995 Cambridge Symposium/Workshop in Geoplasma Physics on "Multiscale Phenomena in Space Plasmas 14, edited by T. Chang and J. R. Jasperse, pg. 561-571, MIT Center for Theoretical Geo/Cosmo Plasma Physics, Cambridge, MA, 1996.

61. Ashour-Abdalla, M., L. M. Zelenyi, V. Peroomian, L. A. Frank, and W. R. Paterson, Coarse-grained texture of ion distributions in the magnetotail: A fractal-like approach, *J. Geophys. Res.*, *101*, 15,287, 1996.

62. Peroomian, V., and M. Ashour-Abdalla, Population of the near-Earth magnetotail from the auroral zone, *J. Geophys. Res.*, *101*, 15,387, 1996.

63. Burinskaya, T., V. Pivovarov, E. Indenbom, D. Schriver, and M. Ashour-Abdalla, Electrostatic waves near the field reversal region in the earth's magnetotail, *J. Geophys. Res.*, *101*, 17,337, 1996.

64. Ogino, T., R. J. Walker, and M. Ashour-Abdalla, An MHD simulation of energy flow in the solar wind, magnetosphere and ionosphere system steady convection events, *Adv. Space Res.*, *18*, 8, 247 1996.

65. Ashour-Abdalla, M., M. El-Alaoui, V. Peroomian, J. Raeder, R. J. Walker, R. L. Richard, L. M. Zelenyi, L. A. Frank, W. R. Paterson, J. M. Bosqued, R. P. Lepping, K. Ogilvie, S. Kokubun, and T. Yamamoto, Ion sources and acceleration mechanisms inferred from local distribution functions, *Geophys. Res. Lett.*, *24*, 955-958, 1997.

66. Kojima, H., H. Matsumoto, S. Chikuba, S. Horiyama, M. Ashour-Abdalla, and R. R. Anderson, GEOTAIL waveform observations of broadband/narrowband electrostatic noise in the distant tail, *J. Geophys. Res.*, *102*, 14,439, 1997.

67. Russell, C. T., G. Le, W.-W. Zhou, P. H. Reiff, J. G. Luhmann, C. A. Cattell, R. L. McPherron, and M. Ashour-Abdalla, Initial results from the Polar magnetic fields investigation, *Adv. Space Res.*, *20*, 833-839, 1997.

68. Ashour-Abdalla, M., M. El-Alaoui, V. Peroomian, J. Raeder, R. L. Richard, R. J. Walker, L. A. Frank, W. R. Paterson, and J. M. Bosqued, Ion sources and acceleration mechanisms inferred from local distribution functions, in Proceedings of the 1996 Huntsville Workshop, AGU, Washington, DC, in press 1997.

69. El-Alaoui, M., M. Ashour-Abdalla, J. Raeder, V. Peroomian, L. A . Frank, W. R. Paterson, and J. M. Bosqued, Modeling magnetotail ion distributions with global magnetohydrodynamic and ion trajectory calculations, in Proceedings of the 1996 Huntsville Workshop, AGU, Washington, DC, in press 1997.

70. Schriver, D., V. Sotnikov, M. Ashour-Abdalla, and V. Fiala, Two-dimensional saturation of broadband electron acoustic wav in the foreshock region, *J. Geophys. Res.*, in press 1998.

71. Peredo, M., S. A. Curtis, M. Ashour-Abdalla, J. Berchem, C. C. Goodrich, J. Lyon, J. Raeder, D. G. Sibek, and R. J. Walker, Evaluation of global MHD simulations for use by the ISTP program, *J. Geophys. Res.*, submitted, 1996.

72. Yin, L., M. Ashour-Abdalla, M. El-Alaoui, J. M. Bosqued, N. Lormant, J. L. Bougeret, H. Matsumoto, and R. P. Lin, Waves in the upstream solar wind region: Theory analysis of WIND observations, *Geophys. Res. Lett.*, submitted, 1996.

73. Richard, R. L., R. J. Walker, T. Ogino, and M. Ashour-Abdalla, Flux ropes in the magnetotail: Consequences for ion populations, *Adv. Space Res.*, *20*, 1017-1021, 1997.

74. Raeder, J., J. Berchem, M. Ashour-Abdalla, L. A. Frank, W. R. Paterson, K. L. Ackerson, S. Kokubun, T. Yamamoto, and J. A. Slavin, Boundary layer formation in the magnetotail: Geotail observations and comparisons with a global MHD simulation, *Geophys. Res. Lett.*, submitted 1996.

75. Ashour-Abdalla, M., J. Raeder, M. El-Alaoui, and V. Peroomian, Magnetotail structure and its internal particle dynamics during northward IMF, in *New Perspectives of the Earth's Magnetotail*, (Proceedings of the 1997 Chapman Conference) *Geophys. Monogr. Ser.*, AGU, Washington, DC, submitted 1997.

Contributed Talks

1. Walker, R. J., T. Ogino and M. Ashour-Abdalla, A magnetohydrodynamic simulation of the formation of magnetic flux tubes on the dayside magnetopause, AGU, San Francisco, December 1988 (*EOS, 69*, 1383).

2. Ogino, T., R. J. Walker and M. Ashour-Abdalla, A model of the effects of dipole tilt on the magnetospheric configuration and polar cap structure, AGU, San Francisco, December 1988 (*EOS, 69*, 1396).

3. Walker, R. J., T. Ogino and M. Ashour-Abdalla, Simulation studies of the dynamics of plasmoids and magnetic flux ropes in the magnetotail, Chapman Conference on Physics of Magnetic Flux Ropes, Hamilton, Bermuda, March 1989.

4. Ogino, T., R. J. Walker and M. Ashour-Abdalla, Magnetic flux ropes in 3-dimensional MHD simulations, Chapman Conference on Physics of Magnetic Flux Ropes, Hamilton, Bermuda, March 1989.

5. Ogino, T., R. J. Walker and M. Ashour-Abdalla, Finite $B_y$ effect on the structure of the magnetic flux ropes and plasmoids in the tail during southward IMF, AGU, Baltimore, May 1989 (*EOS, 70*, 436).

6. Ogino, T., R. J. Walker and M. Ashour-Abdalla, Three dimensional global MHD simulations of the Earth's magnetosphere, 6th Scientific Assembly of IAGA, Exeter, United Kingdom, July–August, 1989.

7. Walker, R. J., T. Ogino and M. Ashour-Abdalla, The effect of the IMF By component on the structure of plasmoids in the magnetotail, American Physical Society, Anaheim, California, November 1989. (*Bull. Am. Phys. Soc., 34*, 2008).

8. Wang, Z. and M. Ashour-Abdalla, The IMF influence on the formation of the magnetopause, AGU, San Francisco, California, December 1989 (*EOS, 70*, 1264).

9. Ogino, T., R. J. Walker and M. Ashour-Abdalla, A high resolution global MHD simulation of boundary layers in the Earth's magnetosphere, AGU, San Francisco, California, December 1989 (*EOS, 70*, 1294).

10. Walker, R. J., T. Ogino and M. Ashour-Abdalla, A global magnetohydrodynamic simulation of magnetotail convection during southward IMF, AGU, Baltimore, Maryland, May 1990 (*EOS, 71*, 595).

11. Berchem, J., D. Schriver and M. Ashour-Abdalla, Broadband electrostatic noise in the magnetotail: Comparison between observations and simulations, AGU, Baltimore, Maryland, May 1990 (*EOS, 71*, 604).

12. Ogino, T., R. J. Walker and M. Ashour-Abdalla, Using global magnetohydrodynamic simulations to map phenomena from the magnetosphere to the polar ionosphere, AGU, Baltimore, Maryland, May 1990 (*EOS, 71*, 604).

13. Ogino, T., H. Kajikawa, R. J. Walker and M. Ashour-Abdalla, Three-dimensional magnetohydrodynamic simulation of the interaction between the solar wind and an outflowing plasma, AGU, San Francisco, California, December 1990 (*EOS, 71*, 1509).

14. Raeder, J., J. Berchem, and D. Schriver, Simulations of broadband electrostatic noise from the lobe to the plasma sheet, AGU, San Francisco, California, December 1990 (*EOS, 71* 1551).

15. Peroomian, V., M. Ashour-Abdalla, J. Berchem, and R. J. Walker, Stochastic trapping and precipitation of oxygen ions, 1991 Cambridge Workshop on Nonlinear Phenomena and Active Experiments, Cambridge, MA, June 1991.

16. Berchem, J., M. Ashour-Abdalla, J. Büchner, and L. Zelenyi, Signatures of stochastic particle acceleration in the Earth's magnetotail, AGU, Baltimore, Maryland, May 1991 (*EOS, 72*, 227).

17. Raeder, J., J. Berchem, and M. Ashour-Abdalla, Simulation studies of reconnection and multi-ion flows at the magnetopause, AGU, Baltimore, Maryland, May 1991 (*EOS, 72*, 241).

18. Walker, R. J., T. Ogino, and M. Ashour-Abdalla, A global magnetohydrodynamic simulation of magnetospheric dynamics for southward interplanetary magnetic field, AGU, Baltimore, Maryland, May 1991 (*EOS, 72*, 256).

19. Berchem, J., D. Schriver and M. Ashour-Abdalla, Electron cyclotron waves contribution to the plasma sheet wave spectrum, XX General Assembly of IUGG, Vienna, Austria, August 1991.

20. Ogino, T., R. J. Walker and M. Ashour-Abdalla, Global MHD simulation of the solar wind-magnetosphere interaction during northward IMF, XX General Assembly of IUGG, Vienna, Austria, August 1991.

21. Ogino, T., R. J. Walker and M. Ashour-Abdalla, 3-dimensional global MHD simulation of the Earth's magnetosphere and mapping analysis, XX General Assembly of IUGG, Vienna, Austria, August 1991.

22. Ogino, T., H. Kajikawa, R. J. Walker and M. Ashour-Abdalla, 3-dimensional MHD simulation of the interaction between the interstellar wind and the heliosphere, XX General Assembly of IUGG, Vienna, Austria, August 1991.

23. Berchem, J., and H. Okuda, The low latitude magnetopause boundary layer: results from two dimensional electromagnetic simulations, (Abstract) *EOS, AGU*, 72 (44), 412, 1991. Presented at the AGU Fall Meeting, San Francisco, 1991.

24. Raeder, J. and M. Ashour-Abdalla, Multifluid simulations of the magnetosphere and magnetopause, GEM Kickoff Workshop, UCLA, Los Angeles, California, September 1991.

25. Schriver, D. and M. Ashour-Abdalla, Semi-global particle simulations of parallel electric fields in the auroral region, AGU, San Francisco, California, December 1991 (*EOS, 72*, 370).

26. Bosqued, J. M., M. El Alaoui, M. Ashour-Abdalla, and L. Zelenyi, Substructures in VDIS: Simulation predictions and observations, AGU, San Francisco, California, December 1991 (*EOS, 72*, 371).

27. Walker, R. J., T. Ogino, and M. Ashour-Abdalla, A global magnetohydrodynamic simulation of substorm dynamics, AGU, San Francisco, California, December 1991 (*EOS, 72*, 400).

28. Raeder, J. and M. Ashour-Abdalla, Global multifluid simulation studies of the Earth's magnetosphere with time-variable solar wind conditions, AGU, San Francisco, California, December 1991 (*EOS, 72*, 411).

29. Ogino, T., R. J. Walker, and M. Ashour-Abdalla, The use of an MHD simulation of the solar wind magnetosphere interaction to map between the magnetosphere and the ionosphere, AGU, San Francisco, California, December 1991 (*EOS, 72*, 416).

30. Wang, F., M. Ashour-Abdalla, R. J. Walker, J. Raeder, J. Berchem, and T. Ogino, A comparison between the Tsyganenko magnetic field model and global MHD simulations, AGU, San Francisco, California, December 1991 (*EOS, 72*, 416).

31. Mei, Y., Z. Wang, M. Ashour-Abdalla, and R. J. Walker, An electric field model for an open magnetosphere, AGU, San Francisco, California, December 1991 (*EOS, 72*, 420).

32. Convery, P. D., L. Zelenyi, M. Ashour-Abdalla, J. Berchem, and J. Büchner, Modeling the properties of the central plasma sheet ion distribution functions at various distances from the Earth, AGU, San Francisco, California, December 1991 (*EOS, 72*, 423).

33. Zelenyi, L. M., M. Ashour-Abdalla, and V. Peroomian, Magnetotail acceleration mechanisms and precipitation of ions, AGU, San Francisco, California, December 1991 (*EOS, 72*, 425).

34. Peroomian, V., M. Ashour-Abdalla, and R. J. Walker, Chaotic heating and the observation of O+ in various regions of the magnetotail, AGU, San Francisco, California, December 1991 (*EOS, 72*, 425).

35. Peroomian, V., M. Ashour-Abdalla, and R. J. Walker, Accessibility of ionospheric particles to various regions of the magnetotail, AGU Chapman Conference on Micro and Meso Scale Phenomena in Space Plasmas, Kapaa, Kauai, Hawaii, February 1992.

36. Raeder, J., The generation of waves and turbulence in the magnetosheath: A global multifluid simulation with anisotropic pressure, (Abstract) *EOS, AGU*, 73 (14), 253, 1992. Presented at the AGU Spring Meeting, Montreal, 1992.

37. Peredo, M., D. P. Stern, J. Raeder, R. J. Walker, and M. Ashour-Abdalla, Use of magnetospheric modeling techniques to analyze global MHD simulations, AGU, Montreal, Canada, May 1992. (*EOS, 73,* 256).

38. Walker, R .J., T. Ogino, and M. Ashour-Abdalla, A global MHD simulation of the magnetosheath and magnetosphere when the IMF is northward, AGU, Montreal, Canada, May 1992. (*EOS, 73,* 256).

39. Bosqued, J. M., M. Ashour-Abdalla, L. Zelenyi, A. Berthelier, and Y. Galperin, Intensification of cross tail current by stochastic processes, AGU, Montreal, Canada, May 1992. (*EOS, 73*, 260).

40. Ashour-Abdalla, M., L. Zelenyi, V. Peroomian, and Z. Wang, Kinetic modeling of macroscopic properties of the near Earth magnetotail, AGU, Montreal, Canada, May 1992. (*EOS, 73*, 267).

41. Peroomian, V., M. Ashour-Abdalla, and R. J. Walker, Population of the ring current and plasma sheet by ionospheric ions, 1992 Cambridge Workshop in Theoretical Geoplasma Physics, August 1992.

42. Walker, R., T. Ogino, J. Raeder, and M. Ashour-Abdalla, Using global magnetohydro-dynamic simulations to model auroral dynamics, 1992 STEP Symposium, Laurel, MD, August 1992.

43. Bosqued, J. M., M. Ashour-Abdalla, and M. El Alaoui, Experimental and simulated auroral ion precipitation patterns, Third Huntsville Workshop on Magnetosphere/Ionosphere Plasma Models, Guntersville, AL, October 1992.

44. Peroomian, V., M. Ashour-Abdalla, and D. Schriver, Formation of the ring current by an ionospheric source, Third Huntsville Workshop on Magnetosphere/Ionosphere Plasma Models, Guntersville, AL, October 1992.

45. Richard, R. L., and M. Ashour-Abdalla and D. Schriver, Formation of plasma distributions in the deep tail, Third Huntsville Workshop on Magnetosphere/Ionosphere Plasma Models, Guntersville, AL, October 1992.

46. Schriver, D. and M. Ashour-Abdalla, Self-consistent acceleration of ionospheric plasma by a parallel electric field in the auroral zone, Third Huntsville Workshop on Magnetosphere/ Ionosphere Plasma Models, Guntersville, AL, October 1992.

47. Wang, Z., M. Ashour-Abdalla, and J. Berchem, Magnetic field line stochasticity at the magnetopause, American Physical Society, Seattle, WA, November 1992. (*Bull. Am. Phys. Soc., 37*, 1372).

48. Ashour-Abdalla, M., L. Zelenyi, J. M. Bosqued, V. Peroomian, and Z. Wang, Chaotic particle acceleration in the near-earth tail region, American Physical Society, Seattle, WA, November 1992. (*Bull. Am. Phys. Soc., 37*, 1443).

49. Bosqued, J. M., M. Ashour-Abdalla, and M. El Alaoui, Observation of new structures in the ion precipitation, AGU, San Francisco, CA, December 1992. (*EOS, 73*, 453).

50. Berchem, J., M. Ashour-Abdalla, V. Sotnikov, and J. Solomon, Electromagnetic simulations of wave emissions near the plasmapause, AGU, San Francisco, CA, December 1992. (*EOS*, 73, 453).

51. Ogino, T., R. J. Walker, and M. Ashour-Abdalla, MHD simulation of the solar wind-magnetosphere interaction when the IMF turns from southward to northward, AGU, San Francisco, CA, December 1992. (*EOS, 73*, 455).

52. Peroomian, V., M. Ashour-Abdalla, D. Schriver, and R. J. Walker, The ionospheric contribution to the quiet and storm-time ring current, AGU, San Francisco, CA, December 1992. (*EOS, 73*, 461).

53. Walker, R. J., M. Ashour-Abdalla, R. L. Richard, T. Ogino, and L. M. Zelenyi, Magnetospheric boundary layers and particle entry into the magnetosphere, AGU, San Francisco, CA, December 1992. (*EOS, 73*, 464).

54. Ashour-Abdalla, M., L. M. Zelenyi, and J. M. Bosqued, Ion losses in the course of earthward convection: Plasma squeezing and precipitation, AGU, San Francisco, CA, December 1992. (*EOS, 73*, 468).

55. Richard, R. L., D. Schriver, M. Ashour-Abdalla, and L. M. Zelenyi, Large scale kinetics in the distant magnetotail, AGU, San Francisco, CA, December 1992. (*EOS, 73*, 468).

56. Raeder. J., Ionospheric convection patterns for northward IMF and variable $B_y$ simulation results from a coupled global MHD magnesphere – ionosphere model, AGU, San Francisco, CA, December 1992. (*EOS*, 73, 468).

57. Zelenyi, L. and M. Ashour-Abdalla, The thermodynamics of a quasiadiabatic magnetotail, AGU, San Francisco, CA, December 1992. (*EOS, 73*, 468).

58. Convery, P. D., J. Raeder, R. J. Walker, and M. Ashour-Abdalla, Magnetic field and flow signatures at the deep tail magnetopause, AGU, San Francisco, CA, December 1992. (*EOS, 73*, 471).

59. Wang, Z., M. Ashour-Abdalla, and J. Berchem, Magnetic field line stochasticity at the magnetopause, AGU, San Francisco, CA, December 1992. (*EOS, 73*, 479).

60. Li, X., M. Ashour-Abdalla, R. Richard, and L. Zelenyi, Inductive acceleration of protons and electrons in explosive reconnection in the magnetotail, AGU, San Francisco, CA, December 1992. (*EOS, 73*, 485).

61. Xiao, F., and J. Berchem, Electromagnetic simulations of the magnetopause for northward and southward IMF, AGU, San Francisco, CA, December 1992. (*EOS*, 73, 485).

62. Raeder, J., The structure of the deep geomagnetic tail and its response to solar wind variations, Yosemite 1993, Solar System Plasma Physics: Resolution of Processes in Space and Time, Yosemite National Park, California, February 1993.

63. Walker, R. J., R. L. Richard, M. Ashour-Abdalla, T. Ogino, and L. M. Zelenyi, The entry of solar wind ions into the low latitude boundary layer, AGU, Baltimore, MD, May 1993. (*EOS, 74*, 252).

64. Raeder, J., R. J. Walker, J. Berchem, and M. Ashour-Abdalla, The ionosphere-magnetosphere current system from a global MHD simulation, AGU, Baltimore, MD, May 1993. (*EOS, 74*, 256).

65. Ebrahimian, T., J. Berchem, J. Raeder, R. J. Walker, and M. Ashour-Abdalla, Interactive visualization of numerical simulation results: A tool for mission planning and data analysis, AGU, Baltimore, MD, May 1993. (*EOS, 74*, 265).

66. Ashour-Abdalla, M., and L. M. Zelenyi, Structure of the pressure tensor in the Earth's magnetotail, AGU, Baltimore, MD, May 1993. (*EOS, 74*, 268).

67. Berchem, J., D. Schriver, and M. Ashour-Abdalla, Broadband electrostatic noise in the Earth magnetotail: Results from two-dimensional electromagnetic simulations, AGU, Baltimore, MD, May 1993. (*EOS, 74*, 274).

68. Schriver, D., M. Ashour-Abdalla, R. Richard, F. V. Coroniti, and L. M. Zelenyi, The dynamics of electrons in the magnetotail, AGU, Baltimore, MD, May 1993. (*EOS, 74*, 277).

69. Raeder, J., Global MHD simulations: Structure and dynamics of the distant tail, GEM, Snowmass, Colorado, July 1993.

70. Schriver, D., M. Ashour-Abdalla, R. L. Richard, F. V. Coroniti, and L. M. Zelenyi, Electron magnetotail dynamics, IAGA 7th Scientific Assembly, Buenos Aires, Argentina, August 8-20, 1993.

71. Ogino, T., R. J. Walker, and M. Ashour-Abdalla, A global MHD simulation of the substorm recovery phase, IAGA 7th Scientific Assembly, Buenos Aires, Argentina, August 8-20, 1993.

72. Walker, R. J., R. L. Richard, M. Ashour-Abdalla, T. Ogino, and L. M. Zelenyi, The entry of solar wind ions into the low latitude boundary layer (LLBL), IAGA 7th Scientific Assembly, Buenos Aires, Argentina, August 8-20, 1993.

73. Richard, R. L., R. J. Walker, M. Ashour-Abdalla, T. Ogino and L. M. Zelenyi, A model of the formation of the low latitude boundary layer, AGU, San Francisco, CA, December 6-10, 1993 (*EOS, 74*, 502).

74. Walker, R. J., R. L. Richard, M. Ashour-Abdalla, L. Zelenyi, and T. Ogino, Population of the magnetotail from the low latitude boundary layer, AGU, San Francisco, CA, December 6-10, 1993 (*EOS, 74*, 502).

75. Bosqued, J. M., V. Peroomian, M. Ashour-Abdalla, D. Schriver, and L. M. Zelenyi, Three dimensional large scale kinetic modeling of the magnetotail population and ion precipitation, AGU, San Francisco, CA, December 6-10, 1993 (*EOS, 74*, 520).

76. Ogino, T., R. J. Walker, and M. Ashour-Abdalla, The dependence of magnetospheric plasma circulation on IMF variations, AGU, San Francisco, CA, December 6-10, 1993 (*EOS, 74*, 528).

77. Ackerson, K. L., L. A. Frank, and W. R. Paterson, S. Kokubun, M. Ashour-Abdalla, F. V. Coroniti, G. L. Siscoe, A. J. Lazarus, D. H. Fairfield, and R. P. Lepping, Geotail observations of the presence of solar wind ion velocity distributions in the downstream magnetosheath, AGU, San Francisco, CA, December 6-10, 1993 (*EOS, 74*, 534).

78. Berchem, J., J. Raeder, and M. Ashour-Abdalla, Global and local structures of the dayside magnetospheric boundary inferred from 3D MHD global simulations, AGU, San Francisco, CA, December 6-10, 1993 (*EOS, 74*, 539).

79. Pulkkinen, T. I., D. N. Baker, R. J. Walker, J. Raeder, and M. Ashour-Abdalla, Comparison of global MHD simulations with an empirical magnetic field model during substorms, AGU, San Francisco, CA, December 6-10, 1993 (*EOS, 74*, 539).

80. Schriver, D., M. Ashour-Abdalla, and R. Richard, Electron particle motion in the magnetotail, AGU, San Francisco, CA, December 6-10, 1993 (*EOS, 74*, 543).

81. Zelenyi, L. M., M. Ashour-Abdalla, and V. Peroomian, Spatial intermittency of ion bulk flows in the Earth's magnetotail, AGU, San Francisco, CA, December 6-10, 1993 (*EOS, 74*, 543).

82. Raeder, J., Slow shocks and other discontinuities in the distant tail, 1993 Fall AGU Meeting, San Francisco, CA, December 6-10, 1993 (*EOS*, 74, 544)

83. Bosqued, J. M., M. Ashour-Abdalla, V. Peroomian, R. L. Richard, and L. M. Zelenyi, Auroral precipitation patterns: observations and 3D simulations, International Conference on Substorms-2 (ICS-2), Fairbanks, Alaska, March 7-11, 1994.

84. Elphinstone, R. D., D. J. Hearn, J. S. Murphree, L. L. Cogger, I. Sandahl, M. Ashour-Abdalla, D. Klumpar, T. A. Potemra, M. Shapshak, and J. M. Bosqued, The double oval UV auroral distribution: Implications for the substorm process using multi-instrument Viking data, International Conference on Substorms-2 (ICS-2), Fairbanks, Alaska, March 7-11, 1994.

85. Schriver, D., and M. Ashour-Abdalla, Ion and electron distributions near an X-line, International Conference on Substorms-2 (ICS-2), Fairbanks, Alaska, March 7-11, 1994.

86. Pulkinnen, T. I., D. N. Baker, J. G. Lyon, J. Fedder, R. J. Walker, and M. Ashour-Adballa, Comparison of global MHD simulations with an empirical magnetic field model during substorms, International Conference on Substorms-2, (ICS-2), Fairbanks, AK, March 7-11, 1994 (Program and Abstracts, 53).

87. Ogino, T., R. J. Walker, and M. Ashour-Abdalla, A global magnetohydrodynamic model of substorm dynamics, International Conference on Substorms-2, (ICS-2), Fairbanks, AK, March 7-11, 1994 (Program and Abstracts, 53).

88. Raeder, J., Convection bays and substorms: Results from global MHD simulations, International Conference on Substorms-2, (ICS-2), Fairbanks, AK, March 7-11, 1994 (Program and Abstracts, 53).

89. Raeder, J., J. Berchem, and M. Ashour-Abdalla, The magnetospheric boundary for southward IMF: 3D global MHD simulation results, 1994 Chapman Conference on Physics of the Magnetopause, San Diego, California, March 14-18, 1994.

90. Richard, R. L., R. J. Walker, and M. Ashour-Abdalla, Low latitude boundary layer formation with IMF By, 1994 Chapman Conference on Physics of the Magnetopause, San Diego, California, March 14-18, 1994.

91. Walker, R. J., T. Ogino, R. L. Richard, and M. Ashour-Abdalla, An MHD simulation of the magnetospheric configuration for southward and dawnward IMF, AGU, Baltimore, MD, May 23-27, 1994 (*EOS, 75*, 299).

92. Richard, R. L., R. J. Walker, M. Ashour-Abdalla, and T. Ogino, Population of the magnetosphere for southward and dawnward IMF, AGU, Baltimore, MD, May 23-27, 1994 (*EOS, 75*, 299).

93. McAlexander, R., J. Berchem, J. Raeder, and M. Ashour-Abdalla, Flux ropes at the magnetospheric boundary: Results from global MHD simulations, AGU, Baltimore, MD, May 23-27, 1994 (*EOS, 75*, 306).

94. Ashour-Abdalla, M., L. A. Frank, W. R. Paterson, L. M. Zelenyi, J. Berchem, F. V. Coroniti, J. M. Bosqued, M. G. Kivelson, S. Kokubun, and T. Yamamoto, Manifestations of nonlinear ion dynamics observed in the earth's magnetotail, AGU, Baltimore, MD, May 23-27, 1994 (*EOS, 75*, 309).

95. Peroomian, V., and M. Ashour-Abdalla, Population of the quiet-time plasma sheet, AGU, Baltimore, MD, May 23-27, 1994 (*EOS, 75*, 309).

96. Schriver, D., M. Ashour-Abdalla, and R. L. Richard, Acceleration of ions and electrons in the magnetotail, AGU, Baltimore, MD, May 23-27, 1994 (*EOS, 75*, 310).

97. Raeder, J., J. Berchem, R. J. Walker, and M. Ashour-Abdalla, Modeling the solar wind dependence of ionospheric currents and fields using global MHD simulations, AGU, Baltimore, MD, May 23-27, 1994 (*EOS, 75*, 316).

98. Berchem, J., J. Raeder, R. J. Walker, and M. Ashour-Abdalla, Using global MHD simulations to predict space weather: Magnetopause motion, AGU, Baltimore, MD, May 23-27, 1994 (*EOS, 75*, 318).

99. Ogino, T., R. J. Walker, and M. Ashour-Abdalla, An MHD simulation of energy flow in the solar wind, COSPAR 1994, Hamburg, Germany, July 10-22, 1994.

100. Peroomian, V., and M. Ashour-Abdalla, Population of the quiet-time plasma sheet and ring current, 1994 Huntsville Workshop on Coupling and Micro and Meso Scale Processes in Space Plasma Transport, Guntersville, Alabama, October 1994.

101. Ogino, T., R. J. Walker, and M. Ashour-Abdalla, The effects of IMF orientation on the polar cap and magnetosphere, AGU, San Francisco, CA, December 5-9, 1994 (*EOS, 75*, 536).

102. Convery, D., D. Schriver, and M. Ashour-Abdalla, Magnetotail instabilities driven by ring-like gyrating-beam distributions, AGU, San Francisco, CA, December 5-9, 1994 (*EOS, 75*, 540).

103. Richard, R. L., R. J. Walker, M. Ashour-Abdalla, and T. Ogino, Population of the magnetosphere for southward IMF, AGU, San Francisco, CA, December 5-9, 1994 (*EOS, 75*, 540).

104. Raeder, J., J. Berchem, and M. Ashour-Abdalla, An assessment of the global energy budget of the Earth's magnetosphere using global MHD simulations, AGU, San Francisco, CA, December 5-9, 1994 (*EOS, 75*, 548).

105. Zelenyi, L. M., R. L. Richard, and M. Ashour-Abdalla, Transient response of magnetotail plasma populations to solar wind variations, AGU, San Francisco, CA, December 5-9, 1994 (*EOS, 75*, 560).

106. Berchem, J., J. Raeder, M. Ashour-Abdalla, D. Winterhalter, J. T. Gosling, and C. T. Russell, Interaction of an interplanetary shock with Earth's magnetosphere: A comparison of a global magnetohydrodynamic simulation with ISEE observations, AGU, San Francisco, CA, December 5-9, 1994 (*EOS, 75*, 569).

107. Ashour-Abdalla, M., L. M. Zelenyi, L. A. Frank, and W. K. Paterson, On the inherent complexity of non-adiabatic acceleration of magnetotail ions, AGU, San Francisco, CA, December 5-9, 1994 (*EOS, 75*, 574).

108. Schriver, D., M. Ashour-Abdalla, and R. L. Richard, Electron acceleration and plasma sheet formation in the magnetotail, AGU, San Francisco, CA, December 5-9, 1994 (*EOS, 75*, 574).

109. El Alaoui, M., M. Ashour-Abdalla, J. Raeder, and J. M. Bosqued, Simulation of ion trajectories in the magnetotail using time-dependent electromagnetic fields, AGU, Baltimore, MD, May 30-June 2, 1995 (*EOS, 76*, 245).

110. Richard, R. L., R. J. Walker, T. Ogino, and M. Ashour-Abdalla, The entry of solar wind ions into the magnetosphere when the interplanetary magnetic field is southward, AGU, Baltimore, MD, May 30-June 2, 1995 (*EOS, 76*, 252).

111. Ashour-Abdalla, M., L. M. Zelenyi, W. R. Paterson, and L. A. Frank, Description of ion magnetotail distribution functions using fractal analysis and entropy calculations, AGU, Baltimore, MD, May 30-June 2, 1995 (*EOS, 76*, 258).

112. Paterson, W. R., L. A. Frank, and M. Ashour-Abdalla, The entropy of ions in the geomagnetic tail, AGU, Baltimore, MD, May 30-June 2, 1995 (*EOS, 76*, 258).

113. Raeder, J., J. Berchem, and M. Ashour-Abdalla, Space weather forecasting using global MHD simulations: Synoptic weather maps of the ionosphere, AGU, Baltimore, MD, May 30-June 2, 1995 (*EOS, 76*, 260).

114. Ashour-Abdalla, M., P. Convery, D. Schriver, Y. Lin, L. A. Frank, W. R. Paterson, H. Matsumoto and H. Kojima, Plasma waves and particle distributions in the Earth's magnetotail: Theory and observations, 1995 IUGG Meeting, Boulder, CO, July 2-14, 1995.

115. Berchem, J., J. Raeder, M. Ashour-Abdalla, D. Winterhalter, J. T. Gosling, and C. T. Russell, Comparison of global MHD simulation results with observations: The interaction of an interplanetary shock with Earth's magnetosphere, 1995 IUGG Meeting, Boulder, CO, July 2-14, 1995.

116. Berchem, J., J. Raeder, M. Ashour-Abdalla, L. A. Frank, W. R. Paterson, L. Ackerson, S. Kokubun, T. Yamamoto, R. P. Lepping, Dynamics of Earth's distant tail: Comparison of Geotail plasmas and magnetic field observations with global MHD simulation results, 1995 IUGG Meeting, Boulder, CO, July 2-14, 1995.

117. El Alaoui, M., M. Ashour-Abdalla, J. Raeder, and J. M. Bosqued, Transport in the near-Earth plasma sheet during substorms, 1995 IUGG Meeting, Boulder, CO, July 2-14, 1995.

118. El Alaoui, M., M. Ashour-Abdalla, J. Raeder and J. M. Bosqued, Simulation of ion trajectories in the magnetotail using time-dependent electromagnetic fields, 1995 IUGG Meeting, Boulder, CO, July 2-14, 1995.

119. Ogino, T., R. J. Walker, and M. Ashour-Abdalla, The effects of IMF orientation on the magnetospheric configuration, 1995 IUGG Meeting, Boulder, CO, July 2-14, 1995.

120. Peredo, M., S. A. Curtis, M. Ashour-Abdalla, J. Berchem, J. Raeder, J. G. Lyon, C. C. Goodrich, and D. Sibeck, Evaluation of global MHD simulations for use by the ISTP program, 1995 IUGG Meeting, Boulder, CO, July 2-14, 1995.

121. Peroomian, V., and M. Ashour-Abdalla, Solar wind and ionospheric contribution to the quiet time plasma sheet and ring current, 1995 IUGG Meeting, Boulder, CO, July 2-14, 1995.

122. Raeder, J., J. Berchem, and M. Ashour-Abdalla, The dynamics of the inner plasma sheet: Effects of the ring current, 1995 IUGG Meeting, Boulder, CO, July 2-14, 1995.

123. Raeder, J., J. Berchem, and M. Ashour-Abdalla, Global MHD simulations with a ring current, 1995 IUGG Meeting, Boulder, CO, July 2-14, 1995.

124. Raeder, J., J. Berchem, and M. Ashour-Abdalla, Studies of the magnetotail structure and dynamics using global MHD simulations, 1995 IUGG Meeting, Boulder, CO, July 2-14, 1995.

125. Richard, R. L., R. J. Walker, M. Ashour-Abdalla, and T. Ogino, Population of the magnetosphere for different IMF orientations, 1995 IUGG Meeting, Boulder, CO, July 2-14, 1995.

126. Schriver, D., M. Ashour-Abdalla, and R. Richard, Modeling electron distributions in the Earth's magnetotail, 1995 IUGG Meeting, Boulder, CO, July 2-14, 1995.

127. Wlker, R. J., and T. Ogino, The origina and evolution of magnetic flux ropes in the magnetotail, 1995 IUGG Meeting, Boulder, CO, July 2-14, 1995.

128. Schriver, D., and M. Ashour-Abdalla, Self-consistent simulations of magnetosphere-ionosphere coupling in the auroral region, 1995 IUGG Meeting, Boulder, CO, July 2-14, 1995.

129. Ashour-Abdalla, M., L. M. Zelenyi, and V. Peroomian, The effects of nonadiabatic ion behavior on the magnetotail magnetic field, AGU, San Francisco, CA, December 11-15, 1995 (*EOS, 76*, F486).

130. Berchem, J., J. Raeder, M. Ashour-Abdalla, L. A. Frank, W. R. Paterson, K. L. Ackerson, S. Kokubun, T. Yamamoto, and R. P. Lepping, The distant tail at 200 RE: Comparison between Geotail observations and the results of a global MHD simulation, AGU, San Francisco, CA, December 11-15, 1995 (*EOS, 76*, F68).

131. Convery, P. D., M. Ashour-Abdalla, S. P. Gary, and D. Schriver, Linear theory of nongyrotropic electrostatic cyclotron waves: Perpendicular propagation, AGU, San Francisco, CA, December 11-15, 1995 (*EOS, 76*, F520).

132. El Alaoui, M., M. Ashour-Abdalla, J. Raeder, and J. M. Bosqued, Plasma populations of the near-Earth plasma sheet, AGU, San Francisco, CA, December 11-15, 1995 (*EOS, 76*, F487).

133. Ogino, T., R. J. Walker, and M. Ashour-Abdalla, Global MHD simulation of Jovian magnetosphere, AGU, San Francisco, CA, December 11-15, 1995 (*EOS, 76*, F517).

134. Raeder, J., J. Berchem, M. Ashour-Abdalla, L. A. Frank, W. R. Paterson, K. L. Ackerson, S. Kokubun, T. Yamamoto, and R. P. Lepping, The structure of the distant tail during strong northward IMF: A comparison between Geotail observations and the results of a global MHD simulation, AGU, San Francisco, CA, December 11-15, 1995 (*EOS, 76*, F475).

135. Richard, R. L., R. J. Walker, M. Ashour-Abdalla, and T. Ogino, Dusk-dawn asymmetry in magnetospheric ion entry, AGU, San Francisco, CA, December 11-15, 1995 (*EOS, 76*, F523).

136. Schriver, D., M. Ashour-Abdalla, J. Raeder, and J. Berchem, Kinetic simulation of the auroral zone region with input from the magnetotail, AGU, San Francisco, CA, December 11-15, 1995 (*EOS, 76*, F506).

137. Yin, L., M. Ashour-Abdalla, D. Schriver, L. A. Frank, W. R. Paterson, H. Matsumoto, and H. Kojima, Generation of narrow-banded electrostatic waves (NEN) by double-humped electron distributions in the magnetotail, AGU, San Francisco, CA, December 11-15, 1995 (*EOS, 76*, F520).

138. Convery, P. D., and M. Ashour-Abdalla, Electrostatic cyclotron waves driven by nongyrotropic magnetotail ions, COSPAR Colloquium '96, Beijing, China, April. 15-19, 1996.

139. Ashour-Abdalla, M., L. M. Zelenyi, and V. Peroomian, Towards the self-consistent kinetic theory of magnetotail evolution, International Conference on Substorms (ICS-3), Versailles, France, May 13-17, 1996.

140. El-Alaoui, M., M. Ashour-Abdalla, J. Raeder, and J. M. Bosqued, Modeling the plasma populations of the near-Earth plasma sheet during substorms using time-dependent LSK, International Conference on Substorms (ICS-3), Versailles, France, May 13-17, 1996.

141. Raeder, J., J. Berchem, M. Ashour-Abdalla, L. A. Frank, W. R. Paterson, K. L. Ackerson, S. Kokubun, T. Yamamoto, and R. P. Lepping, A global MHD simulation of the February 8/9, 1995 substorm, AGU, Baltimore, MD, May 20-24, 1996 (*EOS, 76*, S239).

142. Convery, P. D., D. Schriver, M. Ashour-Abdalla, L. A. Frank, W. R. Paterson, S. Kokubun, and T. Yamamoto, Simulations of nongyrotropic electrostatic ion cyclotron waves: Perpendicular propagation, AGU, Baltimore, MD, May 20-24, 1996 (*EOS, 76*, S248).

143. Russell, C. T., M. Ashour-Abdalla, R. L. McPherron, R. J. Strangeway, X. W. Zhou, and C. Cattell, Preliminary results from the magnetic field experiment on the POLAR spacecraft, AGU, Baltimore, MD, May 20-24, 1996 (*EOS, 76*, S251).

144. El-Alaoui, M., M. Ashour-Abdalla, J. Raeder, and J. M. Bosqued, Modeling the plasma populations of the near-earth plasma sheet during substorms using time-dependent LSK, AGU, Baltimore, MD, May 20-24, 1996 (*EOS, 76*, S254).

145. Ashour-Abdalla, M., L. M. Zelenyi, V. Peroomian, L. A. Frank, and W. R. Paterson, Quantifying the intrinsic complexity of plasma sheet distribution functions, 31st COSPAR Scientific Assembly, Birmingham, England, July 14-21, 1996.

146. Ashour-Abdalla, M., L. M. Zelenyi, J. Berchem, M. El-Alaoui, V. Peroomian, J. Raeder, R. L. Richard, D. Schriver, R. J. Walker, L. A. Frank, W. R. Paterson, K. Ackerson, S. Kokubun, T.

Yamamoto, R. P. Lepping, and K. Ogilvie, Modeling complex ion distributions in the near-earth plasma sheet, 31st COSPAR Scientific Assembly, Birmingham, England, July 14-21, 1996.

147. Walker, R. J., T. Ogino, R. L. Richard, and M. Ashour-Abdalla, Flux ropes in the magnetotail: Consequences for ion populations, 31st COSPAR Scientific Assembly, Birmingham, England, July 14-21, 1996.

148. Convery, P. D., S. P. Gary, and M .Ashour-Abdalla, Simulations of electromagnetic waves driven by nongyrotropic protons, 1996 Huntsville Workshop on "Encounter Between Global Observations and Models in the ISTP Era," Guntersville, AL, September 15-20, 1996 (Abstract, pg. 67).

149. El-Alaoui, M., M. Ashour-Abdalla, J. Raeder, and J. M. Bosqued, Modeling ion energization during substorms using time-dependent LSK, 1996 Huntsville Workshop on "Encounter Between Global Observations and Models in the ISTP Era," Guntersville, AL, September 15-20, 1996 (Abstract, pg. 68).

150. Vazquez, V. M., M. Ashour-Abdalla, and R. L. Richard, Particle acceleration due to explosive reconnection in a model neutral sheet, 1996 Huntsville Workshop on "Encounter Between Global Observations and Models in the ISTP Era," Guntersville, AL, September 15-20, 1996 (Abstract, pg. 89).

151. Yin, L., M. Ashour-Abdalla, M. El-Alaoui, J. M. Bosqued, N. Lormant, J. L. Bougeret, H. Matsumoto, and R. P. Lin, Waves in the upstream solar wind region: Theory analysis of WIND observations, 1996 Huntsville Workshop on "Encounter Between Global Observations and Models in the ISTP Era," Guntersville, AL, September 15-20, 1996 (Abstract, pg. 90).

152. Ashour-Abdalla, M., L. M. Zelenyi, M. El-Alaoui, V. Peroomian, J. M. Bosqued, J. Raeder, L. A. Frank, W. R. Paterson, S. Kokubun, T. Yamamoto, R. Lepping, and K. Ogilvie, Identifying the source of the observed particle distribution on Geotail, 1996 Chapman Conference on "The Earth's Magnetotail: New Perspectives," Kanazawa, Japan, November 5-9, 1996.

153. Sotnikov, V., D. Schriver, M. Ashour-Abdalla, and J. Labelle, Generation of auroral radio waves by a gyrating electron beam, AGU, San Francisco, CA, December 15-19, 1996 (*EOS, 77*, F544).

154. Yin, L., M. Ashour-Abdalla, M. El-Alaoui, J. M. Bosqued, N. Lormant, and J. L. Bougeret, A theoretical investigation of WIND observations in the upstream solar wind: Generation of fpe and 2fpe waves, and mode conversion of fpe waves, AGU, San Francisco, CA, December 15-19, 1996 (*EOS, 77*, F569).

155. Bosqued, J. M., N. Lormant, J. Bougeret, L. Yin, M. El-Alaoui, M. Ashour-Abdalla, and R. Lin, Simultaneous observations of electron distributions and fpe emissions in the Earth's foreshock region by the WIND spacecraft, AGU, San Francisco, CA, December 15-19, 1996 (*EOS, 77*, F583).

156. Peredo, M., S. Boardsen, A. Szabo, S. A. Curtis, Is one solar wind monitor sufficient to understand solar wind magnetosphere coupling?, AGU, San Francisco, CA, December 15-19, 1996 (*EOS, 77*, F591).

157. Schriver, D., R. Richard, and M. Ashour-Abdalla, Consequences of magnetotail transport for the auroral zone, AGU, San Francisco, CA, December 15-19, 1996 (*EOS, 77*, F600).

158. Richard, R. L., R. J. Walker, H. E. Spence, and M. Ashour-Abdalla, High latitude particle entry and acceleration for northward IMF, AGU, San Francisco, CA, December 15-19, 1996 (*EOS, 77*, F607).

159. Ashour-Abdalla, M., L. M. Zelenyi, M. El-Alaoui, V. Peroomian, J. M. Bosqued, J. Raeder, L. A. Frank, W. R. Paterson, S. Kokubun, T. Yamamoto, K. W. Ogilvie, and R. P. Lepping, Magnetotail particle dynamics inferred from a Geotail particle distribution, AGU, San Francisco, CA, December 15-19, 1996 (*EOS, 77*, F616).

160. Paterson, W. R., L. A. Frank, M. Ashour-Abdalla, M. El-Alaoui, V. Peroomian, S. Kokubun, T. Yamamoto, K. W. Ogilvie, and R. P. Lepping, Geotail observations near the current sheet in comparison with LSK simulations, AGU, San Francisco, CA, December 15-19, 1996 (*EOS, 77*, F616).

161. Convery, P. D., M. Ashour-Abdalla, D. Schriver, and S. P. Gary, Consequences of nongyrotropic protons in the magnetotail, AGU, San Francisco, CA, December 15-19, 1996 (*EOS, 77*, F625).

162. El-Alaoui, M., M. Ashour-Abdalla, V. Peroomian, J. M. Bosqued, L. A. Frank, W. R. Paterson, S. Kokubun, T. Yamamoto, K. W. Ogilvie, and R. P. Lepping, Understanding the structure in magnetotail ion distribution functions by using global MHD simulation and ion trajectory calculations, AGU, San Francisco, CA, December 15-19, 1996 (*EOS, 77*, F625).

163. Vazquez, V., M. Ashour-Abdalla, and R. Richard, Particle acceleration due to explosive reconnection in a model neutral sheet: Non-adiabatic particle dynamics, AGU, San Francisco, CA, December 15-19, 1996 (*EOS, 77*, F625).

164. Ogino, T., R. Walker, and M. Ashour-Abdalla, A global MHD simulation of magnetotail configuration depending on the IMF orientation, AGU, San Francisco, CA, December 15-19, 1996 (*EOS, 77*, F626).

165. Raeder, J., J. Berchem, M. Ashour-Abdalla, L. A. Frank, W. R. Paterson, K. L. Ackerson, S. Kokubun, T. Yamamoto, and R. P. Lepping, Global MHD simulation of the May 19/20 1996 substorm event and comparisons with ISTP/GGS observations, AGU, San Francisco, CA, December 15-19, 1996 (*EOS, 77*, F639).

166. Berchem, J., J. Raeder, M. Ashour-Abdalla, L. A. Frank, W. R. Paterson, K. L. Ackerson, S. Kokubun, T. Yamamoto, R. P. Lepping, and K. W. Ogilvie, ISTP/GGS correlative studies of the dayside magnetosphere boundary: Results from global MHD modeling, AGU, San Francisco, CA, December 15-19, 1996 (*EOS, 77*, F40).

167. Berchem, J., J. Raeder, and M. Ashour-Abdalla, The May 19-20, 1996 ISTP event: An energy perspective, AGU, Baltimore, MD, May 27-30, 1997 (*EOS, 78*, S265).

168. Raeder, J., J. Berchem, and M. Ashour-Abdalla, The May 20, 1996 0030 UT substorm: Ground magnetic signatures and comparisons with a global MHD model, AGU, Baltimore, MD, May 27-30, 1997 (*EOS, 78*, S265).

169. Peroomian, V., M. Ashour-Abdalla, and L. M. Zelenyi, The self-consistent evolution of the magnetotail's magnetic field, AGU, Baltimore, MD, May 27-30, 1997 (*EOS, 78*, S269).

170. Richard, R. L., R. J. Walker, H. E. Spence, J. B. Blake, J. R. Fennel, and M. Ashour-Abdalla, Ion entry and acceleration in PEP's, AGU, Baltimore, MD, May 27-30, 1997 (*EOS, 78*, S293).

171. El-Alaoui, M., M. Ashour-Abdalla, J. Raeder, V. Peroomian, J. M. Bosqued, D. J. Williams, A. T. Y. Lui, Modeling the transport of oxygen ions by using global MHD simulation and ion trajectory calculations, 1997 IAGA Assembly, Uppsala, Sweden, August 4-15, 1997. (Abstract, p. 271).

172. Ashour-Abdalla, M., M. El-Alaoui, V. Peroomian, J. Raeder, L. A. Frank, W. R. Paterson, S. Kokubun, .T. Yamamoto, A. Fedorov, L. Zelenyi, K. W. Ogilvie, and R. P. Lepping, Correlative studies of plasma distributions observed by the Geotail and Interball spacecraft, 1997 IAGA Assembly, Uppsala, Sweden, August 4-15, 1997. (Abstract, p. 263).

173. El-Alaoui, M., M. Ashour-Abdalla, J. Raeder, V. Peroomian, J. M. Bosqued, D. J. Williams, A. T. Y. Lui, Modeling the transport of oxygen ions by using global MHD simulation and ion trajectory calculations, 1997 IAGA Assembly, Uppsala, Sweden, August 4-15, 1997. (Abstract, p. 271).

174. Peroomian, V., M. Ashour-Abdalla, and L. M. Zelenyi, Non-adiabatic particle effects on the evolution of the magnetotail's magnetic field, 1997 IAGA Assembly, Uppsala, Sweden, August 4-15, 1997. (Abstract, p. 388).

175. Raeder, J., J. Berchem, M. Ashour-Abdalla, L. A. Frank, W. R. Paterson, K. L. Ackerson, S. Kokubun, T. Yamamoto, R. P. Lepping, and K. W. Ogilvie, Global MHD simulations as a tool for correlative studies, 1997 IAGA Assembly, Uppsala, Sweden, August 4-15, 1997. (Abstract, p. 303).

176. Vazquez, V., M. Ashour-Abdalla, R. Richard, and K. Kudela, Temporal velocity dispersion and particle acceleration in a model current sheet undergoing reconnection, AGU, San Francisco, CA, December 8-12, 1997 (*EOS, 78*, F566).

177. Schriver, D., M. Ashour-Abdalla, and R. Richard, Wave and particle results from an auroral zone simulation, AGU, San Francisco, CA, December 8-12, 1997 (*EOS, 78*, F483).

178. Berchem, J., J. Raeder, M. Ashour-Abdalla, C. P. Escoubet, and R. Schmidt, The response of the magnetospheric cusps to changes in solar wind conditions: Comparison between global MHD simulations and observations, AGU, San Francisco, CA, December 8-12, 1997 (*EOS, 78*, F592).

179. Richard, R. L., R. J. Walker, H. E. Spence, M. Ashour-Abdalla, J. F. Fennell, and J. B. Blake, Heavy ion dynamics and PEP's, AGU, San Francisco, CA, December 8-12, 1997 (*EOS, 78*, F592).

180. Convery, P., M. Ashour-Abdalla, and D. Schriver, Computer simulation of nongyrotropic magnetotail protons, AGU, San Francisco, CA, December 8-12, 1997 (*EOS, 78*, F616).

181. El-Alaoui, M., M. Ashour-Abdalla, J. Raeder, V. Peroomian, J. M. Bosqued, D. J. Williams, and A. T. Y. Lui, Transport of high energy particles into the magnetosphere, AGU, San Francisco, CA, December 8-12, 1997 (*EOS, 78*, F626).

182. Escoubet, C. P., J. Berchem, J. Raeder, M. Ashour-Abdalla, Structure and dynamics of the exterior cusp: Comparison between global MHD simulations and observations, AGU, San Francisco, CA, December 8-12, 1997 (*EOS, 78*, F594).

183. Peroomian, V., M. Ashour-Abdalla, and L. Zelenyi, The effect of non-adiabatic ions on the magnetotail's magnetic field, AGU, San Francisco, CA, December 8-12, 1997 (*EOS, 78*, F626).

184. Yin, L., M. Ashour-Abdalla, M. El-Alaoui, J. M. Bosqued, and J. L. Bougeret, Interpretations of WIND observations of electron foreshock waves: Simulations of nonlinear wave processes using time-of-flight electron distributions in a generalized Lorentzian plasma and analytical calculations of mode conversion coefficients in the presence of a density gradient, AGU, San Francisco, CA, December 8-12, 1997 (*EOS, 78*, F610).