

Curriculum Vitae

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Biographical Information

Name: Joachim Raeder
Place of Birth: Köln, Federal Republic of Germany
Martial Status: married, two children
Date of Birth: June 7, 1956
Current Affiliation: Space Science Center and Physics Department
University of New Hampshire
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Appointments

07/2003 – present Associate Professor, University of New Hampshire
07/2002 – 07/2003 Research Geophysicist II/as, IGPP/UCLA
07/2001 – 06/2002 Research Geophysicist I, IGPP/UCLA
07/1999 – 06/2001 Associate Research Geophysicist, IGPP/UCLA
08/1990 – 06/1999 Assistant Research Geophysicist, IGPP/UCLA
11/1989 – 07/1990 Research Associate (BAT I/a), Inst. für Geoph., Univ. zu Köln, FRG
01/1985 – 10/1989 Research Associate (BAT I/a/2), Inst. für Geoph., Univ. zu Köln, FRG

Education

11/1989 Ph.D. in Geophysics, Universität zu Köln, Germany
(thesis adviser: Prof. F. M. Neubauer, emeritus)
01/1985 Diploma in Geophysics, Universität zu Köln, Germany
(thesis adviser: Prof. A. Ebel, emeritus)
10/1977 – 01/1985 Universität zu Köln, Germany, major in geophysics and
applied mathematics
07/1975 – 06/1977 Military service
06/1975 Abitur (high school diploma)

Honors and Awards

1998 NASA GGS Team Group Achievement Award
2005 ESA Cluster Outstanding Contribution Award

Teaching

PHYS 931 (Mathematical Physics), Fall semester 2007
PHYS 703 (Electricity & Magnetism I), Spring semester 2007
PHYS 931 (Mathematical Physics), Fall semester 2006
MATH/PHYS 754/854 (Introduction to Numerical Methods II), Spring semester 2006
PHYS 408 (General Physics II), Fall semester 2005
PHYS 408 (General Physics II), Spring semester 2005
MATH 425S (Studio Calculus I), Fall semester 2004
PHYS 408 (General Physics II), Recitation, Spring semester 2004
MATH/PHYS 754/854 (Introduction to Numerical Methods II), Spring semester 2004
PHYS 408 (General Physics II), Recitation, Fall semester 2003

University Service

Chair, UNH CEPS Academic Planning Committee, 2005 - 2007.
UNH CEPS Academic Planning Committee, 2003 - 2004.
UNH Physics Department Graduate Curriculum Committee, 2003 - present.
Chair, UCLA/IGPP Researcher Committee, 2000 - 2003.
UCLA/IGPP Steering Committee, 2000 - 2003.

Professional Service

Committees: Chair, GEM Steering Committee (2006 - present); Chair, GEM GGCM Science Steering Committee (2004 - 2006); NASA Living with a Star Management Operations Working Group (2003 - 2006); NASA Living with a Star Targeted Research and Technology Steering Committee (2004 - 2005); Co-chair, GEM GGCM campaign (1999 - 2003); NASA Magnetospheric Constellation Sci. and Tech. Mission Definition Team (1999 - present); NRC "Solar and Space Physics: A Community Assessment and Strategy for the Future", panel on theory, computation, and data exploration (2001 - 2003); NASA Sun-Earth Connections Management Operations Working Group (2000 - 2002); NRC/CSSP panel on "Sudden Energy Transformations" (2000); Co-chair, GEM Substorm challenge working group (1997 - 2000); NSF Space Weather Metrics committee (1997 - 1999); Steering committee, NSF Geospace Environment Modeling (GEM) program (1996 - 1999); Co-chair, GEM GGCM spine working group (1996 - 1999)

Conference organizing committees and conference sessions: Yosemite conference (2006, committee); Palm Spring Modeling conference (2006, committee); Storm-Substorm Relations (2006, committee); Session SM52A, AGU Fall Meeting, (2004); IAGA Symposium 3.09, Birmingham, UK, (1999); Special session SM05, AGU Fall Meeting, (1998); Theory and modeling session, ISTP workshop, NASA/GSFC, (1997); IAGA Symposium 3.12, Uppsala, Sweden, (1997)

Proposal Panel Reviews: NASA/HPCC program, NASA/LWS-TR&T program, NASA/SR&T program, NASA/HGI program, NSF/base program, NSF/GEM program.

Proposal Mail-in Reviews: NSF base program, NASA/SR&T program, NSF/GEM, NSF/Space Weather, NSF/ITR, NASA/SECTP, NASA/EOSDIS, NASA/LWS, AFOSR, DoE/OBES, San Diego Supercomputer Center.

Publication Reviews: Journal of Geophysical Research, Geophysical Research Letters, Journal of Computational Physics, Journal of Geomagnetism and Geoelectricity, Advances in Space Research,

Planetary and Space Science, Journal of Solar-Terrestrial Physics, Annales Geophysicae, Space Weather, Computer Physics Communications, AGU monographs.

Professional Memberships

American Association for the Advancement of Science
American Geophysical Union
European Geophysical Union

Recent external collaborators (over the last two years)

Dr. V. Angelopoulos, UCB (NASA MIDEX "THEMIS" mission)
Dr. J. Birn, LANL (tail dynamics, GEM GGCM co-chair)
Dr. A. Bodouridis, UCLA (pressure pulse effects)
Dr. D. Fairfield, NASA/GSFC (distant tail studies)
Dr. M.-C. Fok, NASA/GSFC (ring current modeling)
Dr. T. Fuller-Rowell, NOAA/SEC, (coupling with ionosphere - thermosphere models)
Dr. H. Karimabadi, UCSD (global hybrid modeling)
Dr. B. Lavraud, LANL (Cold dense plasma sheet)
Dr. G. Le, NASA/GSFC (Polar event studies)
Dr. G. Lu, NCAR/HAO (GEM substorm challenge, AMIE comparisons)
Dr. M. Oieroset, UCB (plasma entry)
Dr. N. Omid, SciberNet San Diego (kinetic modeling)
Dr. T. Phan, UCB (CDPS)
Dr. Nikolai Pogorelov, UCR (code development)
Dr. L. Raststatter, NASA/GSFC (aurora studies)
Prof. C. T. Russell, IGPP (Polar, Interball comparisons)
Prof. S. Sazykin, Rice University (RCM model coupling)
Dr. R. J. Strangeway, IGPP (Ionospheric dynamics and electrodynamics)
Dr. M. Thomsen, LANL (Cold dense plasma sheet)
Prof. F. Toffoletto, Rice University (RCM model coupling)
Dr. Y.-L. Wang, NASA/GSFC (FTE studies)
Prof. G. Zank, IGPP/UCR (adaptive mesh refinement)
Dr. E. Zesta, UCLA (pressure pulse effects)
Dr. P. Zhu, U. of Wisconsin (ballooning mode studies)

Post-docs and researchers

Dr. E. L. Kepko (UNH, 2007 - present); Dr. W. Li (UNH, 2007 - present); Dr. E. Kaghshvili (UNH, 2006 - present); Dr. J. Dorelli (UNH, 2003 - present); Dr. D. Larson (UNH, 2003 - present); Dr. J. Weygand (UCLA, 2001 - 2003)

Graduate students

Huyn Ju Kim (UNH, 2006 - present); Andrew Foulks (UNH CS graduate student, 2005); Wenhui Li (UNH, 2003 - present); Yongli Wang (UCLA, 1998 - 2003)

Undergraduate students

R. Vega, J. Berg, E. Callahan, T. Glines, B. Barry, M. LeBlanc, T. Fogal, T. Olsen, B. Loring, N. Myiake

Publications in refereed journals

- [R1] Neubauer, F. M., K.-H. Glassmeier, M. Pohl, J. Raeder, M. H. Acuna, L. F. Burlaga, N. F. Ness, G. Musmann, F. Mariani, M. K. Wallis, E. Ungstrup and H. U. Schmidt, First results from the GIOTTO magnetometer experiment at comet Halley, *Nature*, **321**, 352-355, 1986.
- [R2] Raeder, J., F. M. Neubauer, N. F. Ness and L. F. Burlaga, Macroscopic perturbations of the IMF by P/Halley as seen by the GIOTTO magnetometer, *Astron. Astroph.*, **187**, 61-64, 1987.
- [R3] Mazelle, C., H. Reme, J. A. Sauvaud, C. d’Uston, C. W. Carlson, K. A. Anderson, D. W. Curtis, R. P. Lin, A. Korth, D. A. Mendis, F. M. Neubauer, K.-H. Glassmeier, and J. Raeder, Analysis of suprathermal electron properties at the magnetic pile-up boundary of comet P/Halley, *Geophys. Res. Lett.*, **16**, 1035-1038, 1989.
- [R4] Motschmann, U., and J. Raeder, A simulation study of multiple ion wave generation downstream of a low Mach number quasiperpendicular shock, *Geophys. Res. Lett.*, **19**, 1619-1622, 1992.
- [R5] 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**, 17235-17249, 1993.
- [R6] Ashour-Abdalla, M., J. Berchem, F. V. Coroniti, J. Raeder, D. Schriver, and R. J. Walker, Mission-Oriented theory for ISTP, *Space Sci. Rev.*, **71**, 647-669, 1995.
- [R7] 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**, 349-352, 1995.
- [R8] Pulkkinen, T. I., D. N. Baker, R. J. Walker, J. Raeder, and M. Ashour-Abdalla, Comparison of empirical magnetic field models and global MHD simulations, *Geophys. Res. Lett.*, **22**, 675-678, 1995.
- [R9] Berchem, J., J. Raeder, and M. Ashour-Abdalla, Magnetic flux ropes at the high - latitude magnetopause, *Geophys. Res. Lett.*, **22**, 1189-1192, 1995.
- [R10] 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**, 19177-19190, 1995.
- [R11] 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 model, *Geophys. Res. Lett.*, **24**, 951-954, 1997.
- [R12] Ashour-Abdalla, M., M. El-Alaoui, V. Perroomian, 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**, 955-959, 1997.
- [R13] Berchem, J., J. Raeder, M. Ashour-Abdalla, L. A. Frank, W. R. Paterson, K. L. Ackerson, S. Kokubun, Y. Yamamoto, and R. P. Lepping, The distant tail at $200 R_E$: Comparison between Geotail observations and the results from a global magnetohydrodynamic simulation, *J. Geophys. Res.*, **103**, 9121, 1998.
- [R14] Raeder, J., J. Berchem, and M. Ashour-Abdalla, The Geospace Environment Modeling Grand Challenge: Results from a Global Geospace Circulation Model, *J. Geophys. Res.*, **103**, 14787, 1998.
- [R15] Ashour-Abdalla, M., M. El-Alaoui, V. Perroomian, R. J. Walker, J. Raeder, L. A. Frank, and W. R. Paterson, Source distributions of substorm ions observed in the near-Earth magnetotail, *Geophys. Res. Lett.*, **26**, 955-958, 1999.
- [R16] Raeder, J., Modeling the magnetosphere for northward interplanetary magnetic field: Effects of electrical resistivity, *J. Geophys. Res.*, **104**, 17357, 1999.
- [R17] Curtis, S., J. Raeder, J. Berchem, C. Goodrich, M. Wiltberger, R. Greenwald, K. Baker, and R. Roble, A global view of acceleration processes in solar-terrestrial coupling as provided by the ISTP theory and ground-based experiments, *Phys. Chem. Earth*, **24**, 239, 1999.
- [R18] Ergun, R. E., D. E. Larson, T. Phan, D. Taylor, S. Bale, C. W. Carlson, I. Roth, V. Angelopoulos, J. Raeder, T. Bell, U. S. Inan, J.-L. Bougeret, and R. Manning, Feasibility of a multisatellite investigation of the Earth’s magnetosphere with radio tomography, *J. Geophys. Res.*, **105**, 361, 2000.
- [R19] Ashour-Abdalla, M., M. El-Alaoui, V. Perroomian, R. J. Walker, J. Raeder, L. A. Frank, and W. R. Paterson, The origin of the near-Earth plasma population during a substorm on November 24, 1996, *J. Geophys. Res.*, **105**, 2589, 2000.
- [R20] Raeder, J., Reply, *J. Geophys. Res.*, **105**, 13149, 2000.

- [R21] **Raeder, J., O. Vaisberg, V. Smirnov, and L. Avakov**, Reconnection driven lobe convection: Interball tail probe observations and global simulations, *J. Atm. Solar-Terr. Phys.*, **62**, 833, 2000.
- [R22] **Russell, C. T., Y. Wang, and J. Raeder, R. L. Tokar, C. W. Smith, K. W. Ogilvie, A. J. Lazarus, R. P. Lepping, A. Szabo, H. Kawano, T. Mukai, S. Savin, Y. I. Yermolaev, X.-Y. Zhou, and B. T. Tsurutani**, The interplanetary shock of September 24, 1998: Arrival at Earth, *J. Geophys. Res.*, **105**, 25143, 2000.
- [R23] **Raeder, J. and N. Maynard**, Foreword, *J. Geophys. Res.*, **106**, 345, 2001.
- [R24] **Raeder, J., R. L. McPherron, L. A. Frank, W. R. Paterson, J. B. Sigwarth, G. Lu, H. J. Singer, S. Kokubun, T. Mukai, and J. A. Slavin**, Global simulation of the geospace environment modeling substorm challenge event, *J. Geophys. Res.*, **106**, 381, 2001.
- [R25] **Strangeway, R.J., and J. Raeder**, On the transition from collisionless to collisional magnetohydrodynamics, *J. Geophys. Res.*, **106**, 1955, 2001.
- [R26] **Chi, P., C. T. Russell, J. Raeder, E. Zesta, K. Yumoto, H. Kawano, K. Kitamura, S. M. Petrinec, V. Angelopoulos, G. Le and M. B. Moldwin**, Propagation of the preliminary reverse impulse of sudden commencements to low latitudes, *J. Geophys. Res.*, **106**, 18857, 2001.
- [R27] **Le, G., J. Raeder, C. T. Russell, G. Lu, S. M. Petrinec, and F. S. Mozer**, Polar cusp and vicinity under strongly northward IMF on April 11, 1997: Observations and MHD simulations, *J. Geophys. Res.*, **106**, 21083, 2001.
- [R28] **Wang, Y. L., C. T. Russell, and J. Raeder**, The Io mass-loading disk: Model calculations, *J. Geophys. Res.*, **106**, 26243, 2001.
- [R29] **Russell, C. T., X. Blanco-Cano, R. J. Strangeway, Y. L. Wang, and J. Raeder**, A mechanism for the production of a disk-shaped neutral source cloud at Io, *Adv. Space Res.*, **28**, 1475, 2001.
- [R30] **Raeder, J., Y. L. Wang, T. J. Fuller-Rowell, and H. J. Singer**, Global simulation of space weather effects of the Bastille Day storm, *Sol. Phys.*, **204**, 325, 2001.
- [R31] **Chi, P., C. T. Russell, J. Raeder, E. Zesta, K. Yumoto, H. Kawano, K. Kitamura, S. M. Petrinec, V. Angelopoulos, G. Le and M. B. Moldwin**, Reply, *J. Geophys. Res.*, **107**, 1474, doi:10.1029/2002JA009369, 2002.
- [R32] **Wang, Y. L., J. Raeder, C. T. Russell, T. D. Phan, and M. Manapat**, Plasma depletion layer: Event studies with a global model, *J. Geophys. Res.*, **108**, 1010, doi:10.1029/2002JA009281, 2003.
- [R33] **Russell, C. T., Y. L. Wang, and J. Raeder**, Possible dipole tilt dependence of dayside magnetopause reconnection, *Geophys. Res. Lett.*, **30**, 1937, doi:10.1029/2003GL017725, 2003.
- [R34] **Ohtani, S., and J. Raeder**, Tail current surge: New insights from a global MHD simulation, and comparison with tail observations, *J. Geophys. Res.*, **109**, A01207, doi:10.1029/2002JA009750, 2004.
- [R35] **Wang, Y. L., J. Raeder, and C. T. Russell**, Plasma depletion layer; Structure and forces, *Ann. Geophys.*, **22**, 1001, 2004.
- [R36] **Siscoe, G., J. Raeder, and A. J. Ridley**, Transpolar potential saturation models compared, *J. Geophys. Res.*, **109**, A9, doi: A09302 10.1029/2003JA010318, 2004.
- [R37] **Birn, J., J. Raeder, Y. L. Wang, R. A. Wolf, and M. Hesse**, On the propagation of bubbles in the geomagnetic tail, *Ann. Geophys.*, **22**, 1773, 2004.
- [R38] **Dorelli, J. C., M. Hesse, M. M. Kuznetsova, L. Rastätter, and J. Raeder**, A new look at driven magnetic reconnection at the terrestrial subsolar magnetopause, *J. Geophys. Res.*, **109**, A12216 doi: 10.1029/2004JA010458, 2004.
- [R39] **Wang, Y. L., J. Raeder, C. T. Russell**, Plasma depletion layer: The role of the slow mode waves, *Ann. Geophys.*, **22**, 4259, 2004.
- [R40] **Wang, Y. L., J. Raeder, C. T. Russell**, Plasma depletion layer: Its dependence on solar wind conditions and the Earth dipole tilt, *Ann. Geophys.*, **22**, 4273, 2004.
- [R41] **Øieroset, M., J. Raeder, T. D. Phan, S. Wing, J. P. McFadden, W. Li, M. Fujimoto, H. Reme, and A. Balogh**, Global cooling and densification of the plasma sheet during an extended period of purely northward IMF on October 22-24, 2003, *Geophys. Res. Lett.*, **32**, L12S07 doi: 10.1029/2004GL021523, 2005.
- [R42] **Li, W., J. Raeder, J. Dorelli, M. Øieroset, and T. D. Phan**, Plasma sheet formation during long period of northward IMF, *Geophys. Res. Lett.*, **32**, L12S08 doi: 10.1029/2004GL021524, 2005.
- [R43] **Vennerstrom, S., T. Moretto, L. Rastätter, and J. Raeder**, Field-aligned currents during northward IMF: Morphology and causes, *J. Geophys. Res.*, **110**, A06205 doi: 10.1029/2004JA010802, 2005.
- [R44] **Rastätter, M. Hesse, M. Kuznetsova, J. B. Sigwarth, J. Raeder, T. I. Gombosi**, Polar cap size during July 14-16 2000 (Bastille Day) solar CME event. MHD modeling and satellite imager observations. *J. Geophys. Res.*, **110**, A07212 doi: 10.1029/2004JA010672, 2005.
- [R45] **Weygand, J. M., and J. Raeder**, Cosmic ray cutoff predictions using magnetic field from global magnetosphere MHD simulations, *Ann. Geophys.*, **23**, 1441, doi: 1432-0576/ag/2005-23-1441, 2005.
- [R46] **Mühlbacher, S., C. J. Farrugia, J. Raeder, H. K. Biernat, and R. B. Torbert**, A statistical investigation of dayside magnetosphere erosion showing saturation of response, *J. Geophys. Res.*, **110**, A11207, doi: 10.1029/2005JA011177, 2005.
- [R47] **Raeder, J., and G. Lu**, Polar cap potential saturation during large geomagnetic storms, *Adv. Space Res.*, **36**, 1804, 2005.

- [R48] **Wang, Y. L., R. C. Elphic, B. Lavraud, M. G. Taylor, M. F. Thomsen, J. Birn, J. Raeder, C. T. Russell, H. Kawano, Q.-G. Zong, H. Zhang, X. X. Zhang, and R. H. Friedel**, Initial results of high-latitude magnetopause and low-latitude flux transfer event statistics from three years of Cluster observations, *J. Geophys. Res.*, **110**, A11221, doi: 10.1029/2005JA011150, 2005.
- [R49] **Raeder, J.**, Flux Transfer Events: 1. Generation mechanism for strong southward IMF, *Ann. Geophys.*, **24**, 381-392, 2006.
- [R50] **Wang, Y. L., R. C. Elphic, B. Lavraud, M. G. Taylor, J. Birn, C. T. Russell, J. Raeder, H. Kawano, X. X. Zhang**, Dependence of flux transfer events on solar wind conditions from 3 years of Cluster observations, *J. Geophys. Res.*, **111**, A04224, doi: 10.1029/2005JA011342, 2006.
- [R51] **Kaghashvili, E. K., J. Raeder, G. M. Webb, and G. P. Zank**, Propagation of Alfvén waves in shear flows: Nature of driven longitudinal velocity and density fluctuations, *Physics of Plasmas*, **13**, 122107, 2006.
- [R52] **Moretto, T., S. Vennerstrom, L. Rastätter, and J. Raeder**, Using global magnetospheric models for simulation and interpretation of Swarm external field measurements, *Earth Planets and Space*, **58/4**, 439-449, 2006.
- [R53] **Vennerstrom, S., T. Moretto, L. Rastätter, and J. Raeder**, Modeling and analysis of solar wind generated contributions to the near-Earth magnetic field, *Earth Planets and Space*, **58/4**, 451-461, 2006.
- [R54] **Dorelli, J. C., A. Bhattacharjee, and J. Raeder**, Separator reconnection at Earth's dayside magnetopause under northward IMF conditions, *J. Geophys. Res.*, **112**, A02202, doi: 10.1029/2006JA011877, 2007.

Invited contributions in books and monographs

- [B1] **Sydora, R. D., and J. Raeder**, A particle MHD simulation approach with application to a global comet-solar wind interaction model, in: *Cometary and Solar Plasma Physics*, ed. B. Buti, World Scientific Publishing, 1988.
- [B2] **Raeder, J.**, Grundlagen der numerischen Plasmasimulation, in: *Plasmaphysik im Sonnensystem*, ed. K.-H. Glassmeier and M. Scholer, BI Wissenschaftsverlag, Mannheim, 1991.
- [B3] **Raeder, J., J. Berchem, and M. Ashour-Abdalla**, The importance of small scale processes in global MHD simulations: Some numerical experiments, in *The Physics of Space Plasmas*, edited by T. Chang, and J. R. Jasperse, vol. 14, p. 403, Cambridge, MA, MIT Center for Theoretical Geo/Cosmo Plasma Physics, 1996.
- [B4] **Raeder, J.**, Global Magnetohydrodynamics: A Tutorial, in: *Space Plasma Simulation*, edited by J. Büchner, C. T. Dum and M. Scholer, Lecture Notes in Physics Vol. **615**, Springer Verlag, Heidelberg, 2003.

Publications in reviewed conference proceedings

- [P1] **Raeder, J., F. M. Neubauer, N. F. Ness and L. F. Burlaga**, Macroscopic perturbations of the IMF by P/Halley as seen by the GIOTTO magnetometer, in *Proceedings of the 20th ESLAB Symposium on the Exploration of Halley's Comet*, 173-178, ESA SP-250, **3**, 1987.
- [P2] **Raeder, J.**, Ein zweidimensionales, anisotropes Multiionenmodell der Plasmawechselwirkung einer Kometenatmosphäre mit dem Sonnenwind, *Mitteilungen aus dem Institut für Geophysik und Meteorologie der Universität zu Köln, Heft* **69**, 1990.
- [P3] **Walker, R. J., T. Ogino, M. Ashour-Abdalla, and J. Raeder**, A global magnetohydrodynamic simulation of magnetospheric dynamics when the IMF is southward: Mapping to the auroral zone, *Proceedings of the International Conference on Substorms (ICS-1)*, Kiruna, Sweden, ESA SP-335, 1992.
- [P4] **Berchem, J., J. Raeder, and M. Ashour-Abdalla**, Mission-oriented simulations of small and large scale structures in the dayside magnetosphere, in: *Proceedings of Spatio-Temporal Analysis for Resolving Plasma Turbulence (START) Conference*, Aussois, France, June 1993, ESA WPP-47, 1993.
- [P5] **Ashour-Abdalla, M., R. L. Richard, D. Schriver, L. Zelenyi, and J. Raeder**, Understanding the Earth's distant magnetotail, *Proceedings of the 1992 STEP Symposium*, COSPAR Colloquia Series, **5**, 709-722, D. N. Baker, V. O. Papitashvili, M. J. Teague, eds., Pergamon Press, 1994.
- [P6] **Raeder, J.**, Global MHD simulations of the dynamics of the magnetosphere: Weak and strong solar wind forcing, *Proceedings of the Second International Conference on Substorms*, 561-570, J. R. Kan, J. D. Craven, and S.-I. Akasofu, eds., Geophysical Institute, University of Alaska Fairbanks, Fairbanks, Alaska, 1994.
- [P7] **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, November 1994, ESA SP-371, 167, 1995.
- [P8] **Berchem, J., J. Raeder, and M. Ashour-Abdalla**, Reconnection at the magnetospheric boundary: Results from global MHD simulations, in: *Physics of the Magnetopause*, 205-213, B. U. Sonnerup and P. Song, editors, Geophysical Monograph, **90**, AGU, Washington, D.C., 1995.

- [P9] **Berchem, J., J. Raeder, R. J. Walker, and M. Ashour-Abdalla**, Interactive visualization of numerical simulation results: A tool for mission planning and analysis, in: *Applications of Advanced Data Handling and Visualization Tools to Complex Problems in Space and Atmospheric Science*, E. Szuszcwicz and J. Bredekamp, editors, NASA SP-519, 1995.
- [P10] **Ashour-Abdalla, M., M. El-Alaoui, V. Perroomian, J. Raeder, R. L. Richard, R. J. Walker, L. M. Zelenyi, L. A. Frank, W. R. Paterson, J. M. Bosqued, R. P. Lepping, K. Ogilvie, S. Kokubun, and T. Yamamoto**, Determination of particle sources for a Geotail distribution function observed on May 23, 1995, in: *Geospace Mass and Energy Flow: Results From the International Solar-Terrestrial Physics Program*, edited by J. Horwitz, Geophysical Monograph **104**, AGU, pp. 297, Washington, DC, 1998.
- [P11] **El-Alaoui, M., M. Ashour-Abdalla, J. Raeder, V. Perroomian, L. A. Frank, W. R. Paterson, and J. M. Bosqued**, Modeling magnetotail ion distributions with global magnetohydrodynamic and ion trajectory calculations, in: *Geospace Mass and Energy Flow: Results From the International Solar-Terrestrial Physics Program*, edited by J. Horwitz, Geophysical Monograph **104**, AGU, pp. 291, Washington, DC, 1998.
- [P12] **Berchem, J., J. Raeder, M. Ashour-Abdalla, L. A. Frank, W. R. Paterson, K. L. Ackerson, S. Kokubun, Y. Yamamoto, and R. P. Lepping**, Large-scale dynamics of the magnetospheric boundary: Comparisons between global MHD simulation results and ISTP observations, in: *Geospace Mass and Energy Flow: Results From the International Solar-Terrestrial Physics Program*, edited by J. Horwitz, Geophysical Monograph **104**, AGU, pp. 247, Washington, DC, 1998.
- [P13] **Ashour-Abdalla, M., J. Raeder, M. El-Alaoui, and V. Perroomian**, Magnetotail structure and its internal particle dynamics during northward IMF, in: *Physics of the Magnetotail*, edited by A. Nishida, Geophysical Monograph **105**, AGU, Washington, DC, pp. 77, 1998.
- [P14] **El-Alaoui, M., M. Ashour-Abdalla, J. Raeder, L. A. Frank, and W. R. Paterson**, A study of transport in the near-Earth plasma sheet during a substorm using time dependent large scale kinetics, in: *Substorms-4*, S. Kokubun and Y. Kamide, ed., Terra Scientific Publishing, Kluwer Academic Publishers, Dordrecht, pp. 641, 1998.
- [P15] **Ashour-Abdalla, M., M. El-Alaoui, V. Perroomian, J. Raeder, R. J. Walker, L. A. Frank, and W. R. Paterson**, Sources and transport of plasma sheet ions during magnetospheric substorms, in: *Substorms-4*, S. Kokubun and Y. Kamide, ed., Terra Scientific Publishing, Kluwer Academic Publishers, Dordrecht, pp. 479, 1998.
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- [P21] **Raeder, J., Y. L. Wang, and T. J. Fuller-Rowell**, Geomagnetic storm simulation with a coupled magnetosphere-ionosphere-thermosphere model, in: *Space Weather: Progress and Challenges in Research and Applications*, 377-384, P. Song, H. J. Singer, and G. Siscoe, editors, Geophysical Monograph, **125**, AGU, Washington, D.C., 2001.
- [P22] **Raeder, J., W. Li, J. Dorelli, M. Øieroset, and T. Phan**, Cluster observations and global simulation of the cold dense plasma sheet during northward IMF, in: *Proceedings of the Cluster and Doublestar Symposium, 5th Anniversary of Cluster in Space*, Noordwijk, The Netherlands, ESA SP-598, 1-5, 2006.
- [P23] **Zank, G., N. V. Pogorelov, J. Raeder, V. Florinski, J. Heerikhuisen, D. Shaikh, I. A. Kryukov, and S. N. Borovikov**, Simulating Coupling Complexity in Space Plasmas, *Numerical Modeling of Space Plasma Flows*, Astronomical Society of the Pacific Conference Series, Vol. 359, 62-68, 2006.
- [P24] **Dorelli, J. C., A. Bhattacharjee, and J. Raeder**, Tracking Magnetic Nulls in a Simulated Magnetosphere, *Numerical Modeling of Space Plasma Flows*, Astronomical Society of the Pacific Conference Series, Vol. 359, 131-136, 2006.
- [P25] **Raeder, J., J. C. Dorelli, D. Larson, and B. Loring**, Physical, Numerical, and Computational Challenges in Modeling the Geospace Environment, *Numerical Modeling of Space Plasma Flows*, Astronomical Society of the Pacific Conference Series, Vol. 359, 202-212, 2006.

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- [U1] **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/IGPP Report IGPP-3447*, 1990.
- [U2] **Raeder, J., J. Berchem, and M. Ashour-Abdalla**, Simulating Earth's magnetosphere on the Paragon, *Gather/Scatter*, **11**, 12, 1995.
- [U3] **Russell, C. T., X. Blanco-Cano, N. Omid, J. Raeder, and Y. L. Wang**, The solar wind interaction with planetary magnetospheres, in: *Multiscale Processes in the Earth's Magnetosphere: From Interball to Cluster*, 15, Kluwer Academic Publishers, 2004.

Publications Sub Judice

- [S1] **Loring, B., and J. Raeder**, Constrained Transport Adaptive Mesh Refinement MHD Code, *APS Conf. Proc.*, submitted, 2007.
- [S2] **M. Oieroset, T. D. Phan, D. H. Fairfield, J. Raeder, J. T. Gosling, J. F. Drake, and R. P. Lin**, The existence and properties of the distant geomagnetic tail during 32 hours of strongly northward interplanetary magnetic field, *J. Geophys. Res.*, submitted, 2007.
- [S3] **Li, W., J. Raeder, M. F. Thompson, and B. Lavraud**, Solar wind plasma entry into the magnetosphere under northward IMF conditions, of strongly northward interplanetary magnetic field, *J. Geophys. Res.*, submitted, 2007.
- [S4] **Kaghashvili, E. K., J. Raeder, G. M. Webb, and G. P. Zank**, Propagation of Alfvén waves in shear flows: Perturbation method for driven fluctuations, *AIP Conference Proceedings*, submitted, 2007.
- [S5] **Kaghashvili, E. K. and J. Raeder**, Interaction of solar ULF waves with the magnetosphere, *AIP Conference Proceedings*, submitted, 2007.

Invited presentations

- [I1] **Raeder, J.**, Grundlagen der numerischen Plasmasimulation, *DGG-AEP Seminar 'Plasmaphysik im Sonnensystem'*, Neustadt, Germany, 1990.
- [I2] **Raeder, J., M. Ashour-Abdalla, and J. Berchem**, Modeling the multiple ion dynamics of the magnetosphere, *The 4th International School for Space Simulation*, Nara, Japan, 1991.
- [I3] **Raeder, J.**, Global MHD simulations of the Earth's magnetosphere, *3rd Goddard Workshop on the Modeling and Physics of the Global Magnetosphere*, NASA Goddard Space Flight Center, June 1992.
- [I4] **Raeder, J.** Global MHD simulations: Structure and dynamics of the distant tail, *GEM Workshop*, Snowmass, Colorado, July 1993.
- [I5] **Raeder, J.**, Global MHD simulations of the Earth's magnetosphere, *4th Goddard Workshop on the Modeling and Physics of the Global Magnetosphere*, NASA Goddard Space Flight Center, June 1994.
- [I6] **Raeder, J.**, Global MHD simulations: Predictive capabilities for space weather forecasting, *colloquium presentation*, NOAA Space Environment Laboratory, Boulder, Colorado, June 1994.
- [I7] **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, February 1995.
- [I8] **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, February 1995.
- [I9] **Raeder, J.**, Global MHD simulations: Ionosphere and distant tail, *IGPP/UCLA seminar presentation*, April 1995.
- [I10] **Berchem, J., J. Raeder, and M. Ashour-Abdalla**, Predicting the large scale motion of the magnetospheric boundary: Global MHD simulation results, *AGU Spring Meeting*, Baltimore (EOS, vol. 76, no. 16), 1995.
- [I11] **Raeder, J.** Structure and dynamics of the distant tail, *GEM Workshop*, Snowmass, Colorado, July 1995.
- [I12] **Raeder, J.** A combined global MHD-ionosphere-ring current model: First results, *1995 GEM Workshop*, Snowmass, Colorado, July 1995.
- [I13] **Berchem, J., J. Raeder, and M. Ashour-Abdalla**, Consequences of magnetic reconnection at the magnetospheric boundary: Results from a global magnetosphere-ionosphere simulation model, *IUGG XXI General Assembly*, Boulder, Colorado, 1995.
- [I14] **Ashour-Abdalla, M., et al.**, Theoretical technology for the ISTP mission: Examples of theory-data closure, *AGU Fall Meeting*, San Francisco (EOS, vol. 76, no. 46), 1995.
- [I15] **Raeder, J.**, Using global MHD simulations for space weather forecasting, *GEM Space Weather Workshop*, NOAA Space Environment Center, Boulder, Colorado, January 1996.

- [I16] **Raeder, J.**, Global MHD simulations: What does Earth's magnetosphere really look like?, *IGPP/UCLA Seminar Series*, February 1996.
- [I17] **Raeder, J.**, Global MHD simulations: What does Earth's magnetosphere really look like?, *SSL/UCB colloquium presentation*, Berkeley, California, March 1996.
- [I18] **Raeder, J.**, Mass, momentum, and energy flow from the solar wind into Earth's magnetosphere, ionosphere, and thermosphere: Global MHD simulations, *Seminar presentation, UCLA Department of Atmospheric Sciences*, Los Angeles, California, May 1996.
- [I19] **Raeder, J., J. Berchem, and M. Ashour-Abdalla**, Global MHD modeling of substorms, *3rd International Conference on Substorms*, Versailles, France, May 1996.
- [I20] **Ashour-Abdalla, M., V. Peromian, 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 Spring Meeting*, Baltimore (EOS, vol. 77, no. 16), 1996.
- [I21] **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. Ogilvie**, Wind/Geotail comparative studies of the dayside magnetospheric boundary: Initial results from global MHD modeling, *AGU Spring Meeting*, Baltimore (EOS, vol. 77, no. 16), 1996.
- [I22] **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 distant tail during strong northward IMF: Comparisons between Geotail observations and the results from global MHD simulations, *AGU Spring Meeting*, Baltimore (EOS, vol. 77, no. 16), 1996.
- [I23] **Ashour-Abdalla, M., M. El-Alaoui, V. Peromian, J. Raeder, 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 Spring Meeting*, Baltimore (EOS, vol. 77, no. 16), 1996.
- [I24] **Ashour-Abdalla, M., J. Berchem, J. Raeder, L. A. Frank, W. R. Paterson, K. L. Ackerson, S. Kokubun, Y. Yamamoto, and R. P. Lepping** Determination of particle sources from observed distribution functions, *Encounter between Global Observations and Models in the ISTP Era*, Huntsville, August 1996.
- [I25] **Berchem, J., J. Raeder, M. Ashour-Abdalla, L. A. Frank, W. R. Paterson, K. L. Ackerson, S. Kokubun, Y. Yamamoto, and R. P. Lepping** Large-scale dynamics of the magnetospheric boundary: Comparisons between global MHD simulation results and ISTP observations, *Encounter between Global Observations and Models in the ISTP Era*, Huntsville, August 1996.
- [I26] **Ashour-Abdalla, M., J. Berchem, J. Raeder, L. A. Frank, W. R. Paterson, K. L. Ackerson, S. Kokubun, Y. Yamamoto, and R. P. Lepping** Modeling complex ion distributions in the near-Earth plasma sheet, *31st COSPAR Scientific Assembly*, Birmingham, UK, 1996.
- [I27] **Ashour-Abdalla, M., J. Raeder, J. Berchem, R. J. Walker, M. El-Alaoui, W. R. Paterson, L. A. Frank, S. Kokubun, T. Yamamoto, R. P. Lepping, and K. Ogilvie**, The structure of the magnetotail: Geotail observations and simulations, *AGU Chapman Conference: The Earth's Magnetotail: New Perspectives*, Kanazawa, Japan, November 1996.
- [I28] **Ashour-Abdalla, M., M. El-Alaoui, V. Peromian, J. Raeder, L. A. Frank, and W. R. Paterson**, Determining the sources and transport of particles in observed distribution functions, *AGU Spring Meeting*, Baltimore (EOS, vol. 78, no. 16), 1997.
- [I29] **El-Alaoui, M., M. Ashour-Abdalla, J. Raeder, V. Peromian, 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 Spring Meeting*, Baltimore (EOS, vol. 78, no. 16), 1997.
- [I30] **Berchem, J., J. Raeder, and M. A. Ashour-Abdalla**, Modeling the magnetospheric boundary: Results from global magnetohydrodynamic simulations, *The 5th International School for Space Simulation*, Kyoto, Japan, March 1997.
- [I31] **Raeder, J.**, Global MHD simulations in the ISTP era: Code development and data comparisons (tutorial lecture), *The 5th International School for Space Simulation*, Kyoto, Japan, March 1997.
- [I32] **Raeder, J., J. Berchem, M. Ashour-Abdalla, L. A. Frank, W. R. Paterson, K. L. Ackerson, S. Kokubun, T. Yamamoto, K. Ogilvie, and R. P. Lepping**, Global MHD simulations as a tool for correlative studies, *IAGA 8th Scientific Assembly*, Uppsala, Sweden, August 1997.
- [I33] **Raeder, J.**, Global simulations of Earth's magnetosphere, *colloquium presentation*, NCAR/HAO, Boulder, Colorado, October 1997.
- [I34] **Raeder, J.**, Global simulations the solar wind - magnetosphere - ionosphere interaction, *colloquium presentation*, NOAA Space Environment Center, Boulder, Colorado, October 1997.
- [I35] **Ashour-Abdalla, M., El-Alaoui, M., V. Peromian, 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 Fall Meeting*, San Francisco, California, (EOS, vol. 78, no. 46), 1997.
- [I36] **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 imaging, *AGU Fall Meeting*, San Francisco, California, (EOS, vol. 78, no. 46), 1997.
- [I37] **Raeder, J.**, Data assimilation from multipoint measurements, *AGU Fall Meeting*, San Francisco, California, (EOS, vol. 78, no. 46), 1997.

- [I38] **Ashour-Abdalla, M., M. El-Alaoui, V. Perroomian, J. Raeder, R. J. Walker, L. A. Frank, and W. R. Paterson**, Sources and transport of plasma sheet ions during magnetospheric substorms, *4th International Conference on Substorms*, Lake Hamana, Japan, March 1998.
- [I39] **Raeder, J.**, Global MHD modeling of the substorm current wedge, *4th International Conference on Substorms*, Lake Hamana, Japan, March 1998.
- [I40] **Raeder, J.**, The accomplishments of the ISTP Theory Program, *ISTP workshop*, NASA Goddard Space Flight Center, April 1998.
- [I41] **Raeder, J.**, Global MHD simulations: Nuts and bolts (tutorial lecture), *1998 GEM Workshop*, Snowmass, Colorado, July 1998.
- [I42] **Raeder, J., O. Vaisberg, V. Smirnov, L. Avonov, and E. Melnikova**, Lobe reconnection and convection: Global modeling and Interball observations, *Sixth Huntsville Modeling Workshop*, Guntersville, Alabama, October 1998.
- [I43] **Raeder, J.**, Global simulations of Earth's magnetosphere and ionosphere, *Geophysical Fluid Dynamics Seminar*, ESS/UCLA, March 1999.
- [I44] **Raeder, J.**, Global modeling of Earth's magnetosphere and ionosphere: Present and future, *Colloquium presentation*, Rice University, March 1999.
- [I45] **Raeder, J.**, Modeling Earth's magnetosphere and ionosphere: Interplanetary shocks and substorms, *Colloquium presentation*, University of Colorado, Boulder, April 1999.
- [I46] **Raeder, J.**, Magnetosphere-Ionosphere coupling in global models, *AGU Spring Meeting*, Boston (EOS, vol. 80, no. 17), 1999.
- [I47] **Raeder, J.**, The auroral acceleration region in global MHD simulations, *IUGG 22nd General Assembly*, Birmingham, UK, July 1999.
- [I48] **Raeder, J.**, The magnetosphere under northward IMF: Models and simulations, *IUGG 22nd General Assembly*, Birmingham, UK, July 1999.
- [I49] **Raeder, J., Y. Wang, J. Brittnacher, L. A. Frank, D. Lummerzheim, G. K. Parks, and J. B. Sigwarth**, Global Modeling and Auroral Imaging, *AGU Fall Meeting*, San Francisco (EOS, vol. 81, no. 46), 1999.
- [I50] **Raeder, J., Y. Wang, and T. Fuller-Rowell**, Global modeling of substorms and storms in Earth's magnetosphere-ionosphere-thermosphere system, *AGU Chapman Conference: Space Weather: Progress and Challenges in Research and Applications*, Clearwater, Florida, March 2000.
- [I51] **Raeder, J., Y. Wang, and T. Fuller-Rowell**, Global modeling of Earth's magnetosphere-ionosphere-thermosphere geospace environment, *European Geophysical Society XXV Assembly*, Nice, France (EGS Newsletter, no. 74, 239), April 2000.
- [I52] **Raeder, J., Y. Wang, and T. Fuller-Rowell**, Predictive capabilities of global magnetosphere-ionosphere-thermosphere modeling, *NOAA Space Weather Week*, Boulder, Colorado, May 2000.
- [I53] **Raeder, J., T. Fuller-Rowell, and Y. Wang**, Global geospace modeling: State-of-the-art and current developments *Huntsville 2000: A New View of Geospace*, Pine Mountain, Georgia, October 2000.
- [I54] **Fuller-Rowell, T. J., J. Raeder, and Y. Wang**, Thermospheric effects on M-I coupling, *AGU Fall Meeting*, San Francisco, California (EOS, vol. 83, no. 46), 2000.
- [I55] **Raeder, J.**, The low-latitude boundary layer in global simulations, *AGU Chapman Conference: The Low-Latitude Boundary Layer and Its Dynamic Interaction with the Solar Wind and Magnetosphere*, New Orleans, Louisiana, April 2001.
- [I56] **Raeder, J.**, Recent advances in first-principles modeling of ionospheric currents and ground perturbations, *NOAA Space Weather Week*, Boulder, Colorado, May 2001.
- [I57] **Raeder, J.**, Global geospace modeling: Tutorial and review, *The Sixth International School for Space Plasma Simulations*, Garching, Germany, September 2001.
- [I58] **Raeder, J.**, What does global modeling tell us about tail dynamics and its relation to the ionosphere? *LANL/IGPP Conference on Magnetotail Dynamics*, Yellowstone, Wyoming, October 2001.
- [I59] **Raeder, J.**, Magnetosphere-ionosphere magnetic field connectivity, *AGU Fall Meeting*, San Francisco, California (EOS, vol. 82, no. 47), 2001.
- [I60] **Raeder, J.**, Polar cap potential saturation during geomagnetic storms *Colloquium presentation*, University of New Hampshire, February 2002.
- [I61] **Raeder, J.**, Polar cap potential saturation, *Colloquium presentation*, IGPP/UCLA, March 2002.
- [I62] **Raeder, J.**, Global modeling of magnetospheric flux transfer events, *Colloquium presentation*, NCAR/HAO, November 2002.
- [I63] **Raeder, J.**, Magnetospheric flux transfer events, *Colloquium presentation*, University of New Hampshire, February 2003.
- [I64] **Russell, C. T., Y. L. Wang, J. Raeder**, Possible dipole tilt angle dependence of dayside magnetopause reconnection, *2003 Joint EGU/AGU Meeting*, Nice, France, 2003.
- [I65] **Fuller-Rowell, T., M. Codrescu, and J. Raeder**, Future modeling challenges, *2003 Joint EGU/AGU Meeting*, Nice, France, 2003.
- [I66] **Raeder, J.**, Small scale variability in the high-latitude ionosphere from global simulations, *2003 Joint EGU/AGU Meeting*, Nice, France, 2003.

- [I67] **Raeder, J.**, Global simulations of flux transfer events: Generation mechanism and spacecraft signatures, *Colloquium presentation*, Dartmouth College, December 2003.
- [I68] **Dorelli, J. C., M. Hesse, J. Raeder, M. Kuznetsova, L. Rastätter**, A new look at driven magnetic reconnection at the terrestrial subsolar magnetopause, *AGU Fall Meeting*, Portland, Oregon, December 2003. xxxbr
- [I69] **Raeder, J.**, Including the ionosphere-thermosphere system into a GGCM, *Colloquium presentation*, Boston University, January 2004.
- [I70] **Raeder, J., T. Fuller-Rowell, F. Toffoletto**, Magnetosphere-ionosphere coupling in global circulation models: State-of-the-art and challenges, it 35th COSPAR Scientific Assembly, Paris, France, July 2004.
- [I71] **Fuller-Rowell, T., M. Condrescu, N. Maruyama, J. Raeder**, Coupling variation in the magnetosphere, ionosphere, and thermosphere, *35th COSPAR Scientific Assembly*, Paris, France, July 2004.
- [I72] **Dorelli, J., J. Raeder, D. Larson, T. Fogal**, Visualizing three-dimensional magnetic reconnection in the magnetosphere, *AGU Fall Meeting*, San Francisco, California, December 2004.
- [I73] **Raeder, J.**, Interplanetary shock interaction with the magnetosphere, *IGPP 4th Annual International Conference*, Palm Springs, California, February 2005.
- [I74] **Dorelli, J. C., A. Bhattacharjee, and J. Raeder**, Flux pileup reconnection at the dayside magnetopause under northward IMF conditions, *AGU Spring Meeting*, New Orleans, Louisiana, May 2005.
- [I75] **Raeder, J., D. Larson, and J. Dorelli**, Magnetospheric data assimilation: Prospects and challenges, *2005 IAGA Assembly*, Toulouse, France, July 2005.
- [I76] **Raeder, J., J. Dorelli, W. Li, and D. Larson**, Geospace response to extreme driving: Uses and limitations of global models, *2005 IAGA Assembly*, Toulouse, France, July 2005.
- [I77] **Raeder, J.**, ULF wave power flux from the solar wind to the ionosphere, *2005 IAGA Assembly*, Toulouse, France, July 2005.
- [I78] **Raeder, J.**, Large-scale fields, flows, and plasma morphology (reporter review), *2005 IAGA Assembly*, Toulouse, France, July 2005.
- [I79] **Dorelli, J. C., J. Raeder, and A. Bhattacharjee**, Flux pileup magnetic reconnection at Earth's dayside magnetopause, *2005 IAGA Assembly*, Toulouse, France, July 2005.
- [I80] **Dorelli, J. C., A. Bhattacharjee, and J. Raeder**, Separator reconnection at Earth's dayside magnetopause under northward IMF conditions, *2005 IAGA Assembly*, Toulouse, France, July 2005.
- [I81] **Raeder, J., W. Li, J. Dorelli, M. Øieroset, T. Phan**, Cold dense plasma sheet formation during northward IMF, *ESA Cluster and Doublestar Symposium*, Noordwijk, The Netherlands, September 2005.
- [I82] **Raeder, J.**, Space Weather, *Colloquium presentation*, Union College, Schenectady, NY, October 2005.
- [I83] **Raeder, J.**, Flux Transfer Events: Flux Ropes at Earth's Magnetopause, *47th APS Division of Plasma Physics Meeting*, Denver, CO, October 2005.
- [I84] **Raeder, J., and D. Larson**, Prospects and Challenges of Magnetospheric Data Assimilation, *AGU Fall Meeting*, San Francisco, California, December 2005.
- [I85] **Dorelli, J., J. Raeder, and A. Bhattacharjee**, Global Modeling of Magnetic Reconnection in Earth's Magnetosphere, *Numerical Modeling of Space Plasma Flows*, Palm Springs, California, March 2006.
- [I86] **Raeder, J.**, Physical, Numerical, and Computational Challenges Modeling the Geospace Environment (keynote), *Numerical Modeling of Space Plasma Flows*, Palm Springs, California, March 2006.
- [I87] **Raeder, J.**, Parallel electric fields and time-dependent reconnection at Earth's magnetopause, *Boston University Colloquium*, Boston, MA, October 2006.
- [I88] **Raeder, J.**, Progress and Challenges in Modeling the Geospace Environment, *CAWSES International Workshop on Space Weather Modeling*, Yokohama, Japan, November 2006.
- [I89] **Raeder, J., and J. Dorelli**, Global Simulation of Cluster - Doublestar-1 Flux Transfer Events, *AGU Fall Meeting*, San Francisco, California, December 2006.
- [I90] **Kaghashvili, E. K. and J. Raeder**, Interaction of solar ULF waves with the magnetosphere, *6th Annual International Astrophysics Conference on Turbulence and Nonlinear Processes in Astrophysical Plasmas*, Oahu, HI, March 2007.
- [I91] **Raeder**, OpenGGCM development and applications, *Space Weather Week*, NOAA/SEC, Boulder, Colorado, April 2007.
- [I92] **Raeder, J., B. Loring, D. Larson, J. Dorelli, E. Kaghashvili, and K. Germaschewski**, Small-scale physics from large-scale simulations, *ASTRONUM 2007*, Paris, France, June 2007.
- [I93] **Raeder, J., D. Larson, H. Korth, and B. Anderson**, OpenGGCM comparisons with ionospheric data, *IUGG 2007 Assembly*, Perugia, Italy, July 2007.
- [I94] **Raeder**, Large-scale field, flow, and plasma (reporter review), *IUGG 2007 Assembly*, Perugia, Italy, July 2007.

Contributed presentations

- [C1] **Raeder, J., A. Ebel, and J. Wohlenberg**, Thermomechanische Auswirkungen der Endlagerung hochradioaktiver Abfälle in Salzdiapiren, *45. Jahrestagung der DGG*, München, 1985.
- [C2] **Raeder, J., F. M. Neubauer, N. F. Ness, and L. F. Burlaga**, Macroscopic perturbations of the IMF by P/Halley as seen by the GIOTTO magnetometer, *20th ESLAB Symposium on the Exploration of Halley's Comet*, Heidelberg, FRG, 1986.
- [C3] **Raeder, J., R. D. Sydora, and F. M. Neubauer**, Transport of pickup ions in cometary atmospheres, *AGU Fall Meeting*, San Francisco, California, (EOS, vol. 68, no. 44), 1987.
- [C4] **Raeder, J.**, Mehflüssigkeiten Teilchen-MHD Simulation der Wechselwirkung eines Kometen mit dem Sonnenwind, *48. Jahrestagung der DGG*, Köln, 1988.
- [C5] **Raeder, J., and F. M. Neubauer**, A simulation study of the interaction of a comet with discontinuities in the solar wind, *AGU Fall Meeting*, San Francisco, California, (EOS, vol. 69, no. 44), 1988.
- [C6] **Raeder, J., and F. M. Neubauer**, Eine Simulationsstudie zur Wechselwirkung eines Kometen mit Diskontinuitäten im Sonnenwind, *49. Jahrestagung der DGG*, Stuttgart, 1989
- [C7] **Raeder, J., F. M. Neubauer, L. F. Burlaga, G. Musmann, and N. F. Ness**, Similarities of the Halley pileup boundary with solar wind sector boundaries, *AGU Chapman Conference on Cometary Plasma Processes*, Guildford, UK, 1989.
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