

JAMES WANLISS

PERSONAL

Born 9 April 1971, King William's Town, Rep. South Africa
Status Married to Seung-Hyun Kang, two children
Immigration South Africa, Canada, US permanent resident

EDUCATION

Ph.D. Space Plasma Physics

Univ. of Alberta, Edmonton, AB, 2000
Thesis: Fast ion flows in the Earth's Magnetotail
Advisors: Dr. Gordon Rostoker, Dr. Richard D. Sydora

M.Sc. Exploration Geophysics

Univ. of the Witwatersrand, Johannesburg, South Africa, 1995
Thesis: A Study of Temporal Variations of the Geomagnetic Field with
Reference to Aeromagnetic Surveys
Advisor: Dr. Luc A.G. Antoine

B.Sc. (Hons.) Physics (First Class)

Univ. of Cape Town, Cape Town, South Africa, 1992

B.Sc. Physics and Applied Mathematics (Distinction in Physics)

Univ. of Cape Town, Cape Town, South Africa, 1991

GRANTS AND PROJECTS

- 2010-2011** • NASA Grant Program/South Carolina Space Grant Consortium
Title: Space Weather, \$2,000
PI: James Wanliss
- 2006-2007** • Embry-Riddle Aeronautical University Research Fund
Title: Bridging the Gap between Behavior Science and Physics: A Study of the Task Fidelity on Human Transfer of Learning, \$11,601
Co-I: James Wanliss
- 2005-2011** • National Science Foundation CAREER Award
Title: Scale-independent Measures and Prediction of Space Weather, \$410,606
PI: James Wanliss
- 2004-2009** • National Science Foundation, Division of Mathematical Sciences
Title: Spatiotemporal Multifractal Modeling and Local Prediction of Magnetic Storms, \$167,056
PI: James Wanliss
- 2005-2006** • National Aeronautics and Space Administration
Title: Human Exploration and Development of Space (HEDS) High School Teachers Program, \$145,200
Co-I: James Wanliss
- 2003-2004** • Embry-Riddle Aeronautical University Research Fund
Title: Neural network predictions of auroral dynamics for a solar cycle, \$12,000

- 2003-2004 *PI: James Wanliss*
 • NASA Grant Program/Florida Space Grant Consortium
Title: Martian Aerial Reconnaissance Vehicle, \$6,125
PI: James Wanliss

OTHER AWARDS AND HONOURS

- 2009 • Kyung Hee University, Department of Space Science, Visiting Associate Professor, May-August 2009.
- 2008 • Clemson University, Department of Physics, Visiting Associate Professor (Sabbatical), February-July 2008.
- 2007 • University of Nagoya, Solar-Terrestrial Environment Laboratory, Visiting Associate Professor, May 15-August 22, 2007.
- 2006 • NASA Goddard Space Flight Center, Visiting Scientist, September 28-29, 2006.
- 2005 • Invited science consultant, *Addison Wesley Physics Education Forum*, San Francisco, CA, April 30, 2005.
- 2005 • Invited science expert, *Florida Summit on Mathematics and Science*, Tampa, FL, January 26-27, 2005.
- 1999-2000 • Province of Alberta Graduate Fellowship
- 1999 • American Geophysical Union – Fall Meeting in San Francisco, *Outstanding Student Paper Award*
- 1999 • University of Washington, Seattle, *Visiting scholar*
- 1998 • American Geophysical Union – Spring Meeting in Boston, *Outstanding Student Paper Award*
- 1995-1997 • *South African National Postgraduate Bursary*
 • *University of Witwatersrand Postgraduate Scholarship*
 • *University of Alberta PhD Recruitment Scholarship*
- 1989-1992 • *Deans Merit List Award; University of Cape Town*

WORK EXPERIENCE

- 2008-present Presbyterian College
Associate Professor
- 2006-2008 Embry-Riddle Aeronautical University
Associate Professor, Tenured
- Teach undergraduate and graduate Physics and Space Science courses
 - Contribute to research in Space Physics
 - **PS103** - Technical Physics I (non-Calculus), Basic classical mechanics, work, energy, and momentum (Fall 2002, 2007, Spring 2003)
 - **PS104** - Technical Physics II (non-Calculus), Fluids, thermodynamics, SHM, basic E & M (Fall 2002)
 - **PS150** –Physics I for Engineers, Calculus based survey course in mechanics and special relativity (Summer 2003, Spring 2004, Summer 2004, Fall 2006)
 - **PS160** -Physics II for Engineers, Calculus based survey course in rotational motion, SHM, fluids, thermodynamics (Summer 2003)

- **PS208** – Physics II, Fluid mechanics, SHM, heat, thermodynamics, kinetic molecular theory, geometrical optics, (Spring 2003, Fall 2003)
 - **PS250** – Physics III for Engineers, Introduction to Electromagnetic Fields (Summer 2004)
 - **EP410** - Space Physics (Spring 2003, 2004, 2005, Fall 2003, 2004, 2005, 2007)
 - **EP509** - Advanced Space Physics (Fall 2002, Fall 2003, Fall 2004, Spring and Fall 2006)
 - **EP501** – Numerical Analysis and Scientific Computing (Fall 2007)
 - **HONS250** – The Politics and Science of Fear (Spring 2007)
 - **EP399/499/699** – Special Topics in Physics (Undergraduate/Graduate) (Fall 2005, 2006, Spring 2005, 2006, 2007)
- 2002-2006**
Embry-Riddle Aeronautical University
Assistant Professor
- 2000-2002**
University of Alberta
Sessional Lecturer
- **PHYS130** - Wave motion, Optics, and Sound for students of Engineering (Fall 2000, 2001)
 - **PHYS230** - Electricity and Magnetism for students of Engineering (Winter 2001)
 - **GEOPHYS429** – Upper Atmosphere and Space Physics (Winter 2002)
- 2000-2002**
Canadian Space Agency/University of Alberta
Research Scientist
- Contracted to develop data analysis and modelling techniques for the Space Weather program.
 - Member of the Centre for Data Analysis and Modelling (CDAM) at the University of Alberta.
- 1995-2000**
University of Alberta
Physics Teaching Assistant
- Taught first year undergraduate laboratory courses (Fall/Winter)
- 1995**
University of Cape Town, Department of Mathematics
Mathematics Teaching Assistant
- Taught Math majors Real Analysis, Ordinary DEs (Feb.-Aug.)
- 1993-1995**
University of the Witwatersrand
Physics Teaching Assistant
- Taught first year undergraduate laboratory courses (Fall/Winter)
- 1994 (Apr.-Sept.)**
Department of Water Systems Research, Univ. Witwatersrand
Geophysical Consultant
- Determined hydrological parameters of the Lingerette Street Catchment using magnetic and electromagnetic geophysical surveys.
- 1989-1994**
Southern Oil Exploration Corporation (SOEKOR)
Summer Student Geophysicist
- Analysis of seismic data

PROFESSIONAL ACTIVITIES AND ASSOCIATIONS

- *Member:* American Geophysical Union (Since 1995)
- *Member:* European Geophysical Union (since 2005)
- *Member:* American Physical Society
- *Member:* Aircraft Owners and Pilots Association
- *Science Team Member:* CANOPUS auroral array
- *Referee:* J. of Geophysical Research, Geophysical Research Letters, J. Atmos. Sol. Terr. Physics, Ann. Geophys., Geophys. J. Intl.
- *Reviewer:* NSF proposals to Atmospheric Division
- *Graduate Advising:* D. Cersosimo (graduated 5/2005), M. Montecalvo (12/2005), Anna Mytyk (4/2007) (Embry-Riddle Aeronautical University)
- *Convenor and Session Chair:* NG03, Spatial and Temporal Scaling in Earth and Space Sciences: Forecasting, American Geophysical Union Spring Meeting, May 2007.
- Nonlinear Geosciences Executive Committee Member, American Geophysical Union, 2005-present. Secretary, 2008- present
- *Convenor:* Complexity and Self-organization in Solar, Magnetospheric and Heliospheric Phenomena, Asia Oceania Geosciences Society, Pusan, Korea, June 16-20, 2008.

REFEREED PUBLICATIONS

1. **Wanliss, J.**, and P. Dobias (2010), *Detrended Fluctuation Analysis of Combat in Afghanistan*, J. Battlefield Tech., 13,3, 25-29.
2. Yu, Z.-G., V. Anh, Y. Wang, D. Mao, and **J. Wanliss** (2010), *Modeling and simulation of the horizontal component of the geomagnetic field by fractional stochastic differential equations in conjunction with empirical mode decomposition*, J. Geophys. Res., 115, A10219, doi:10.1029/2009JA015206.
3. **J. Wanliss**, M. Watke, and J. Johnson (2010), *Variability in the Solar Wind Parameters over a Solar Cycle and their Ground Signatures*, in (eds.) Milan Maksimovic et al., Twelfth International Solar Wind Conference, AIP Proceedings 1216, pp. 675-678.
4. **Wanliss, J.A.** and V. M. Uritsky (2010), *Understanding bursty behavior in midlatitude geomagnetic activity*, J. Geophys. Res., 115, A03215, doi:10.1029/2009JA014642.
5. P. Martin, N. E. Turner, and **J. Wanliss**, *Timing of substorm related auroral oscillations*, Earth Planets Space, Vol. 61 (No. 5), pp. 615-619, 2009.
6. Dobias, P. and **Wanliss, J.A.**, *Intermittency of Storms and Substorms: Is it Related to the Critical Behaviour?*, Annales Geophysicae, Volume 27, 5, 2009, pp.2011-2018.
7. Anh, V., Yu, Z.-G., and **Wanliss, J. A.** (2007), *Analysis of global geomagnetic variability*, Nonlin. Processes Geophys., 14, 701-708.
8. **James Wanliss**, Dahai Liu, Vadim Uritsky, and Michael Wuergler (2007), *Fractal Modeling of Human Psychomotor Skills*, Lecture Notes in Computer Science, V.G. Duffy (Ed.): Digital Human Modeling, HCII 2007, LNCS 4561, pp. 474-482.
9. **Wanliss, J. A.**, and J. M. Weygand (2007), *Power law burst lifetime distribution of the SYM-H index*, Geophys. Res. Lett., 34, L04107, doi:10.1029/2006GL028235.
10. **Wanliss, J.A.**, and P. Dobias (2007), *Space Storm as a Phase Transition*, J. Atmos. Sol. Terr. Phys., doi:10.1016/j.jastp.2007.01.001, 69, 675-684.
11. Dobias, P., **J. A. Wanliss**, and J. C. Samson (2007), *Nonlinear Stability of the Near-Earth Plasma Sheet during Substorms: February 9, 1995 event*, Can. J. Physics, 69, 675-684.

12. Cersosimo, D. O., and **Wanliss, J.A.** (2007), *Initial Studies of high latitude magnetic field data during different magnetospheric conditions*, Earth Planets Space, Vol. 59 (1), pp. 39-43.
13. **Wanliss, J. A.** (2006), *Substorm onset location and dipole tilt angle*, Annales Geophysicae, 24: 577-588.
14. **Wanliss, J. A.**, and D. O. Cersosimo, *Scaling properties of high latitude magnetic field data during different magnetospheric conditions*, Substorms-8, Proceedings 8th International Conference on Substorms, Banff, Canada, 325-329, 2006.
15. **Wanliss, J. A.**, and G. Rostoker, *IMAGE analysis and modeling of substorm onsets*, Substorms-8, Proceedings 8th International Conference on Substorms, Banff, Canada, 331-335, 2006.
16. **Wanliss, J. A.**, and K. M. Showalter, *High-resolution global storm index: Dst versus SYM-H*, J. Geophys. Res., 111, A02202, doi:10.1029/2005JA011034, 2006.
17. Z.-G. Yu, V. V. Anh, **J. A. Wanliss**, and S. Watson, *Chaos game representation of DST and its multifractal analysis*, doi:10.1016/j.chaos.2005.12.046, Chaos Solitons Fractals, 2006.
18. Dobias, P., and **J. A. Wanliss**, *Nonlinear Stability of the Near-Earth Plasma Sheet During Substorms*, Substorms-8, Proceedings 8th International Conference on Substorms, Banff, Canada, 49-53, 2006.
19. **Wanliss, J.A.**, *Statistical Precursors to Space Storm Onset*, in Multiscale Coupling of Sun-Earth Processes, (eds.) A.T.Y. Lui, Y. Kamide, and G. Consolini, Elsevier, 99-112, 2005.
20. **Wanliss, J. A.**, V. V. Anh, Z.-G. Yu, and S. Watson, *Multifractal modeling of magnetic storms via symbolic dynamics analysis*, J. Geophys. Res., doi:10.1029/2004JA010996, 2005.
21. Anh, V. V., Z.-G. Yu, **J. A. Wanliss**, and S. M. Watson, *Prediction of magnetic storm events using the Dst index*, Nonlin. Proc. Geophys., 12, 799-806, 2005.
22. **James Wanliss**, Rodney Piercey, Joseph Mosca, and Christina Frederick, *Space Science in the American Classrooms: the Teachspace Experience*, Proc. 1st Space Exploration Conference, Orlando, FL, AIAA-2005-2718, 1052-1055, 2005.
23. **Wanliss, J. A.**, *Fractal properties of SYM-H during quiet and active times*, J. Geophys. Res., 110, A03202, doi:10.1029/2004JA010544, 2005.
24. **Wanliss, J. A.**, *Nonlinear variability of SYM-H over two solar cycles*, Earth Planets Space, 56, e13-e16, 2004.
25. Mitsutake, G., Otsuka, K., Oinuma, S., Ferguson, I., Cornelissen, G., **Wanliss, J.**, and Halberg, F., *Does exposure to an artificial ULF magnetic field affect blood pressure, heart rate variability, and mood?*, Biomedicine & Pharmacotherapy, 58 (Suppl. 1), S20-S27, 2004.
26. Rae, I. J., K. Kabin, R. Rankin, F. R. Fenrich, W. Liu, **J. A. Wanliss**, A. J. Ridley, T. I. Gombosi, and D. L. De Zeeuw, *Comparison of photometer and global MHD determination of the open-closed field line boundary*, J. Geophys. Res., 109, A01204, doi:10.1029/2003JA009968, 2004.
27. **J. A. Wanliss**, James Cunningham, and Rodney Piercey, *Adventures in Aerospace: Embry-Riddle Experiences*, Proceedings of the International Symposium on Advancement of Aerospace Education and Collaborative Research in the 21st Century, Hankuk Aviation University, Republic of Korea, 3-14, 2004.
28. P. Dobias, **J. A. Wanliss**, I. O. Voronkov, and J. C. Samson, *On the Stability of the Near-Earth Magnetotail at Growth Phase*, Substorms-7, Proceedings International Conference on Substorms-7, Levi, Lapland, 2004.
29. **Wanliss, J. A.** and M. A. Reynolds, *Fractal dimension of low-latitude geomagnetic temporal variations*, Ann. Geophysicae, 21, 2025-2030, 2003.
30. Lu, J. Y., R. Rankin, R. Marchand, V. T. Tikhonchuk, and **J. Wanliss**, *Finite element modeling of nonlinear dispersive field line resonances: Trapped shear Alfvén waves inside field-aligned density structures*, J. Geophys. Res., 108(A11), 1394, doi:10.1029/2003JA010035, 2003.

31. **Wanliss, J. A.** and R. Rankin, *Auroral substorm dynamics and field line resonances*, Earth Planets Space, 54, 927-932, 2002.
32. **Wanliss, J. A.**, R. Rankin, J. C. Samson, and V. T. Tikhonchuk, *Field line resonances in a stretched magnetotail: CANOPUS optical and magnetometer observations*, J. Geophys. Res., 107(0), 10.1029/2001JA000257, 2002.
33. Mitsutake, G., Oinuma, S., Kubo, Y., Yamanaka, T., Otsuka, K., Ohkawa, S., Cornélissen, G., Halberg, F., **Wanliss, J.**, *Does exposure to artificial ULF waves affect blood pressure and heart rate variability?*, Proceedings 3rd International Symposium: Workshop on Chronoastrobiology and Chronotherapy, Otemachi, Chiyodaku, Tokyo, 9 Nov 2002, pp. 31-35.
34. **Wanliss, J. A.** and R. Rankin, *Relationship of oscillating aurora to substorms and magnetic field line resonances*, in (ed.) R.M. Winglee, Proc. Substorms-6, International Conference on Substorms-6, Seattle, USA, 105-109, 2002.
35. **Wanliss, J. A.**, R. D. Sydora, G. Rostoker, and R. Rankin, *Origin of some anisotropic flows in the plasma sheet*, Ann. Geophysicae, 20, 1559-1575, 2002.
36. Mitsutake, G., Cornélissen, G., Otsuka, K., **Wanliss, J.**, and Halberg, F., *Does exposure to artificial ULF waves affect mood?*, Proceedings 2nd International Symposium, Workshop on Chronoastrobiology and Chronotherapy, Otemachi, Chiyodaku, Tokyo, 17 Nov 2001, pp. 40-41.
37. **Wanliss, J. A.**, J. C. Samson, and E. Friedrich, *On the use of photometer data to map dynamics of the magnetotail current sheet during substorm growth phase*, J. Geophys. Res., 105, 27673-27684, 2000.
38. **Wanliss, J. A.** and R. D. Sydora, *Distribution function mapping Technique to model Distributed Plasma Sources and flows in Space Plasmas*, Proceedings of the Seventeenth International Conference on the Numerical Simulation of Plasmas, Banff, Alberta, 134-137, 2000.
39. **Wanliss, J. A.**, *Fast ion flows in the Earth's Magnetotail*, Thesis (PhD), UNIVERSITY OF ALBERTA (CANADA), Source DAI-B 62/05, p. 2358, Nov 2001, 163 pages, 2000.
40. Petrukovich, A. A., **J. A. Wanliss**, T. Mukai, T. Yamamoto, S. Kokubun, *Small-amplitude bipolar flows in the near-earth tail*, Geophys. Res. Lett., 26, 2909-2912, 1999.
41. Mann, Ian R., Gareth Chisham, **James A. Wanliss**, *Frequency-doubled density perturbations driven by ULF pulsations*, J. Geophys. Res., 104, 4559-4565, 1999.
42. Petrukovich, A. A., **J. A. Wanliss**, T. Mukai, T. Yamamoto, S. Kokubun, 1998, *Small-amplitude tailward flows and dipolarizations in the near-earth tail*, in (eds.) S. Kokubun and Y. Kamide, Proc. Substorms-4, International Conference on Substorms-4, Lake Hamana, Japan, . Terra Scientific Publ. Co., Tokyo; Kluwer Academic Publ., Dordrecht, p.207, 1998.
43. **Wanliss, J. A.**, *The sun-earth connection in geophysics*, South African Geophysical Association Newsletter, April 1998, 23.
44. **Wanliss, J. A.**, *A Study of Temporal Variations of the Geomagnetic Field with Reference to Aeromagnetic Surveys*, Thesis (MSc), UNIVERSITY OF THE WITWATERSRAND (SOUTH AFRICA), 162 pages, 1995.
45. **Wanliss, J. A.** and L. A. G. Antoine, *Geomagnetic micropulsations: Implications for high resolution aeromagnetic surveys*, Exploration Geophysics, 26, 535-538, 1995.
46. **Wanliss, J. A.** and L. A. G. Antoine, *Hydrological parameters of the Lingerette Street Catchment*, report for the Department of Water Systems Research, Johannesburg, South Africa, 1994.
47. **Wanliss, J. A.**, *Light Pulse Shapes from Scintillators and improved Pulse Shape Discrimination for ⁶Li Glass Scintillators*, B.Sc Hons. thesis, University of Cape Town, Cape Town, South Africa, 1992.

CONTRIBUTED PAPERS (*=INVITED)

1. **Wanliss, J.A.**, V. Uritsky, and J. Weygand, *Solar Wind Influences on Critical Behaviour of the Terrestrial Magnetosphere*, European Planetary Science Congress, Rome, Italy, September 19-24, 2010.
2. **Wanliss, J. A.** and P. Dobias, *Persistence of Trends in Significant Events in Afghanistan: Use of Detrended Fluctuation Analysis for Combat Data*, NATO Modeling & Simulation Group (NMSG) Workshop: “Modelling and Simulation of Complex Systems in Public Safety and Military Operations”, (NMSG-082), Ottawa, Canada, May 3-5, 2010.
3. **Wanliss, J. A.**, *Comparative study of dynamical critical scaling in the space storm index versus solar wind fluctuations*, Dynamical Processes in Space Plasmas, Dead Sea, Israel, 13 April 2010.
4. **Wanliss, J. A.**, A Model of Fast Tailward flows with positive Bz in the plasma sheet (2010), ICS10, Tenth International Conference on Substorms, California, March 22-26, 2010.
5. **Wanliss, James**, James Johnson, Thomas Bitner, and Michael Watke (2010), *Space weather prediction via complexity measures in the solar-terrestrial record*, Seventh Symposium on Space Weather, AMS Annual Meeting, Atlanta, 17-21 January 2010.
6. **Wanliss, James** (2009), *Solar Wind Influence on Magnetosphere Fluctuations: Waiting Times and Critical Scaling*, 12th International Solar Wind Conference, St. Malo, France, 21-26 June, 2009.
7. **Wanliss, J.A.** (2009), *More evidence of the critical nature of the magnetosphere*, Modern Challenges in Nonlinear Plasma Physics, Halkidiki, Greece, 15-19 June 2009.
8. **Wanliss, James** and Miguel Larsen (2009), *High-latitude atmospheric turbulence examined through TMA trails*, Chiba City, Japan, 16-21 May.
9. Johnson, James, Michael Watke, and **James Wanliss** (2009), *Investigations of the Global Space Storm Index*, *Space Weather Workshop*, April 28-May 1, Boulder, CO.
10. **Wanliss, J.A.**, and M.F. Larsen (2009), *High-latitude atmospheric turbulence examined through TMA trails*, JPGU Annual Meeting, Tokyo, Japan.
11. **Wanliss, J.A.**, and M.F. Larsen (2008), *In-situ observations of high-latitude atmospheric turbulence*, Author(s) (2008), *Eos Trans. AGU*, 89(53), Fall Meet. Suppl., Abstract A13A-0202.
12. **Wanliss, J.A.** (2008), *Critical Behavior in the Solar Wind and Magnetosphere over a Solar Cycle*, Chapman Conference on Universal Heliophysical Processes, Savannah, GA.
13. **Wanliss, J.A.**, and M.F. Larsen (2008), *Multiscale In-Situ Observations of Substorm related High-latitude Joule heating*, Asia Oceania Geosciences Society Meeting, ST13-A035.
14. **Wanliss, J.A.** (2008), *Multiscale Phenomena of the Magnetosphere*, Asia Oceania Geosciences Society Meeting, ST10-A011.
15. **Wanliss, J. A.**, Anh, V. V., and Z.-G. Yu (2008), *A New Forecasting Technique for Extreme Events in the Geosciences*, *Eos Trans. AGU*, 89 (23), Jt. Assem. Suppl., Abstract SM24-08.
16. **Wanliss, J. A.**, Anh, V. V., and Z.-G. Yu (2008), *Day to Week ahead Prediction of Large Space Storms*, NOAA Space Weather Workshop, April 28 - May 1, 2008, Boulder, CO.
17. Dobias, P., **J. Wanliss**, and D. Bickel (2008), *Intermittency of storms and substorms: Implications for critical behaviour of magnetosphere*, *Ninth International Conference on Substorms*, Vol. 1, ICS9-A-00041, 2008.
18. ***Wanliss, J. A.** (2007), *Self-Organised and Critical Behaviour of the Terrestrial Magnetosphere from High- to Low- Latitudes*, *Eos Trans. AGU*, 88(52), Fall Meet. Suppl., Abstract NG34A-07.
19. **Wanliss, J. A.** (2007), *When is it alright to use SYM-H as a Storm Index?*, *Eos Trans. AGU*, 88(52), Fall Meet. Suppl., Abstract SM32A-05.
20. **James Wanliss**, Dahai Liu, Vadim Uritsky, Michael Wuergler (2007), *Fractal Modeling of Human Psychomotor Skills Acquisition Process*, International Conference on Human-Computer Interaction, Beijing, China.
21. **James Wanliss**, Vo V. Anh, Z.-G. Yu (2007), *Regional space weather models via ground-based data*, SuperDarn 2007 Workshop, Abashiri, Hokkaido, Japan.

22. **James Wanliss**, Vo V. Anh, Z.-G. Yu, and M. G. Grysko (2007), *Towards regional space weather models of geomagnetic field variability*, NOAA/SEC Space Weather Conference, Boulder, CO.
23. John Samson, Peter Dobias, and **James Wanliss**, (2007), *Magnetotail stability during substorms*, THEMIS Launch Conference, Titusville, Florida.
24. **Wanliss, J. A.**, and V. M. Uritsky (2007), *Signatures of Self-Organized Criticality in Low-Latitude Magnetosphere*, Eos Trans. AGU, 88(23), Jt. Assem. Suppl., Abstract NG44A-08.
25. **James Wanliss**, Robert Rankin, John Samson, and V. Tikhonchuk (2007), *How thin does the magnetotail really get during substorm growth phase?*, THEMIS Launch Conference, Titusville, Florida.
26. **Wanliss, J. A.**, V. V. Anh, and Z.-G. Yu (2007), *Multifractal Analysis of INTERMAGNET Stations: A First Step Toward Global Characterizations*, Chapman Conference on Mid-latitude Ionospheric Dynamics and Disturbances, 3-6 January, Yosemite, CA.
27. **Wanliss, J. A.** (2006), *Space Storm as a Dynamical Phase Transition*, Eos Trans. AGU, 87(52), Fall Meet. Suppl., Abstract NG23A-05.
28. Martin, P., N. Turner, and **J. A. Wanliss** (2006), *Auroral Substorm Oscillations and Field Line Resonances*, Eos Trans. AGU, 87(52), Fall Meet. Suppl., Abstract SM31B-0328.
29. Dobias, P., and **J. A. Wanliss** (2006), *Substorms as Nonequilibrium Systems*, Eos Trans. AGU, Fall Meet. Suppl., Abstract SM51B-1398.
30. **Wanliss, J. A.**, *INTERMAGPLOT: A Software Tool for easy access to the INTERMAGNET data set*, NSF GEM Workshop, Snowmass, CO, June 2006.
31. **Wanliss, J. A.**, and D. O. Cersosimo, *Scaling properties of high latitude magnetic field data during different magnetospheric conditions*, 8th International Conference on Substorms, Banff, Canada, March 2006.
32. **Wanliss, J. A.**, and G. Rostoker, *IMAGE analysis and modeling of substorm onsets*, 8th International Conference on Substorms, Banff, Canada, March 2006.
33. Dobias, P., and **J. A. Wanliss**, *Nonlinear Stability of the Near-Earth Plasma Sheet During Substorms*, Substorms-8, 8th International Conference on Substorms, Banff, Canada, March 2006.
34. **Wanliss, J. A.**, and P. Dobias, *Space Storm as a Critical Phase Transition*, Eos Trans. AGU 86(52), Fall Meet. Suppl., Abstract SM33E-01, 2005.
35. ***Wanliss, J. A.**, *Measures for Space Weather Prediction*, NIS/SAMSI CMG Workshop, Raleigh, NC, October 2005.
36. **Wanliss, J. A.**, *Multiscale Models for Space Weather*, NSF GEM Workshop, Santa Fe, NM, July 2005.
37. **Wanliss, J. A.**, V. V. Anh, Z.-G. Yu, and S. M. Watson, *How to use Measures in Space Storm Prediction*, NSF GEM Workshop, Santa Fe, NM, July 2005.
38. Cersosimo, D., and **J. A. Wanliss**, *Ground Based Magnetometer Statistics as a Window on Magnetospheric Processes*, NSF GEM Workshop, Santa Fe, NM, July 2005.
39. **James Wanliss**, Rodney Piercey, Joseph Mosca, and Christina Frederick, *Space Science in the American Classrooms: the Teachspace Experience*, Proc. 1st Space Exploration Conference, Orlando, FL, AIAA-2005-2718, 2005
40. **Wanliss, J.A.**, V.V. Anh, Z.-G. Yu, S. Watson, *Multifractal Modelling of Dst via Recurrent Iterated Function Systems*, Eos Trans. AGU, 85(47), Fall Meet. Suppl., Abstract NG41B-0429, 2004.
41. Dobias, P., I. Voronkov, and **J. Wanliss**, *Liapunov Stability of Plasmas: An Application to the Earth's Magnetotail at Substorms*, 85(47), Fall Meet. Suppl., Abstract SM11A-1175, 2004.
42. **J. A. Wanliss**, James Cunningham, and Rodney Piercey, *Adventures in Aerospace: Embry-Riddle Experiences*, International Symposium on Advancement of Aerospace Education and

Collaborative Research in the 21st Century, Hankuk Aviation University, Republic of Korea, June 17-19, 2004.

43. **J. A. Wanliss**, Schools Space Weather Monitoring System (SSWMS), EAA AirVenture Oshkosh's Teachers Day, Oshkosh, Wisconsin, July 29, 2004.
44. Cersosimo, D. and **J. A. Wanliss**, Multifractionality in the High-Latitude Quiet Time Magnetosphere, NSF GEM Workshop, Telluride, CO, June 2004.
45. Montecalvo, M., **J. Wanliss**, P. Dobias, and J. Samson, *Magnetotail equilibria during substorm growth phase*, NSF GEM Workshop, Telluride, CO, June 2004.
46. Showalter, K. and **J. A. Wanliss**, *Long-Term Comparisons of SYM-H and Dst*, NSF GEM Workshop, Telluride, CO, June 2004.
47. Dobias P., **J. A. Wanliss**, I.O. Voronkov, and J. C. Samson, Observation constrained equilibria, plasma instabilities, and substorm intensification phase, Winnipeg, Canada, 2004.
48. Dobias, P., **J. A. Wanliss**, I. O. Voronkov, J. C. Samson, On the stability of the near-Earth magnetotail at growth phase, International Conference on Substorms-7, Levi, Finland, 2004.
49. **Wanliss, J. A.**, Nonlinear statistical precursors to space storm onset, Conf. Sun-Earth Connections, Kona, HI, Feb. 2004.
50. **Wanliss, J. A.** and R. Rankin, The Significance of Dipole Tilt for Substorm Onsets, *Eos Trans. AGU*, 84(46), Fall Meet. Suppl., Abstract SM32A-1140, 2003.
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67. **Wanliss, J. A.**, J. C. Samson, and R. Rankin, *Mapping the magnetosphere via natural tracers*, Space Environment Meeting, Banff, Alberta, Canada, October 2000.
68. **Wanliss, J. A.** and R. D. Sydora, *Distribution function mapping Technique to model Distributed Plasma Sources and flows in Space Plasmas*, Seventeenth International Conference on the Numerical Simulation of Plasmas, Banff, Alberta, 2000.
69. **Wanliss, J. A.**, J. C. Samson, E. Friedrich, G. Rostoker, and R. D. Sydora, *Mapping magnetotail current sheet thickness using photometer data*, American Geophysical Union Fall Meeting, San Francisco, U.S.A., EOS Transac., December 1999.
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71. **Wanliss, J. A.** and G. Rostoker, *Tailward ion beams in the plasma sheet and its boundary layer*, American Geophysical Union Spring Meeting, Boston, U.S.A., EOS Transac., 148, May 1998.
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73. **Wanliss, J. A.**, *Particle dynamics due to the cross-magnetotail current*, presented at a University of Alberta colloquium, October 1997.
74. **Wanliss, J. A.**, G. Rostoker, W. W. Liu, *A Source for Anti-Earthward Anisotropic Flows in the Plasma Sheet*, Chapman Conference on the Earth's Magnetotail: New Perspectives, Kanazawa, Japan, November 1996.
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INVITED PRESENTATIONS AT OTHER ORGANIZATIONS (SINCE 1996)

1. Harvard University, Smithsonian Institute for Astrophysics, Cambridge, MA, *Teaching Physics in a Liberal Arts Environment*, October 7, 2010.
2. Kyung-Hee University, Suwon, Korea, Department of Astronomy and Space Science, *Solar wind control of inner magnetosphere disturbances*, July 22, 2009.
3. Princeton Plasma Physics Laboratory (PPPL), Princeton University, New Jersey, *Complex behavior in Space Plasmas*, March 5, 2009.
4. Air Force Research Laboratory, Hanscomb Air Force Base, Massachusetts, *Modern Space Weather Prediction Techniques*, November 21, 2008.
5. Nagoya University, Solar-Terrestrial Environment Laboratory, *The Avalanching Magnetosphere*, August 8, 2007.
6. Nagoya University, Solar-Terrestrial Environment Laboratory, *Learning about the magnetosphere and substorms through geomagnetic field models and data assimilation*, June 8, 2007.
7. Kyung-Hee University, Suwon, Korea, Department of Astronomy and Space Science, *How thin does the magnetotail really get during substorm growth phase?*, May 24, 2007.
8. Korean Advanced Institute for Science and Technology (KAIST), Taejon, Korea, *Critical Systems approaches in Space Physics*, May 15, 2007.
9. University of Houston, Department of Physics, *Complexity in the Terrestrial Magnetosphere*, April 24, 2007.
10. Auburn University, Department of Physics, *Phase Transitions in the Terrestrial Magnetosphere*, February 16, 2007.
11. NASA Goddard Space Flight Center, *Cosmic Love: Space Storm as a Multifractal Dynamical Transition*, September 29, 2006.
12. Wanliss, J. A., Liberty University, *Space Weather: The finger of God in Stormy Times*, September 26, 2006.
13. Florida Institute of Technology, Department of Physics, *SOC and Nonlinearities in Space Weather*, May 2006.
14. University of Central Florida, Orlando, Department of Physics, *Hurricanes in Space*, September 2005.
15. National Institute of Statistical Sciences, *Measures in Space Physics*, October 2005.
16. Embry-Riddle Aeronautical University, Daytona Beach, Department of Physics, *The Physics of Love*, October 2005.
17. Kyung-Hee University, Suwon, Korea, Department of Astronomy and Space Science, Seminar entitled *"The Moon, Mars, and beyond: Perspectives from Space Physics"*, May 24, 2005.
18. Chungnam National University, Taejon, Korea, Department of Astronomy and Space Science, Seminar entitled *Space Weather: Fireballs in the Magnetosphere*, May 13, 2005.
19. Korean Advanced Institute for Science and Technology (KAIST) and Korea Astronomical Observatory (KAO), Taejon, Korea, *Space Storms as Critical Phase Transitions*, May 12, 2005.
20. University of Central Florida, Orlando, Department of Mathematics, *Statistical Physics Approaches in Space Physics*, March 2005.
21. Mathematical Association of America, Embry-Riddle Aeronautical University, Florida, *Chaos and Nonlinear Dynamics in Space*, November 2003.
22. Korea Astronomical Observatory, Taejon, Korea, *Space Weather Effects and Research*, May 2002.

23. Kyung-Hee University, Suwon, Korea, *Fast Ion Flows in the Earth's Magnetotail*, May 2002.
24. Embry-Riddle Aeronautical University, Florida, U.S.A., *Remote Sensing the Magnetosphere with Auroral Tracers*, April 2002.
25. Fort McMurray Discovery Centre, Alberta, Canada, *Living with a Star: the Aurora, Space Weather, and Us*, February 2002.
26. Department of Geophysics, University of Washington, Seattle, U.S.A., *Models of Bursty Bulk Flows*, April 1999.
27. ISAS (Japanese Space Agency), *Field Line Resonances in Theory and Data*, April 1997.