

# Curriculum Vitae

(Last updated: 18 April 2012)

Name: Hiroshi Hasegawa

Date of birth: 25.6.1974

Nationality: Japan

E-mail: [hase@stp.isas.jaxa.jp](mailto:hase@stp.isas.jaxa.jp)

## **Interests**

Anomalous transport of non-collisional plasma, Magnetospheric physics

## **Educational background**

April, 1993 - March, 1997

Undergraduate student at Department of Physics, Nagoya University

April, 1997 - March, 2002

Master (1997-1999) and Ph.D. (1999-2002) course student at Division of Particle and Astrophysical Science, Nagoya University  
(supervisor: Kiyoshi Maezawa)

## **Professional experience**

June, 2002 - March, 2005

Research Associate at Thayer School of Engineering, Dartmouth College

April, 2005 - December, 2005

Research Fellow (PD) of JSPS, Tokyo Institute of Technology

January, 2006 - August, 2007

Research Associate at Institute of Space and Astronautical Science, JAXA

September, 2007 -

Assistant Professor at Institute of Space and Astronautical Science, JAXA

## **Awards**

December, 1999

AGU Outstanding Student Paper Award (1999 Fall Meeting, SPA Section)

July, 2008

American Geophysical Union Editor's Citation for Excellence in Refereeing  
(2007 Geophysical Research Letters)

July, 2009

American Geophysical Union Editor's Citation for Excellence in Refereeing  
(2008 Journal of Geophysical Research-Space Physics)

September, 2009

The 32th SGPSS Obayashi Award (126th SGPSS meeting)

### **List of Recent Publications**

#### **(as the first author)**

- Hasegawa, H., B. U. Ö. Sonnerup, and T. K. M. Nakamura, "Recovery of time evolution of Grad-Shafranov equilibria from single-spacecraft data: Benchmarking and application to a flux transfer event", *J. Geophys. Res.*, **115**, A11219, doi:10.1029/2010JA015679, 2010.
- Hasegawa, H., J. Wang, M. W. Dunlop, Z. Y. Pu, Q.-H. Zhang, B. Lavraud, M. G. G. T. Taylor, O. D. Constantinescu, J. Berchem, V. Angelopoulos, J. P. McFadden, H. U. Frey, M. Volwerk, E. V. Panov, and Y. V. Bogdanova, "Evidence for a flux transfer event generated by multiple X-line reconnection at the magnetopause", *Geophys. Res. Lett.*, **37**, L16101, doi:10.1029/2010GL044219, 2010.
- Hasegawa, H., A. Retinò, A. Vaivads, Y. Khotyaintsev, M. André, T. K. M. Nakamura, W.-L. Teh, B. U. Ö. Sonnerup, S. J. Schwartz, Y. Seki, M. Fujimoto, Y. Saito, H. Rème, and P. Canu, "Kelvin-Helmholtz waves at the Earth's magnetopause: Multi-scale development and associated reconnection", *J. Geophys. Res.*, **114**, A12207, doi:10.1029/2009JA014042, 2009.
- Hasegawa, H., J. P. McFadden, O. D. Constantinescu, Y. V. Bogdanova, J. Wang, M. W. Dunlop, V. Angelopoulos, H. U. Frey, T. Takada, B. Lavraud, Q.-H. Zhang, Z. Y. Pu, A. N. Fazakerley, E. V. Panov, M. Volwerk, C. Shen, and J. K. Shi, "Boundary layer plasma flows from high-latitude reconnection in the summer hemisphere for northward IMF: THEMIS multi-point observations", *Geophys. Res. Lett.*, **36**, L15107, doi:10.1029/2009GL039410, 2009.
- Hasegawa, H., "Comment on "Evolution of Kelvin-Helmholtz activity on the dusk flank magnetopause" by Foullon et al.", *J. Geophys. Res.*, **114**, A03205, doi:10.1029/2008JA013887, 2009.
- Hasegawa, H., A. Retinò, A. Vaivads, Y. Khotyaintsev, R. Nakamura, T. Takada, Y. Miyashita, H. Rème, and E. A. Lucek, "Retreat and reformation of X-line during quasi-continuous tailward-of-the-cusp reconnection under northward IMF", *Geophys. Res. Lett.*, **35**, L10104, doi:10.1029/2008GL034767, 2008.
- Hasegawa, H., R. Nakamura, M. Fujimoto, V. A. Sergeev, E. A. Lucek, H. Rème, and Y. Khotyaintsev, "Reconstruction of a bipolar magnetic signature in an

earthward jet in the tail: Flux rope or 3D guide-field reconnection?”, *J. Geophys. Res.*, *112*, A11206, doi:10.1029/2007JA012492, 2007.

- Hasegawa, H., B. U. Ö. Sonnerup, M. Fujimoto, Y. Saito, and T. Mukai, “Recovery of streamlines in the flank low-latitude boundary layer”, *J. Geophys. Res.*, *112*, A04213, doi:10.1029/2006JA012101, 2007.

**(as a coauthor)**

- Owen, C. J., O. Amm, R. Bruno, J. de Keyser, M. Dunlop, J. Eastwood, A. N. Fazakerley, D. Fontaine, C. Forsyth, H. Hasegawa, P. Hellinger, D. Hercik, C. Jacquey, S. Milan, J. Raeder, D. G. Sibeck, S. Stverak, P. Travnicek, A. P. Walsh, J. Wild, “IMPALAS: Investigation of MagnetoPause Activity using Longitudinally-Aligned Satellites – a Mission Concept proposed for the ESA M3 2020/2022 Launch”, *Experimental Astronomy*, in press, 2012.
- Sibeck, D. G., V. Angelopoulos, D. A. Brain, G. T. Delory, J. P. Eastwood, W. M. Farrell, R. E. Grimm, J. S. Halekas, H. Hasegawa, P. Hellinger, et al., “ARTEMIS science objectives”, *Space Sci. Rev.*, in press, doi:10.1007/s11214-011-9777-9, 2012.
- Sonnerup, B. U. Ö., and H. Hasegawa, “Reconstruction of steady, three-dimensional, magneto-hydrostatic field and plasma structures in space: Theory and benchmarking”, *J. Geophys. Res.*, *116*, A09230, doi:10.1029/2011JA016675, 2011.
- Dunlop, M. W., Q.-H. Zhang, Y. V. Bogdanova, M. Lockwood, Z. Pu, H. Hasegawa, et al. (20 authors in total), “Extended magnetic reconnection across the dayside magnetopause”, *Phys. Rev. Lett.*, *107*, 025004, 2011.
- Dunlop, M. W., Q.-H. Zhang, Y. V. Bogdanova, K. J. Trattner, Z. Pu, H. Hasegawa, et al. (20 authors in total), “Magnetopause dynamics and reconnection across wide local time”, *Ann. Geophys.*, *29*, 1683-1697, 2011.
- Miyashita, Y., I. Shinohara, M. Fujimoto, H. Hasegawa, K. Hosokawa, T. Takada, and T. Hori, “A powerful tool for browsing quick-look data in solar-terrestrial physics: “Conjunction Event Finder””, *Earth Planets Space*, *63*(1), e1-e4, 2011.
- Nakamura, T. K. M., H. Hasegawa, I. Shinohara, and M. Fujimoto, “Evolution of an MHD-scale Kelvin-Helmholtz vortex accompanied by magnetic reconnection: Two-dimensional particle simulations”, *J. Geophys. Res.*, *116*, A03227, doi:10.1029/2010JA016046, 2011.
- Nishino, M. N., H. Hasegawa, M. Fujimoto, T. Mukai, Y. Saito, H. Rème, A. Retinò, R. Nakamura, and E. A. Lucek, “A case study of Kelvin-Helmholtz

vortices on both flanks of the Earth's magnetotail", *Planet. Space Sci.*, 59, 502-509, doi:10.1016/j.pss.2010.03.011, 2011.

- Volwerk, M., J. Berchem, Y. V. Bogdanova, O. D. Constantinescu, M. W. Dunlop, P. Escoubet, A. N. Fazakerley, H. Frey, H. Hasegawa, et al. (20 authors in total), "Interplanetary magnetic field rotations followed from L1 to the ground: The response of the Earth's magnetosphere as seen by multi-spacecraft and ground-based observations", *Ann. Geophys.*, 29, 1549-1569, 2011.
- Nakamura, T. K. M., H. Hasegawa, and I. Shinohara, "Kinetic effects on the Kelvin-Helmholtz instability in ion-to-magnetohydrodynamic scale transverse velocity shear layers: Particle simulations", *Phys. Plasmas*, 17, 042119, 2010.
- Saito, Y., S. Yokota, K. Asamura, T. Tanaka, M. N. Nishino, T. Yamamoto, Y. Terakawa, M. Fujimoto, H. Hasegawa, H. Hayakawa, et al. (29 authors in total), "In-flight performance and initial results of Plasma energy Angle and Composition Experiment (PACE) on SELENE (Kaguya)", *Space Sci. Rev.*, 154, 265-303, 2010.
- Sonnerup, B. U. Ö., and H. Hasegawa, "On slowly evolving Grad-Shafranov equilibria", *J. Geophys. Res.*, 115, A11218, doi:10.1029/2010JA015678, 2010.
- Suvorova, A. V., J.-H. Shue, A. V. Dmitriev, D. G. Sibeck, J. P. McFadden, H. Hasegawa, K. Ackerson, K. Jelinek, J. Šafránková, Z. Němeček, "Magnetopause expansions for quasi-radial interplanetary magnetic field: THEMIS and Geotail observations", *J. Geophys. Res.*, 115, A10216, doi:10.1029/2010JA015404, 2010.
- Eriksson, S., H. Hasegawa, W.-L. Teh, B. U. Ö. Sonnerup, J. P. McFadden, K.-H. Glassmeier, A. Roux, V. Angelopoulos, D. E. Larson, C. M. Cully, R. E. Ergun, and C. W. Carlson, "Magnetic island formation between large-scale flow vortices at an undulating post-noon magnetopause for northward IMF", *J. Geophys. Res.*, 114, A00C17, doi:10.1029/2008JA013505, 2009.
- Lavraud, B., J. E. Borovsky, V. Genot, S. J. Schwartz, J. Birn, A. N. Fazakerley, M. W. Dunlop, M. G. G. T. Taylor, H. Hasegawa, A. P. Rouillard, J. Berchem, Y. Bogdanova, D. Constantinescu, I. Dandouras, J. P. Eastwood, C. P. Escoubet, H. Frey, C. Jacquey, E. Panov, Z. Y. Pu, C. Shen, J. Shi, D. G. Sibeck, M. Volwerk, and J. Wild, "Tracing solar wind plasma entry into the magnetosphere using ion-to-electron temperature ratio", *Geophys. Res. Lett.*, 36, L18109, doi:10.1029/2009GL039442, 2009.
- Miyake, W., Y. Saito, M. Harada, M. Saito, H. Hasegawa, A. Ieda, S. Machida, T. Nagai, T. Nagatsuma, K. Seki, I. Shinohara, and T. Terasawa, Mercury Ion Analyzer (MIA) onboard Mercury Magnetospheric Orbiter: MMO, *Adv. Space*

*Res.*, 43, 1986-1992, 2009.

- Seki, Y., M. N. Nishino, M. Fujimoto, Y. Miyashita, K. Keika, H. Hasegawa, K. Okabe, Y. Kasaba, T. Terasawa, T. I. Yamamoto, I. Shinohara, Y. Saito, and T. Mukai, “Observations of loss-cone shaped back-streaming energetic protons upstream of the Earth’s bow shock”, *J. Geophys. Res.*, 114, A11106, doi:10.1029/2009JA014136, 2009.
- Kasahara, S., H. Hasegawa, K. Keika, Y. Miyashita, M. N. Nishino, T. Sotirelis, Y. Saito, and T. Mukai, “Escape of high energy oxygen ions through magnetopause reconnection under northward IMF”, *Ann. Geophys.*, 26, 3955-3966, 2008.
- Keiling, A., F. S. Mozer, H. Rème, I. Dandouras, E. Lucek, M. Fujimoto, H. Hasegawa, and G. D. Reeves, “Periodic traveling compression regions during quiet geomagnetic conditions and their association with ground Pi2”, *Ann. Geophys.*, 26, 3341-3354, 2008.
- Saito, Y., S. Yokota, K. Asamura, T. Tanaka, R. Akiba, M. Fujimoto, H. Hasegawa, H. Hayakawa, M. Hirahara, M. Hoshino, S. Machida, T. Mukai, T. Nagai, T. Nagatsuma, M. Nakamura, K. Oyama, E. Sagawa, S. Sasaki, K. Seki, and T. Terasawa, “Low energy charged particle measurement by MAP-PACE onboard SELENE”, *Earth Planets Space*, 60, 375-385, 2008.
- Sharma, A. S., R. Nakamura, A. Runov, E. E. Grigorenko, H. Hasegawa, M. Hoshino, P. Louarn, C. J. Owen, A. Petrukovich, J.-A. Sauvaud, V. S. Semenov, V. A. Sergeev, J. A. Slavin, B. U. Ö. Sonnerup, L. M. Zelenyi, G. Fruit, S. Haaland, H. Malova, and K. Snekvik, “Transient and localized processes in the magnetotail: a review”, *Ann. Geophys.*, 26, 955-1006, 2008.
- Sonnerup, B. U. Ö., W.-L. Teh, and H. Hasegawa, “Grad-Shafranov and MHD reconstructions”, in *Multi-spacecraft analysis methods revisited*, edited by G. Paschmann and P. W. Daly, ISSI SR-008, pp. 81-90, ESA Publications Division, 2008.
- Fuselier, S. A., S. M. Petrinec, K. J. Trattner, M. Fujimoto, and H. Hasegawa, “Simultaneous observations of fluctuating cusp aurora and low latitude magnetopause reconnection”, *J. Geophys. Res.*, 112, A11207, doi:10.1029/2007JA012252, 2007.
- Snekvik, K., S. Haaland, N. Østgaard, H. Hasegawa, R. Nakamura, T. Takada, L. Juusola, O. Amm, F. Pitout, H. Rème, B. Klecker, and E. A. Lucek, “Cluster observations of a field aligned current at the dawn flank of a bursty bulk flow”, *Ann. Geophys.*, 25, 1405-1415, 2007.