CURRICULUM VITAE

HIROHIKO MASUNAGA

ASSOCIATE PROFESSOR

Mailing address: Institute for Space-Earth Environmental Research,
Nagoya University
Furocho Chikusa-ku, Nagoya 464-8601,
Japan

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Education

Ph.D. University of Tokyo, Astrophysics 1999

M.Sc. University of Tokyo, Astrophysics 1996

B.Sc. University of Tokyo, Astrophysics 1994

Professional experience

10/2015-present: Associate Professor, Institute for Space-Earth Environmental Research, Nagoya University

07/2006-09/2015: Associate Professor, Hydrospheric Atmospheric Research Center, Nagoya University

05/2004-05/2006: Research Scientist II, Department of Atmospheric Science, Colorado State University

05/2002-04/2004: Postdoctoral Fellow, Department of Atmospheric Science, Colorado State University

10/1999-04/2002: NASDA Research Fellow, Earth Observation Research Center, National Space Development Agency (NASDA) of Japan (currently Japan Aerospace Exploration Agency)

04/1999-09/1999: Postdoctoral Fellow, Center for Climate System Research, University of Tokyo

04/1997-04/1999: Doctoral Student Fellow, Japan Society for the Promotion of Science

Research Interests

Satellite meteorology and climatology

Tropical convection and large-scale dynamics

Convectively-coupled equatorial waves and the Madden-Julian Oscillation

Tropical air-sea interactions

Development of satellite retrieval algorithms

Development of satellite data simulators and cloud model evaluation

Membership of academic societies

Meteorological Society of Japan
American Meteorological Society
American Geophysical Union

Academic recognition

The Award of the Meteorological Society of Japan, 2019

2022 Atmospheric Science Librarians International (ASLI) Choice (Science and Technology) Award for the book "Satellite Measurements of Clouds and Precipitation: Theoretical Basis"

Professional service

Editor, Journal of the Meteorological Society of Japan, Jul 2010-

Editor (with temporary contracts), Journal of the Meteorological Society of Japan special issues, 2009

Japan-France Frontiers of Science Symposium (JFFoS) planning group member (PGM), FY2010-12 (Co-chair for FY2011)

UK-Japan Frontiers of Science Symposium (UK-Japan FoS) planning group member (PGM), FY2016 (Co-chair)

Global Energy and Water Exchanges Project (GEWEX) Data and Analysis Panel (formerly Radiation Panel) (GDAP) Co-chair (2022-) (member since 2010)

Publication List (as of 26th January, 2024)

Hirohiko Masunaga
Institute for Space-Earth Environmental Research,
Nagoya Univeristy

I. Peer-reviewed papers

66. **Masunaga, H.**, 2023:
The edge intensification of eastern Pacific ITCZ convection
J. Climate, **36**, 3469-3480 doi:10.1175/JCLI-D-22-0382.1

65. Ito, M. and **H. Masunaga**, 2022:
Process-level assessment of the Iris effect over tropical oceans
Geophys. Res. Lett., **49**, e2022GL097997, doi:10.1029/2022GL097997

64. Hirose, M., S. Shige, T. Kubota, F. A. Furuzawa, H. Minda, and **H. Masunaga**, 2021:
Refinement of surface precipitation estimates for the Dual-frequency Precipitation Radar on the GPM Core Observatory using near-nadir measurements.
J. Meteor. Soc. Japan, **99**, 1231-1252, doi:10.2151/jmsj.2021-060

63. Sekaranom, A. B., E. Nurjani, S. B. Wibowo, and **H. Masunaga**, 2021:
Characterizing ice-scattering homogeneity in TRMM Microwave Imagers and its influence on ocean rainrate estimation bias of TRMM Precipitation Radar
Atmos., **12**, 1377 doi:10.3390/atmos12111377

62. Takahashi, H., M. Lebsock, Z. J. Luo, **H. Masunaga**, and C. Wang, 2021:
Detection and tracking of tropical convective storms based on globally precipitation measurements: Algorithm and Survey over the Tropics
J. Appl. Meteorol. Climatol., **60**, 403-421, doi:10.1175/JAMC-D-20-0171.1

61. **Masunaga, H.**, C. E. Holloway, H. Kanamori, S. Bony, and T. H. M. Stein, 2021:
Transient aggregation of convection: Observed behavior and underlying processes
J. Climate, **34**, 1685-1700, doi:10.1175/JCLI-D-19-0933.1

60. Jeyaratnam, J., Z. J. Luo, S. Giangrande, D. Wang, and **H. Masunaga**, 2021:
A satellite-based estiamte of convective vertical velocity and convective mass flux: Global survey and comparison with radar wind profiler observations
Geophys. Res. Lett., **48**, e2020GL090675, doi:10.1029/2020GL090675

59. **Masunaga, H.** and B. E. Mapes, 2020:
A mechanism for the maintenance of sharp tropical margins.
J. Atmos. Sci., **77**, 1181-1197, doi:10.1175/JAS-D-19-0154.1

58. **Masunaga, H.**, M. Schröder, F. A. Furuzawa, C. Kummerow, E. Rustemeier and U. Schneider, 2019:
Inter-product biases in global precipitation extremes.
Environ. Res. Lett., **14**, 125016, doi:10.1088/1748-9326/ab5da9

57. Sumi, Y. and **H. Masunaga**, 2019:
Vertical modes and effective stability of Quasi-2-day waves.
J. Atmos. Sci., **76**, 2005-2022, doi:10.1175/JAS-D-19-0092.1

56. Sekaranom, A. B. and **H. Masunaga**, 2019:
Origins of heavy precipitation biases in the TRMM PR and TMI products assessed with CloudSat and reanalysis data.
J. Appl. Meteor. Clim., **58**, 37-54, doi:10.1175/JAMC-D-18-0011.1

55. Kadoya, T. and **H. Masunaga**, 2018:
New observational metrics of convective self-aggregation: Methodology and a case study.
J. Meteor. Soc. Japan, **96**, 535-548, doi:10.2151/jmsj.2018-054

54. **Masunaga, H.** and S. Bony, 2018:
Radiative invigoration of tropical convection by preceding cirrus clouds.
J. Atmos. Sci., **75**, 1327-1342, doi:10.1175/JAS-D-17-0355.1

53. Mapes, B. E., E.-S. Chung, W. M. Hannah, **H. Masunaga**, A. J. Wimmers, and C. S. Velden, 2018:
The meandering margin of the meteorological moist Tropics.
Geophys. Res. Lett., **45**, 1177-1184, doi:10.1002/2017GL076440

52. Nuijens, L., K. Emanuel, **H. Masunaga**, and T. S. L'Ecuyer, 2017:
Implications of warm rain in shallow cumulus and congestus clouds for large-scale circulations.
Surv. Geophys., **38**, 1257-1282, doi:10.1007/s10712-017-9429-z

51. Sekaranom, A. B. and **H. Masunaga**, 2017:
Comparison of TRMM-derived rainfall products for general and extreme rains over the Maritime Continent.
J. Appl. Meteor. Clim., **56**, 1867-1881, doi:10.1175/JAMC-D-16-0272.1

50. Tapiador, F. J., A. Navarro, V. Levizzani, E. García-Ortega, G. J. Huffman, C. Kidd, P. A. Kucera, C. D. Kummerow, **H. Masunaga**, W. A. Petersen, R. Roca, J.-L. Sánchez, W.-K. Tao, and F. J. Turk, 2017:
Global precipitation measurements for validating climate models.
Atmos. Res., **197**, 1-20, doi:10.1016/j.atmosres.2017.06.021

49. Choi, Y.-S., WM. Kim, S.-W. Yeh, **H. Masunaga**, M.-J. Kwon, H.-S. Jo, and L. Huang, 2017:
Revisiting the iris effect of tropical cirrus clouds with TRMM and A-Train satellite data.
J. Geophys. Res. Atmos., **112**, 5917-5931, doi:10.1002/2016JD025827

48. Holloway, C. E., A. A. Wing, S. Bony, C. Muller, **H. Masunaga**, T. S. L'Ecuyer, D. D. Turner, and P. Zuidema, 2017:
Observing convective aggregation.
Surv. Geophys., 1199-1236, doi:10.1007/s10712-017-9419-1

47. **Masunaga, H.** and Y. Sumi, 2017:
A toy model of tropical convection with a moisture storage closure.
J. Adv. Model. Earth Syst., **9**, doi:10.1002/2016MS000855

46. Yanase, A., K. Yasunaga, and **H. Masunaga**, 2017:
Relationship between the direction of diurnal rainfall migration and the ambient wind over the southern Sumatra island.
Earth Space Sci., **4**, doi:10.1002/2016EA000181

45. **Masunaga, H.**, and Z. J. Luo, 2016:
Convective and large-scale mass flux profiles over tropical oceans determined from synergistic analysis of a suite of satellite observations.
J. Geophys. Res. Atmos., **121**, doi:10.1002/2016JD024753

44. Sumi, Y. and **H. Masunaga**, 2016:
A Moist Static Energy Budget Analysis of Quasi 2-day Wave Using Satelite and Reanalsyis Data.
J. Atmos. Sci., **73**, 743-759, doi:10.1175/JAS-D-15-0098.1

43. **Masunaga, H.**, 2015:
Assessment of a Satellite-based Atmospheric Budget Analysis Method with CINDY2011/DYNAMO/AMIE and TOGA COARE Sounding Array Data.
J. Meteor. Soc. Japan, **93A** (Special issue on the Coordinated International Field Campaign on the Madden-Julian Oscillation), 21-40, doi:10.2151/jmsj.2015-032

42. Norouzi,H., M. Temimi, C. Prigent, J. Turk, R. Khanbilvardi, Y. Tian, F. A. Furuzawa, and **H. Masunaga**, 2015:
Assessment of the consistency among global microwave land surface emissivity products.
Atmos. Meas. Tech., **8**, 1197-1205, doi:10.5194/amt-8-1197-2015

41. Toyoshima, K., **H. Masunaga**, and F. A. Furuzawa, 2015:
Early evaluation of Ku- and Ka-band sensitivities for the Global Precipitation Measurement (GPM) Dual-frequency Precipitation Radar (DPR).
SOLA, **11**, 14-17, doi:10.2151/sola.2015-004

40. **Masunaga, H.**, 2014:
Free-tropospheric moisture convergence and tropical convective regimes.
Geophys. Res. Lett., **41**, 8611-8618, doi:10.1002/2014GL062301

39. **Masunaga, H.** and T. S. L'Ecuyer, 2014:
A mechanism of tropical convection inferred from observed variability in the moist static energy budget.
J. Atmos. Sci., **71**, 3747-3766, doi:10.1175/JAS-D-14-0015.1

38. Kanemaru, K. and **H. Masunaga**, 2014:
The potential roles of background surface wind in the SST variability associated with intraseasonal oscillations.
J. Climate, **27**, 7053-7068, doi:10.1175/JCLI-D-13-00774.1

37. Tian, Y., C. Peters-Lidard , K. W. Harrison, C. Prigent, H. Norouzi, F. Aires, S.-A. Boukabara, F. A. Furuzawa, and **H. Masunaga**, 2014:
Quantifying uncertainties in land surface microwave emissivity retrievals.
IEEE Trans. Geosci. Remote Sens., **52**, 829-840, doi:10.1109/TGRS.2013.2244214

36. Li, X., W.-K. Tao, **H. Masunaga**, G. Gu, and X. Zeng, 2013:
Aerosol effects on cumulus congestus population over the tropical Pacific: A cloud-resolving modeling study.
J. Meteor. Soc. Japan, **91**, 817-833, doi: 10.2151/jmsj.2013-607

35. **Masunaga, H.**, 2013:
A satellite study of tropical moist convection and environmental variability: A moisture and thermal budget analysis.
J. Atmos. Sci., **70**, 2443-2466, doi:10.1175/JAS-D-12-0273.1

34. Kanemaru, K. and **H. Masunaga**, 2013:
A satellite study of the relationship between sea surface temperature and column water vapor

over tropical and subtropical oceans.
J. Climate, **26**, 4204-4218, doi:10.1175/JCLI-D-12-00307.1

33. Ferraro, R., C. Peters-Lidard , C. Hernandez, F. J. Turk, F. Aires, C. Prigent, X. Lin, S.-A. Boukabara, F. Furuzawa, K. Gopalan, K. Harrison, F. Karbou, L. Li, C. Li, **H. Masunaga**, L. Moy, S. Ringerud, G. Skofronik-Jackson, Y. Tian, and N.-Y. Wang, 2013:
An evaluation of microwave land surface emissivities over the continental United States to benefit GPM-era precipitation algorithms.
IEEE Trans. Geosci. Remote Sens., **51**, 378-398, doi:10.1109/TGRS.2012.2199121

32. Ichikawa, H., **H. Masunaga**, Y. Tsushima, and H. Kanzawa, 2012:
Analysis of cloud properties associated with tropical convection in climate models and satellite data.
J. Meteor. Soc. Japan, **90**, 629-646, doi:10.2151/jmsj.2012-504

31. **Masunaga, H.**, 2012:
Short-term versus climatological relationship between precipitation and tropospheric humidity.
J. Climate, **25**, 7983-7990, doi:10.1175/JCLI-D-12-00037.1

30. Ichikawa, H., **H. Masunaga,** Y. Tsushima, and H. Kanzawa, 2012:
Reproducibility by climate models of cloud radiative forcing associated with tropical convection.
J. Climate, **25**, 1247-1262, doi:10.1175/JCLI-D-11-00114.1

29. **Masunaga, H.**, 2012:
A satellite study of the atmospheric forcing and response to moist convection over tropical and subtropical oceans.
J. Atmos. Sci., **69**, 150-167, doi:10.1175/JAS-D-11-016.1

28. **Masunaga, H.** and T. S. L'Ecuyer, 2011:
Equatorial asymmetry of the east Pacific ITCZ: Observational constraints on the underlying processes.
J. Climate, **24**, 1784-1800, doi:10.1175/2010JCLI3854.1

27. **Masunaga, H.**, T. Matsui, W.-K. Tao, A. Y. Hou, C. D. Kummerow, T. Nakajima, P. Bauer, W. S. Olson, M. Sekiguchi, and T. Y. Nakajima, 2010:
Satellite Data Simulator Unit (SDSU): A multi-sensor, multi-spectral satellite simulator package.
Bull. Amer. Meteorol. Soc., **91**,1625-1632, doi:10.1175/2010BAMS2809.1

26. Li, X., W.-K. Tao, T. Matsui, C. Liu, and **H. Masunaga**, 2010:
Improving a spectral bin microphysical scheme using TRMM satellite observations
Quart. J. Roy. Meteor. Soc., **136**, 382-399, doi:10.1002/qj.569

25. **Masunaga, H.** and T. S. L'Ecuyer, 2010:
The southeast Pacific warm band and double ITCZ.
J. Climate, **23**, 1189-1208, doi:10.1175/2009JCLI3124.1

24. Liu, P., M. Satoh, B. Wang, H. Fudeyasu, T. Nasuno, T. Li, H. Miura, H. Taniguchi, **H. Masunaga,** X. Fu, and H. Annamalai, 2009:
An MJO simulated by the NICAM at 14-km and 7-km resolutions.
Mon. Wea. Rev., **137**, 3254-3268, doi:10.1175/2009MWR2965.1

23. Ichikawa, H., **H. Masunaga**, and H. Kanzawa, 2009:
Evaluation of Precipitation and Upper-level Clouds Associated with Large-scale Circulation over the Tropical Pacific Ocean in the Coupled AOGCMs.
J. Meteor. Soc. Japan., **87**, 771-789, doi:10.2151/jmsj.87.771

22. Matsui, T., X. Zeng, W.-K. Tao, **H. Masunaga**, W. S. Olson, and S. Lang, 2009:
Evaluation of Long-term Cloud-resolving Model Simulations Using Satellite Radiance Observations and Multi-frequency Satellite Simulators.
J. Atmos. Oceanic Tech., **26**, 1261-1274, doi:10.1175/2008JTECHA1168.1

21. **Masunaga, H.**, 2009:
A 9-season TRMM observation of the Austral Summer MJO and Low-frequency Equatorial Waves.
J. Meteor. Soc. Japan, **87A,** Special issue on Precipitation Measurements from Space, 295-315, doi:10.2151/jmsj.87A.295

20. Nakajima, T. Y., **H. Masunaga**, and T. Nakajima, 2009:
Near-global Scale Retrievals of the Cloud Optical and Microphysical Properties from the Midori-II GLI and AMSR Data.
J. Remote Sens. Soc. Japan., **29**, 29-30.

19. **Masunaga, H.**, M. Satoh, and H. Miura, 2008:
A joint satellite and global cloud-resolving model analysis of a Madden-Julian Oscillation event: Model diagnosis,
J. Geophys. Res., **113**, D17210, doi:10.1029/2008JD009986

18. **Masunaga, H.**, 2007:
Seasonality and Regionality of the Madden-Julian Oscillation, Kelvin Wave, and equatorial

Rossby Wave.
J. Atmos. Sci., **64**, 4400-4416, doi:10.1175/2007JAS2179.1

17. **Masunaga, H.**, T. S. L'Ecuyer, and C. D. Kummerow , 2006:
The Madden-Julian Oscillation Recorded in Early Observations from the Tropical Rainfall Measuring Mission (TRMM).
J. Atmos. Sci., **63**, 2777-2794, doi:10.1175/JAS3783.1

16. Matsui, T., **H. Masunaga**, R. A. Pielke Sr., S. M. Kreidenweis, W.-K. Tao, M. Chin, and Y. J. Kaufman, 2006:
Satellite-based Assessment of Marine Low Cloud Variability Associated with Aerosol, Atmospheric Stability, and the Diurnal Cycles.
J. Geophys. Res., 33, L16805, doi:10.1029/2005JD006097.

15. **Masunaga, H.**, and C. D. Kummerow , 2006:
Observations of Tropical Precipitating Clouds Ranging from Shallow to Deep Convective Systems.
Geophys. Res. Lett., **33**, L16805, doi:10.1029/2006GL026547

14. L'Ecuyer, T. S., **H. Masunaga**, and C. D. Kummerow, 2006:
Variability in the Characteristics of Precipitation Systems in the Tropical Pacific. Part II. Implications for Atmospheric Heating.
J. Climate, **19**, 1388-1406, doi:10.1175/JCLI3698.1

13. Kummerow, C. D., W. Berg, J. Thomas-Stahle, and **H. Masunaga**, 2006:
Quantifying Global Uncertainties in a Simple Microwave Rainfall Algorithm.
J. Atmos. Oceanic Tech., **23**, 23-37, doi:10.1175/JTECH1827.1

12. Kurokawa, J., H. Akiyoshi, T. Nagashima, **H. Masunaga**, T. Nakajima, M. Takahashi, and H. Nakane, 2005:
Effects of Atmospheric Sphericity on Stratospheric Chemistry and Dynamics over Antarctica.
J. Geophys. Res., **110**, D21305, doi:10.1029/2005JD005798

11. **Masunaga, H.** and C. D. Kummerow, 2005:
Combined Radar and Radiometer Analysis of Precipitation Profiles for a Parametric Algorithm.
J. Atmos. Oceanic Tech., **22**, 909-929, doi:10.1175/JTECH1751.1

10. **Masunaga, H.**, T. S. L'Ecuyer, and C. D. Kummerow, 2005:
Variability in the Characteristics of Precipitation Systems in the Tropical Pacific. Part I. Spatial Structure.

J. Climate, **18**, 823-840, doi:10.1175/JCLI-3304.1

9. Matsui, T., **H. Masunaga**, R. Pielke Sr., and W.-K. Tao, 2004:
Impact of Aerosols and Atmospheric Thermodynamics on Cloud properties within the Climate System.
Geophys. Res. Let., **31**, L06109, doi:10.1029/2003GL019287

8. **Masunaga, H.**, T. Y. Nakajima, T. Nakajima, M. Kachi, and K. Suzuki, 2002:
Physical Properties of Maritime Low Clouds as Retrieved by Combined Use of TRMM Microwave Imager and Visible/Infrared Scanner. 2. Climatology of Warm Clouds and Rain.
J. Geophys. Res., **107**, NO.D19, 4367, doi:10.1029/2001JD001269

7. **Masunaga, H.**, T. Iguchi, R. Oki, and M. Kachi, 2002:
Comparison of Rainfall Products Derived from TRMM Microwave Imager and Precipitation Radar.
J. Appl. Meteor. **41**, 849-862, doi:10.1175/1520-0450(2002)041<0849:CORPDF>2.0.CO;2

6. **Masunaga, H.**, T. Y. Nakajima, T. Nakajima, M. Kachi, R. Oki, and S. Kuroda, 2002:
Physical Properties of Maritime Low Clouds as Retrieved by Combined Use of TRMM Microwave Imager and Visible/Infrared Scanner. Algorithm.
J. Geophys. Res., **107**, NO.D10, doi:10.1029/2001JD000734

5. **Masunaga, H.** and T. Nakajima, 2001:
The Effective Cloud Fraction of Broken Clouds Obtained by Multi-stream Radiative Transfer. I. Longwave Radiation.
J. Atmos. Sci., **58**, 2455-2467, doi:10.1175/1520-0469(2001)058<2455:TECFOB>2.0.CO;2

4. **Masunaga, H.** and Inutsuka, S. , 2000:
Infall Signifatures in Molecular Line Spectra of Protostellar Envelopes.
Astrophysical Journal, **536**, 406-415, doi:10.1086/308901

3. **Masunaga, H.** and Inutsuka, S., 2000:
A Radiation Hydrodynamic Model For Protostellar Collapse II. The Second Collapse and the Birth of a Protostar.
Astrophysical Journal, **531**, 350-365, doi:10.1086/308439

2. **Masunaga, H.** and Inutsuka, S. , 1999:
Does "$\tau \sim 1$" Terminate the Isothermal Evolution of Collapsing Clouds?
Astrophysical Journal, **510**, 822-827, doi:10.1086/306608

1. **Masunaga, H.**, Miyama, S.M., and Inutsuka, S. , 1998:

A Radiation Hydrodynamic Model for Protostellar Collapse I. The First Collapse.
Astrophysical Journal, **495**, 346-369, doi:10.1086/305281

II. Dissertations

A Radiation Hydrodynamical Model for Protostar Formation.
Ph.D. dissertation, University of Tokyo, pp.166, 1999

Non-grey Radiation Hydrodynamics Applied to Star Formation.
Master's thesis, University of Tokyo, pp.40, 1996

III. Books

1. **H. MASUNAGA**, 2022:
Satellite Measurements of Clouds and Precipitation: Theoretical Basis
Springer Remote Sensing/Photogrammetry. Springer, Singapore, pp. 297
eBook ISBN: 978-981-19-2243-5 (Hardcover ISBN: 978-981-19-2242-8)

IV. Book chapters

3. ANDERSON, T. L. (RAPPORTEUR), A. ACKERMAN, D. L. HARTMANN, G. A. ISAAC, S. KINNE, **H. MASUNAGA**, J. R. NORRIS, U. PÖSCHL, K. S. SCHMIDT, A. SLINGO, AND Y. N. TAKAYABU , 2009:
Temporal and Spatial Variability of Clouds and Related Aerosols
in *Clouds in the Perturbed Climate System: Their Relationship to Energy Balance, Atmospheric Dynamics, and Precipitation*,
Ed. by Heintzenberg, J., and R. J. Charlson
Strüngmann Forum Report, **2**, Cambridge, MA: The MIT Press, 127-147.

2. TAKAYABU, Y. N., AND **H. MASUNAGA**, 2009:
Clouds and Precipitation: Extreme Rainfall and Rain from Shallow Clouds
in *Clouds in the Perturbed Climate System: Their Relationship to Energy Balance, Atmospheric Dynamics, and Precipitation*,
Ed. by Heintzenberg, J., and R. J. Charlson
Strüngmann Forum Report, **2**, Cambridge, MA: The MIT Press, 107-125.

1. KUMMEROW, C., **H. MASUNAGA**, AND P. BAUER, 2007:
A Next-generation Microwave Rainfall Retrieval Algorithms for use by TRMM and GPM,
in *Measuring Precipitation from Space: EURAINSAT and the Future*
Ed. by V. Levizzani, P. Bauer, and J. Turk, Springer, 235-252.

V. Invited talks

16. **H. Masunaga**, and M. Ito:
Understanding the physical processes governing the iris effect: Precipitation efficiency, upper-tropospheric stability, and possible roles of shallow convection
3rd Pan-GASS Meeting Understanding and Modeling Atmospheric Processes, Monterey, CA, USA, July 2022

15. **H. Masunaga**, R. Oki, M. Yamaji, and K. Yamamoto:
JAXA-NASA collaborations toward a better understanding of the global water and energy cycle: From TRMM and GPM to ACCP
JpGU-AGU Joint Meeting 2020, Online, May 2020

14. **Masunaga, H.**:
The fundamental time scales intrinsic of convectively coupled equatorial waves
CLICCS Workshop, Bad Segeberg, Germany, Sep 2019.

13. **Masunaga, H.** and B. Mapes:
A Mechanism for the Maintenance of Sharp Tropical Margins
in *"Large-scale moisture and organized cloud systems", Japan Geoscience Union Meeting 2019*, Chiba, Japan, May 2019.

12. **Masunaga, H.**:
Radiative regulation of tropical convection as implied from satellite observations
Future of Cumulus Parametrization Workshop, Delft, Netherlands, Jul 2017.

11. **Masunaga, H.** and Z. J. Luo:
Large-scale and Convective-scale Updraft Profiles from Satellite Observations
in *"Tropical and Midlatitude Convective Systems and Their Roles in Weather and Climate", American Geophysical Union Fall Meeting*, San Francisco, CA, USA, Dec 2015.

10. **Masunaga, H.**
Free-tropospheric Moisture Convergence and Tropical Convective Regimes
The Climate Symposium 2014, Darmstadt, Germany, Oct 2014.

9. **Masunaga, H.**
Satellite Data Simulators and Their Applications to Cloud Model Evaluation
The 8th Workshop on Satellite Data Application for Global Environmental Monitoring, Seoul, Korea, Oct 2014.

8. **Masunaga, H.**
Microwave Precipitation Measurements from Space: Heritage from TRMM and future with

GPM
The 8th Workshop on Satellite Data Application for Global Environmental Monitoring, Seoul, Korea, Oct 2014.

7. **Masunaga, H.**
Satellite Observations of Large-scale Vertical Motion over the Indian Ocean
Asia Oceania Geosciences Society 2014 Conference, Sapporo, Japan, Jul. 2014

6. **Masunaga, H,**
The Evolution of Tropical Convective Systems Inferred from Satellite Measurements of Convective Updraft and Surrounding Downdraft
Asia Oceania Geosciences Society 2014 Conference, Sapporo, Japan, Jul. 2014

5. **Masunaga**, **H.** and T. S. L'Ecuyer
Thermal and moisture budget of tropical moist convection analyzed with multi-satellite observations
Gordon Research Conference: Radiation & Climate, New London, NH, USA, Jul. 2013

4. **Masunaga**, **H.**, M. Satoh, and H. Miura
An Application of TRMM and CloudSat Observations to Global Model Diagnosis.
in "Innovative Applications of Satellite and Ground Observations in Evaluating General Circulation Models", American Geophysical Union Fall Meeting, San Francisco, CA, USA, Dec. 2008

3. **Masunaga**, **H.**, M. Satoh, and H. Miura
An Application of TRMM and CloudSat Observations to Global Model Diagnosis.
Third International Workshop on High-Resolution Cloud Modeling - Tropical Cyclones and Climate, Honolulu, Hawaii, USA, Dec. 2008

2. **MASUNAGA, H.**,
The Meteorological Society of Japan 125th Anniversary Int'l Symposium "Toward Next Generation of Atmospheric Sciences"
"*Prospective Meteorological Studies Using Next-Generation Earth-Observing Satellites",* Tokyo, Japan, May 2008

1. **MASUNAGA, H.** , AND C. KUMMEROW
Improvement of the GPROF
International Workshop on Precipitation Retrieval Algorithms Using Satellite Microwave Radiometer, Radar, and IR Data, Tokyo, Japan, Mar. 2005

VI. Conference and seminar presentations (include all oral presentations given as the lead

author after 2000 except where denoted by (P) for posters. Japanese domestic conferences are not included.)

55. **MASUNAGA, H.** AND H. TAKAHASHI:
The energetics in the Lagrangian evolution of tropical convective systems
The 2023 joint CFMIP-GASS Meeting on Cloud, Precipitation, Circulation & Climate Sensitivity, Paris, France, Jul. 2023

54. **MASUNAGA, H.** AND H. TAKAHASHI:
The energetics in the Lagrangian evolution of tropical convective systems as diagnosed from satellite precipitation and radiation measurements
ICCP-GSRA Workshop 2023, jointly with 2nd EarthCARE Modeling Workshop, Izu, Shizuoka, Japan, Mar. 2023

53. **MASUNAGA, H.** AND M. ITO:
Process-level assessment of the iris effect over tropical oceans
AGU Fall Meeting, Chicago, IL, USA, Dec. 2022

52. **MASUNAGA, H.** AND M. ITO:
Observational assessment of radiative-convective feedbacks in the tropics
ISSI Workshop: Challenges in Understanding the Global Water Energy Cycle and its Changes in Response to Greenhouse Gas Emissions, Bern, Switzerland, Sep. 2022

51. **MASUNAGA, H.**, F. A. FURUZAWA, M. HIROSE, AND H. MINDA:
Non-uniform Local Time Coverage of Polar-orbiting Passive Microwave Observations in Global Precipitation Datasets
IPWG10/IWSSM6 Meeting, hybrid format (online participation), Jun. 2022

50. M. ITO AND **MASUNAGA, H.** :
Process-level assessment of the iris effect over tropical oceans
JpGU Meeting, Makuhari, Chiba, Japan, May 2022

49. **MASUNAGA, H.**:
Cloud-radiation interactions in the real atmosphere: A-Train, EarthCARE, and beyond
EarthCARE Modeling Workshop, Online, Feb. 2022

48. **MASUNAGA, H.**:
The edge intensification of ITCZ convection
AOS Colloquium Series, University of Wisconsin Madison, Online, Oct. 2021

47. **MASUNAGA, H.**:

The edge intensification of ITCZ convection
AGU Fall Meeting 2020, Online, Dec. 2020

46. **MASUNAGA, H.,** C. HOLLWAY, H. KANAMORI, S. BONY, T. H. M. STEIN:
Transient aggregation of convection: Observed behavior and underlying processes (**P**)
JpGU-AGU Joint Meeting 2020, online, May 2020

45. **MASUNAGA, H.,** C. HOLLWAY, H. KANAMORI, S. BONY, T. H. M. STEIN:
Transient aggregation of convection: Observed behavior and underlying processes
AGU Fall Meeting 2019, San Francisco, Dec. 2019

44. **MASUNAGA, H.** AND B. E. MAPES:
A Mechanism for the Maintenance of Sharp Tropical Margins
8th International EarthCARE Science Workshop, Fukuoka, Japan, Nov. 2019

43. **MASUNAGA, H.** AND B. E. MAPES:
A Mechanism for the Maintenance of Sharp Tropical Margins (**P**)
22nd Conference on Atmospheric and Oceanic Fluid Dynamics, Portland Maine, USA, Jun. 2019

42. **MASUNAGA, H.** AND B. E. MAPES:
A Mechanism for the Maintenance of Sharp Tropical Margins (**P**)
American Geophysical Union Fall Meeting, Washington DC, USA, Dec. 2018

41. **MASUNAGA, H.**:
Roles of Convection in the Maintenance of Tropical Margins
2018 UTCC PROES Workshop, Paris, France, Oct. 2018

40. **MASUNAGA, H.** :
A Mechanism for the Maintenance of Sharp Tropical Margins
Séminaire, Département de Géosciences - École normale supérieure, Paris, France, Oct. 2018

39. **MASUNAGA, H.** AND S. BONY:
Radiative Invigoration of Tropical Convection by Preceding Cirrus Clouds
33rd Conference on Hurricanes and Tropical Meteorology, Ponte Vedra Beach, FL, USA, Apr. 2018

38. **MASUNAGA, H.** AND S. BONY:
Radiative Regulation of Tropical Convection by Preceding Cirrus Clouds (**P**)
American Geophysical Union Fall Meeting, New Orleans, LA, USA, Dec. 2017

37. **MASUNAGA, H.**:
Radiative Regulation of Tropical Convection by Preceding Cirrus Clouds
ATS/CIRA Colloquium, Colorado State University, Fort Collins, CO, USA, Oct. 2017

36. **MASUNAGA, H.**:
Radiative Regulation of Tropical Convection by Preceding Cirrus Clouds
LMD Seminar, Université de Pierre et Marie Curie, Paris, France, Sep. 2017

35. **MASUNAGA, H.**:
A simple model of tropical convection with a moisture storage closure
Meteorology Departmental Seminar, University of Reading, Reading, UK, May 2017

34. **MASUNAGA, H.** AND Y.SUMI:
The moisture and MSE budget of developing tropical convection: Vertical modes and free-tropospheric moisture convergence
American Geophysical Union Fall Meeting, San Francisco, CA, USA, Dec. 2016

33. **MASUNAGA, H.**:
Strategy to exploit satellite observations for evaluating large-scale and convective-scale updraft profiles
Seminar at Atmosphere and Ocean Research Institute, University of Tokyo, Kashiwa, Chiba, Japan, Nov. 2016

32. **MASUNAGA, H.** AND Z. J. LUO:
Large-scale and Convective-scale Mass Fluxes Determined from a Combined Analysis of Satellite Observations
32nd Conference on Hurricanes and Tropical Meteorology, San Juan, PR, USA, Apr. 2016

31. **MASUNAGA, H.**:
Pushing the limits of satellite observations for further understanding of tropical convective dynamics
ISSI Workshop on Shallow Clouds, Water Vapour and Climate Sensitivity, Bern, Switzerland, Feb. 2016

30. **MASUNAGA, H.**:
Large-scale and Convective-scale Updraft Profiles from a Suite of Satellite Observations
Seminar at Dept. of Atmospheric and Oceanic Sciences, University of Wisconsin-Madison, Madison, WI, USA, Oct. 2015

29. **MASUNAGA, H.**:
Large-scale and Convective-scale Updraft Profiles from a Suite of Satellite Observations

Seminar at Dept. of Earth & Atmospheric Sciences, City Colleage of New York, New York City, NY, USA, Oct. 2015

28. **MASUNAGA, H.**:
Free tropospheric moisture convergence and tropical convective regimes. (**P**)
American Geophysical Union Fall Meeting, San Francisco, CA, USA, Dec. 2014

27. **MASUNAGA, H.**:
A Mechanism of the Onset and Development of Tropical Convection Inferred from Satellite Observations of Large-scale Energy Budget. (**P**)
7th International Scientific Conference on the Global Water and Energy Cycle, Den Haag, Netherlands, Jul. 2014

26. **MASUNAGA, H.**, AND T. S. L'ECUYER, 2014:
A Mechanism of Tropical Convection Inferred from Observed Variability in the Moist Static Energy Budget.
31st Conference on Hurricanes and Tropical Meteorology, San Diego, CA, USA, Apr. 2014

25. **MASUNAGA, H.**, AND T. S. L'ECUYER, 2013:
Short-term Variability in the Moist Static Energy Budget inferred from Satellite Observations.
American Geophysical Union Fall Meeting, San Francisco, CA, USA, Dec. 2013

24. **MASUNAGA, H.**, 2012:
A Satellite study of tropical moist convection and environmental variability: A moisture and thermal budget analysis
American Geophysical Union Fall Meeting, San Francisco, CA, USA, Dec. 2012

23. **MASUNAGA, H.**, 2012:
A Satellite study of tropical moist convection and environmental variability: A moisture and thermal budget analysis
The 4th TRMM and GPM International Science Conference, Tokyo, Japan, Nov. 2012

22. **MASUNAGA, H.**, 2012:
Global observations of atmospheric variability on a convective time scale: Using LEO satellites like a GEO
Toward Global LES (5th International Workshop on Cloud-Resolving Global Modelling), Schloss Ringberg, Germany, Jun. 2012

21. **MASUNAGA, H.**, 2012:
Satellite Observed Atmospheric Variability over the Life Cycle of Tropical Convective

Systems
30th Conference on Hurricanes and Tropical Meteorology, Ponte Vedra Beach, FL, USA, Apr. 2012

20. **MASUNAGA, H.**, 2011:
A satellite study of convective development and moisture variability on hourly to daily time scales
American Geophysical Union (AGU) Fall meeting, San Francisco, CA, USA, Dec. 2011

19. **MASUNAGA, H.**, 2011:
A Satellite Study of the Atmospheric Forcing and Response to Moist Convection
International Union of Geodesy and Geophysics (IUGG) General Assembly, Melbourne, Australia, Jul. 2011

18. **MASUNAGA, H.**, 2011:
A Satellite Study of the Atmospheric Forcing and Response to Moist Convection
Dpt. of Atmospheric Science Colloquium, Colorado State University, Fort Collins, CO, Feb. 2011

17. **MASUNAGA, H.**, AND T. S. L'ECUYER, 2010:
The southeast Pacific warm band and double ITCZ
The 29th Conference on Hurricanes and Tropical Meteorology, Tucson, AZ, USA, May 2011

16. **MASUNAGA, H.**, 2009:
Satellite Data Simulator Unit version 2
*"Development and Applications of Satellite Simulators for Aerosol-Cloud-Precipitation Observation from Space", American Geophysical Union Fall Meetin*g, San Francisco, CA, USA, Dec. 2009

15. **MASUNAGA, H.**, 2009:
Origins of moisture development leading MJO convective burst
MOCA-09 (the IAMAS/IAPSO/IACS 2009 joint assembly), Montreal, Canada, Jul. 2009

14. **MASUNAGA, H.**, AND T. S. L'ECUYER, 2009:
On the development of the eastern Pacific double ITCZ.
"Satellite Observations of Air-sea Interaction", 89th American Meteorological Society Annual Meeting, Phoenix, AZ, USA, Jan. 2009

13. **MASUNAGA, H.**, 2008:
A Joint Satellite and Global CRM Analysis of the MJO.
JSPS-DFG Round Table on 'Climate System Research – Status and Perspective', Hamburg,

Germany, Jan. 2008

12. **MASUNAGA, H.,** M. SATOH, AND H. MIURA, 2007:
A Joint Satellite and Global Cloud-Resolving Model Analysis of the 2006/07 Madden-Julian Oscillation.
2007 American Geophysical Union Fall Meeting, San Francisco, CA, USA, Dec. 2007

11. **MASUNAGA, H.,** 2007:
TRMM observations of convective variability associated with the austral summer MJO, Kelvin wave, and equatorial Rossby wave.(**P**)
New Approaches to Meet the Challenge of the Madden-Julian Oscillation, Irvine, CA, USA, Nov. 2007

10. **MASUNAGA, H.,** 2007:
Satellite Data Analysis of the Madden-Julian Oscillation, Kelvin wave, and the Equatorial Rossby Wave.
International Union of Geodesy and Geophysics, Perugia, Italy, Jul. 2007

9. **MASUNAGA, H.**, C. KUMMEROW, AND T. L'ECUYER, 2007:
Tropical Rainfall Climatology analyzed from satellite measurements
European Geosciences Union General Assembly, Vienna, Austria, Apr. 2007

8. **MASUNAGA, H.**, AND C. KUMMEROW, 2005:
Combined Radar and Radiometer Analysis of Precipitation Profiles for a Parametric Algorithm.(**P**)
Precipitation Measurement Missions Science Team Meeting, #54, Monterey, California, Dec. 2005

7. **MASUNAGA, H.**, C. KUMMEROW, AND T. S. L'ECUYER, 2004:
TRMM Multi-sensor Analysis of Tropical Precipitation Systems.
The 2nd TRMM International Science Conference, #2.6, Nara, Japan, Sep. 2004

6. **MASUNAGA, H.**, AND C. KUMMEROW, 2004:
GPM Microwave rainfall Retrievals and Error Models.
International Radiation Symposium 2004, #F-P8, Busan, South Korea, Aug. 2004

5. **MASUNAGA, H.**, C. KUMMEROW, AND T. L'ECUYER, 2003:
Improvement of the A Priori Database for a Precipitation Algorithm in the GPM Era. (**P**)
3rd GPM Workshop, #RE-6, Noordweijk, Netherlands, Jun. 2003

4. **MASUNAGA, H.**, AND C. KUMMEROW, 2003:

A Rain Profile Analysis using TRMM PR and TMI Toward a Future Precipitation Algorithm. (**P**)
2003 83rd AMS Annual Meeting, #P5.7, Long Beach, California, Feb. 2003

3. **MASUNAGA, H.**, T. Y. NAKAJIMA, T. NAKAJIMA, M. KACHI, AND K. SUZUKI, 2002:
Physical Properties of Maritime Low Clouds as Retrieved by Combined Use of VIRS and TMI. (**P**)
TRMM International Science Conference, #6P-16, Honolulu, Hawaii, Jul. 2002

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Physical Properties of Maritime Low Clouds as Retrieved by Combined Use of TRMM/VIRS and TMI. (**P**)
11th Conference of Atmospheric Radiation, #JP.9A, Ogden, Utah, Jun. 2002

1. **MASUNAGA, H.,** 2002:
An Analytic Formulation of Climate Sensitivity. (**P**)
11th Conference of Atmospheric Radiation, #P2.19, Ogden, Utah, Jun. 2002