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Curriculum Vitae

Tomoro Yanase

Assistant Professor

Graduate School of Information Science, University of Hyogo

Address: 8-2-1 Gakuennishi-machi, Nishi-ku, Kobe 651-2197, Japan

TEL: +81-78-794-6179

E-mail: yanase [at] gsis.u-hyogo.ac.jp

Education

- April 2013–March 2017
  Faculty of Integrated Human Studies, Kyoto University
  Thesis title: The effect of buoyancy on the atmospheric turbulence near the surface: An experimental study of turbulent thermal convection (in Japanese)
  Thesis advisor: Prof. Satoshi Sakai
- April 2017–March 2019
  Division of Earth and Planetary Sciences,
  Graduate School of Science (Master's Course), Kyoto University
  Thesis title: Statistical Properties of Cumulus Ensembles in High-Resolution Radiative-Convective Equilibrium Simulations (in Japanese)
  Thesis advisor: Prof. Tetsuya Takemi
- April 2019–March 2022
  Division of Earth and Planetary Sciences,
  Graduate School of Science (Doctoral Course), Kyoto University
  Thesis title: Numerical study on the self-aggregation of moist convection in radiative-convective equilibrium
  Thesis advisor: Prof. Tetsuya Takemi
  Degree: Doctor of Science (Mar 2022, Kyoto University)

Career

- April 2019–March 2022:
  Junior Research Associate
  Computational Climate Science Research Team, RIKEN Center for Computational Science
- April 2022–September 2024:
  Special Postdoctoral Researcher
  Mathematical Climatology Laboratory, RIKEN Cluster for Pioneering Research
- October 2024–present:
  Assistant Professor

Graduate School of Information Science, University of Hyogo

- November 2024–present:
  Visiting Scientist
  Computational Climate Science Research Team, RIKEN Center for Computational Science

Awards

1. Master's Thesis Award, Graduate School of Science, Kyoto University
2. Best Presentation Award, DPRI Annual Meeting 2019, Kyoto University
3. Poster Prize in Mathematical Sciences, RIKEN Summer School 2019, RIKEN
4. Matsuno Award, MSJ Autumn Meeting 2020, The Meteorological Society of Japan
5. Best Presentation Award, DPRI Annual Meeting 2022, Kyoto University
6. Presentation Award, JSFM Annual Meeting 2022, The Japan Society of Fluid Mechanics
7. Yamamoto Award, 2023, The Meteorological Society of Japan

Grant

1. Japan Society for the Promotion of Science KAKENHI JP24K17128, Internal variability of tropical atmosphere driven by self-organization of clouds, Apr 2024 - Mar 2029

Fellowships

1. Junior Research Associate Program, RIKEN (FY2019–2021)
2. KU–DAAD Partnership Program (FY2020)
3. The fund of Graduate School of Science, Kyoto University (FY2021)
4. Special Postdoctoral Researchers Program, RIKEN (FY2022–present)

Professional Memberships

- American Geophysical Union
- Japan Geoscience Union
- Meteorological Society of Japan

Academic Activities

- Chair for Session “Cloud and convection, gravity waves” in the Workshop on Global Storm-Resolving Analysis Bridging Atmospheric and Cloud Dynamics
- Chair for Session " Radiative Convective Equilibrium, Convection" in NHM-WS2023
- Chair for Session "Tropical Atmosphere II" in MSJ Spring Meeting 2022
- Review for *Journal of the Meteorological Society of Japan* (1)
- Review for *Journal of Advances in Modeling Earth Systems* (1)
- Review for *Journal of Climate* (2)
- Review for *Scientific Online Letters on the Atmosphere* (3)

- Review for *Advances in Atmospheric Sciences* (2)
- Review for *Journal of Geophysical Research* (2)

Peer-reviewed papers

1. **Yanase, T.**, & Takemi, T. (2018).
   Diurnal variation of simulated cumulus convection in radiative-convective equilibrium.
   SOLA, **14**, 116–120. doi:10.2151/sola.2018-020 [Link]
2. **Yanase, T.**, Nishizawa, S., Miura, H., Takemi, T., & Tomita, H. (2020).
   New critical length for the onset of self-aggregation of moist convection.
   Geophysical Research Letters, **47**, e2020GL088763. doi:10.1029/2020GL088763. [Link]
3. **Yanase, T.**, Nishizawa, S., Miura, H., & Tomita, H. (2022).
   Characteristic form and distance in high-level hierarchical structure of self-aggregated clouds in radiative-convective equilibrium.
   Geophysical Research Letters, **49**, e2022GL100000. doi:10.1029/2022GL100000. [Link]
4. **Yanase, T.**, Nishizawa, S., Miura, H., Takemi, T., & Tomita, H. (2022).
   Low-level circulation and its coupling with free-tropospheric variability as a mechanism of spontaneous aggregation of moist convection.
   Journal of the Atmospheric Sciences, **79**(12), 3429-3451. doi:10.1175/JAS-D-21-0313.1. [Link]
5. Okazaki, M., Oishi, S., Awata, Y., **Yanase, T.**, & Takemi, T. (2023).
   An analytical representation of raindrop size distribution in a mixed convective and stratiform precipitating system as revealed by field observations.
   Atmospheric Science Letters, e1155. doi:10.1002/asl.1155. [Link]
6. [preprint, under review] **Yanase, T.**, Shima, S., Nishizawa, S., & Tomita, H. (2024).
   Nonlocally coupled moisture model for convective self-aggregation.
   arXiv preprint arXiv:2404.04146. doi:10.48550/arXiv.2404.04146.
7. [preprint, under review] Okazaki, M., Yamaguchi, K., **Yanase, T.**, & Nakakita, E. (2024).
   Raindrop Size Distribution Variability Associated with Size-dependent Advection in Convective Precipitation Systems. ESS Open Archive. doi: 10.22541/au.173264136.67113489/v1
8. [preprint, under review] Okazaki, M., Suzuki, K., **Yanase, T.**, Sato, Y., & Nakakita, E. (2024).
   Bimodal raindrop size distributions produced by cloud microphysical and dynamical processes.
   ESS Open Archive. doi: 10.22541/au.173264140.04728448/v1

Presentations in International Conferences & Workshops

19. **Tomoro Yanase**.
    Onset mechanism and spatial characteristics of high-level hierarchical structure of convective self-aggregation, Workshop on Global Storm-Resolving Analysis Bridging Atmospheric and Cloud Dynamics, Hakone, Jun, 2024.
18. **Tomoro Yanase**, Seiya Nishizawa, Hiroaki Miura, Hirofumi Tomita.

Characteristic horizontal structure of large-scale self-aggregation of clouds in radiative–convective equilibrium, The 6th International Workshop on Nonhydrostatic Models (NHM-WS 2023), Sapporo, Aug–Sep, 2023.

17. **Tomoro Yanase**, Seiya Nishizawa, Hiroaki Miura, Hirofumi Tomita.
Characteristic Horizontal Length and Form of Large-Scale Self-Aggregation of Clouds in Radiative-Convective Equilibrium, 28th IUGG General Assembly, Berlin, July, 2023.
16. Megumi Okazaki, Satoru Oishi, Yasuhiro Awata, **Tomoro Yanase**, Tetsuya Takemi.
Proposed Function for Raindrop Size Distribution in a Mixed Convective and Stratiform Precipitating System as Revealed by Field Observations. NTU-KU Joint Workshop on Severe Weather and Climate Impacts in East Asia, Taipei, Nov, 2022.
15. **Tomoro Yanase**, Seiya Nishizawa, Hiroaki Miura, Tetsuya Takemi, Hirofumi Tomita.
Numerical study on the self-aggregation of moist convection in radiative-convective equilibrium, 6th Asia Pacific Conference on Plasma Physics, Virtual, Oct, 2022. (***Invited***)
14. **Tomoro Yanase**, Seiya Nishizawa, Hiroaki Miura, Tetsuya Takemi, Hirofumi Tomita.
Low-level circulation and its coupling with free-tropospheric variability as a mechanism of spontaneous aggregation of moist convection, 2022 Model Hierarchies Workshop, Stanford University, California, USA, Aug 29–Sep 1, 2022.
13. Megumi Okazaki, Satoru Oishi, Yasuhiro Awata, **Tomoro Yanase**, Tetsuya Takemi.
Bimodal Raindrop Size Distributions From Observational Analysis With a New Formula, AOGS 19th Annual Meeting, Virtual, Aug, 2022.
12. **Tomoro Yanase**, Seiya Nishizawa, Hiroaki Miura, Tetsuya Takemi, Hirofumi Tomita.
A mechanism of convective self-aggregation: Coupling between low-level circulation and free-tropospheric variability, AOGS 19th Annual Meeting, Virtual, Aug, 2022. (***Invited***)
11. **Tomoro Yanase**, Seiya Nishizawa, Hiroaki Miura, Tetsuya Takemi, Hirofumi Tomita.
A mechanism of convective self-aggregation: Coupling between low-level circulation and free-tropospheric variability, JpGU Meeting 2022, Chiba, May, 2022.
10. **Tomoro Yanase**.
On the resolution and domain size dependence of the onset of convective self-aggregation and the roles of low-level circulation and free-tropospheric variability, Workshop on the self-aggregation of clouds under the radiative-convective equilibrium, Virtual, Mar, 2022.
9. **Tomoro Yanase**, Seiya Nishizawa, Hiroaki Miura, Tetsuya Takemi, Hirofumi Tomita.
New Critical Length for the Onset of Self-Aggregation of Moist Convection, The 4th R-CCS International Symposium, Virtual, Feb, 2022. (Poster)
8. **Tomoro Yanase**, Seiya Nishizawa, Hiroaki Miura, Tetsuya Takemi, Hirofumi Tomita.
New Critical Length for the Onset of Self-Aggregation of Moist Convection, The Fifth Convection-Permitting Modeling Workshop 2021, Virtual, Sep, 2021. (Poster)
7. **Tomoro Yanase**, Seiya Nishizawa, Hiroaki Miura, Tetsuya Takemi, Hirofumi Tomita.

New Critical Length for the Onset of Self-Aggregation of Moist Convection, AGU Fall Meeting 2020, Virtual, Dec, 2020.

6. Tamaki Suematsu, **Tomoro Yanase**, Hiroaki Miura, Masaki Satoh.
   A consecutive development of MJO events in the 2018-2019 winter season reproduced by a three-month SST-forced experiment with NICAM, AGU Fall Meeting 2020, Virtual, Dec, 2020.
5. **Tomoro Yanase**, Seiya Nishizawa, Hiroaki Miura, Tetsuya Takemi, Hirofumi Tomita.
   New Critical Length Scale for the Onset of Self-Aggregation of Moist Convection, JpGU - AGU Joint Meeting 2020, Virtual, Jul, 2020. (***Invited***)
4. Tamaki Suematsu, Chihiro Kodama, Hisashi Yashiro, **Tomoro Yanase**, Hiroaki Miura, Tomoki Miyakawa, Masaki Satoh. Dependence of the reproducibility of the MJO convection on differences in the surface flux conditions in NICAM, JpGU - AGU Joint Meeting 2020, Virtual, Jul, 2020.
3. **Tomoro Yanase**, Tetsuya Takemi.
   Statistical Properties of Cumulus Ensembles in High-Resolution Radiative-Convective Equilibrium Simulations, Wayne Schubert Symposium in AMS Annual Meeting 2020, Boston, Jan, 2020. (Poster)
2. **Tomoro Yanase**, Tetsuya Takemi.
   Statistical Properties of Cumulus Ensembles in High-Resolution Radiative-Convective Equilibrium Simulations, JpGU Meeting 2019, Chiba, May, 2019.
1. **Tomoro Yanase**, Tetsuya Takemi.
   Diurnal Variation of Simulated Cumulus Convection in Radiative-Convective Equilibrium, National Taiwan University–Kyoto University workshop on tropical meteorology and field-site visit and survey at Xitou, NTU Experiment Forest, Taipei, December 2018. (Poster)