

Kenta Kurosawa, Ph.D.

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Education

Sep. 2019 – Sep. 2023	Ph.D. Atmospheric and Oceanic Science , University of Maryland, College Park, MD, USA. Thesis title: <i>Bridging Gaussian and non-Gaussian Data Assimilation for High-Dimensional Geophysical Models</i> .
Apr. 2016 – Mar. 2018	M.Eng. Civil Engineering , Kobe University, Japan. Thesis title: <i>Development of an estuarine reanalysis-forecasting system with 3DVAR assimilation for the Seto Inland Sea</i> .
Apr. 2012 – Mar. 2016	B.Eng. Civil Engineering , Kobe University, Japan. Thesis title: <i>Development of a weather routing system optimized for ship navigation based on oceanic and atmospheric datasets coupled with graph theory</i> .

Research Interests

Data Assimilation, Numerical Weather Prediction, Numerical Simulations, Control Theory, Data-driven Forecasting





Professional Experience

Jan. 2024 –	Postdoctoral Researcher , Center for Environmental Remote Sensing, Chiba University, Chiba, Japan.
Oct. 2023 – Dec. 2023	Postdoctoral Researcher , Department of Atmospheric and Oceanic Science, University of Maryland, College Park, MD, USA.
Sep. 2019 – Sep. 2023	Research Assistant , Department of Atmospheric and Oceanic Science, University of Maryland, College Park, MD, USA.
Apr. 2018 – Aug. 2019	Technical Staff , Data Assimilation Research Team, RIKEN, Kobe, Japan.
Oct. 2016 – Mar. 2018	Research Assistant , Data Assimilation Research Team, RIKEN, Kobe, Japan.






Research Publications

Refereed journal publications

- 1 **K. Kurosawa**, A. Okazaki, F. Kawasaki, and S. Kotsuki, “Ensemble-based model predictive control using data assimilation techniques,” *Nonlin. Processes Geophys.*, vol. 2025, pp. 1–33, 2025. 🌐 DOI: 10.5194/egusphere-2025-595.
- 2 **K. Kurosawa** and J. Poterjoy, “Augmented flow-dependent perturbations to mitigate sampling errors: Experiments for a regional application of the noaa unified forecast system,” *Weather and Forecasting*, 2025. 🌐 DOI: 10.1175/WAF-D-24-0147.1.
- 3 **K. Kurosawa**, S. Kotsuki, and T. Miyoshi, “Comparative study of strongly and weakly coupled data assimilation with a global land-atmosphere coupled model,” *Nonlin. Processes Geophys.*, vol. 30, no. 4, pp. 457–479, 2023. 🌐 DOI: 10.5194/npg-30-457-2023.
- 4 **K. Kurosawa** and J. Poterjoy, “A statistical hypothesis testing strategy for adaptively blending particle filters and ensemble Kalman filters for data assimilation,” *Mon. Wea. Rev.*, vol. 151, no. 1, pp. 105–125, 2023. 🌐 DOI: 10.1175/MWR-D-22-0108.1.

- 5 **K. Kurosawa** and J. Poterjoy, “Data assimilation challenges posed by nonlinear operators: A comparative study of ensemble and variational filters and smoothers,” *Mon. Wea. Rev.*, vol. 149, no. 7, pp. 2369–2389, 2021.  DOI: 10.1175/MWR-D-20-0368.1.
- 6 **K. Kurosawa**, Y. Uchiyama, and T. Kosako, “Development of a numerical marine weather routing system for coastal and marginal seas using regional oceanic and atmospheric simulations,” *Ocean Engineering*, vol. 195, p. 106706, 2020, ISSN: 0029-8018.  DOI: 10.1016/j.oceaneng.2019.106706.
- 7 S. Kotsuki, **K. Kurosawa**, and T. Miyoshi, “On the properties of ensemble forecast sensitivity to observations,” *Quarterly Journal of the Royal Meteorological Society*, vol. 145, no. 722, pp. 1897–1914, 2019.  DOI: 10.1002/qj.3534.
- 8 S. Kotsuki, **K. Kurosawa**, S. Otsuka, K. Terasaki, and T. Miyoshi, “Global precipitation forecasts by merging extrapolation-based nowcast and numerical weather prediction with locally optimized weights,” *Weather and Forecasting*, vol. 34, no. 3, pp. 701–714, 2019.  DOI: 10.1175/WAF-D-18-0164.1.

Journal papers in Japanese

- 1 H. Wang, **K. Kurosawa**, and Y. Uchiyama, “Development of a data assimilation system based on ensemble kalman filter and its application to the seto inland sea,” vol. 77, Nov. 2021, pp. 385–390.  DOI: 10.2208/kaigan.77.2_I_385.
- 2 Y. Uchiyama, N. Sengo, and **K. Kurosawa**, “Development of a hycom-roms downscaling ocean model and its application to the south china sea,” vol. 74, Jan. 2018, pp. 625–630.  DOI: 10.2208/kaigan.74.I_625.
- 3 **K. Kurosawa**, Y. Uchiyama, and T. Miyoshi, “On improvement of an estuarine reanalysis-forecast model for the seto inland sea based on 3d variational assimilation,” 2, vol. 73, Japan Society of Civil Engineers, 2017, pp. 1663–1668.  DOI: 10.2208/kaigan.73.i_1663.
- 4 Y. Uchiyama, N. Okada, and **K. Kurosawa**, “Eddy analysis in the north pacific using an eddy-tracking algorithm,” 2, vol. 73, 2017, pp. 1429–1434.  DOI: 10.2208/kaigan.73.I_1429.
- 5 Y. Uchiyama, **K. Kurosawa**, T. Kosako, and H. Tada, “Development of a weather routing system based on graph theory coupled with a compact ocean model for optimal vessel navigation,” vol. 72, Nov. 2016, pp. 1549–1554.  DOI: 10.2208/kaigan.72.I_1549.

Awards and Fellowships

2023	Outstanding Publication Award , University of Maryland.
2022	Green Fund Scholarship Award , University of Maryland. NCAR Advanced Study Program (ASP), Graduate Visitor Program , National Center for Atmospheric Research.
2019	Dean’s Fellowship from the College of Computer, Mathematical, and Natural Sciences , University of Maryland.
2018	Full Exemption from Repayment of Japan Student Services Organization (JASSO) Type I Scholarship for Fiscal Year 2018 , Japan .