UCHIDA, Takaya

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Education

Doctor of Philosophy, Physical Oceanography — October 2019
Columbia University in the City of New York, New York, USA

Master of Philosophy, Physical Oceanography — February 2018
Columbia University in the City of New York, New York, USA

Master of Arts, Physical Oceanography — May 2016
Columbia University in the City of New York, New York, USA

Bachelor of Engineering, Environmental Engineering — March 2014
The University of Tokyo, Tokyo, Japan

Research Experience

MOPGA Postdoctoral Research Fellow, Physical Oceanography — October 2019 - present
Institut des Géosciences de l'Environnement, CNRS, France

Submitted

- **Uchida, T.**, Q. Jamet, W. Dewar, J. Le Sommer, T. Penduff & D. Balwada. Diagnosing the thickness-weighted averaged eddy-mean flow interaction from an eddying North Atlantic ensemble, Part I: The Eliasson-Palm flux. *J. Adv. Model. Earth Syst.* doi:10.1002/essoar.10504082.4;

- **Uchida, T.**, J. Le Sommer, C. Stern, R. Abernathey, C. Holdgraf, A. Albert, L. Brodeau, E. Chassignet, X. Xu, J. Gula, G. Roullet, N. Koldunov, S. Danilov, Q. Wang, D. Menemenlis, C. Bricaud, B. Arbic, J. Shriver, F. Qiao, B. Xiao, A. Biastoch, R. Schubert, B. Fox-Kemper & W. Dewar. (In rev.). Cloud-based framework for inter-comparing submesoscale permitting realistic ocean models. *Geosci. Mod. Dev.* doi: 10.5194/gmd-2022-27;

- Ajayi, A., J. Le Sommer, L. Brodeau, B. K. Arbic, S. Guillaume, A. Albert, **T. Uchida** & P. Klein. (In rev.). On the modulation of kinetic energy transfer by internal gravity waves. *Geophys. Res. Let.* doi:10.31223/X5204J.

Published

- **Uchida, T.**, B. Deremble & S. Popinet. (Accepted). Deterministic model of the eddy dynamics for a midlatitude ocean model. *J. Phys. Ocean*. doi:10.1175/JPO-D-21-0217.1.

- **Uchida, T.**, Q. Jamet, A. Poje & W. Dewar. (2021) An ensemble-based eddy and spectral analysis, with application to the Gulf Stream. *J. Adv. Model. Earth Syst*. doi: 10.1029/2021MS002692;

- Khatri, H., S. Griffies, **T. Uchida**, H. Wang, & D. Menemenlis. (2021) Role of mixed-layer instabilities in the seasonal evolution of eddy kinetic energy spectra in a global submesoscale permitting simulation. *Geophys. Res. Let*. doi: 10.1029/2021GL094777;

- **Uchida, T.**, B. Deremble & T. Penduff. (2021) The seasonal variability of the ocean energy cycle from a quasi-geostrophic double gyre ensemble. *Fluids*. doi:10.3390/fluids6060206;

- **Uchida, T.**, B. Deremble, W. Dewar & T. Penduff. (2021) Diagnosing the Eliassen-Palm flux from a quasi-geostrophic double gyre ensemble. In proceedings of the *EarthCube Annual Meeting*. doi:10.5281/zenodo.5496375;

- Jamet, Q., B. Deremble, N. Wienders, **T. Uchida** & W. Dewar. (2021) On wind-driven energetics of subtropical gyres. *J. Adv. Model. Earth Syst*. doi: 10.1029/2020MS002329;

- Jones, S., J. Busecke, **T. Uchida** & R. Abernathey. (2020) Vertical regridding and remapping of CMIP6 ocean data in the cloud. In proceedings of the *EarthCube Annual Meeting*. https://github.com/earthcube2020/ec20_jones_etal;

- **Uchida, T.**, D. Balwada , R. Abernathey, G. McKinley, S. Smith & M. Lévy. (2020) The impact of seasonality in eddy iron fluxes on primary production in the Southern Ocean. *Nature Comm*. doi:10.1038/s41467-020-14955-0;

- **Uchida, T.**, D. Balwada, R. Abernathey, G. McKinley, S. Smith & M. Lévy. (2019) The contribution of submesoscale over mesoscale eddy iron transport in the open Southern Ocean. *J. Adv. Model. Earth Syst.* doi:10.1029/2019MS001805;

- **Uchida, T.**, D. Balwada, R. Abernathey, P. Channing, E. Boss & S. Gille. (2019) Southern Ocean Phytoplankton Blooms Observed by Biogeochemical Floats. *JGR: Oceans*. doi:10.1029/2019JC015355;

- **Uchida, T.**, R. Abernathey & S. Smith. (2017) Seasonality of eddy kinetic energy in an eddy permitting global climate model. *Ocean Model.* doi:10.1016/j.ocemod.2017.08.006;

Honors and Awards

- Co-investigator of the 'Assessing the Role of forced and internal Variability for the Ocean and climate Response in a changing climate' (ARVOR) project funded for duration of 2022 - 2024 by the French Les Enveloppes Fluides et l'Environnement (LEFE) program;

- Attendee of Les Houches Summer School on Fundamental Aspects of Turbulent Flows in Climate Dynamics, which took place during August 2017 at l'École de Physique des Houches, France;

- Scholarship from the Heiwa Nakajima Foundation, a private foundation in Japan, from September 2014 - August 2016.

Technical Skills

- Proficient in compiling and running numerical models in Basilisk and Fortran, with experience using the MITgcm;

- Proficient in big data analysis and has continued contributing to the development of Python open-source software such as `xrft` (doi:10.5281/zenodo.1402635) and `xgcm` (doi: 10.5281/zenodo.4821276), available via Github, `pip` and `conda-forge`, and the implementation of Pangeo Forge for cloud-based computational analysis.

Service Activity

- Reviewed manuscripts for the journals of *Journal of Physical Oceanography*, *Journal of Advances in Earth Modeling*, *Journal of Geophysical Research: Oceans*, *Geophysical Research Letters*, *Climate Dynamics*, *Biogeosciences*, and *Journal of Oceanology and Limnology*;

- Served as a reviewer for the Wallenberg Academy Fellows awarded by the Knut and Alice Wallenberg Foundation in Sweden, and the BIENVENÜE Call 2021 (H2020-MSCA-COFUND-2019) managed by the Regional Council of Brittany, France.