UCHIDA, Takaya

Office Address

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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. M. 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

- 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.