YAO YU

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RESEARCH KEYWORDS

satellite radar altimetry; small-scale ocean dynamics; seafloor-ocean interaction; ocean mixing; machine learning.

POSITION

Schmidt AI in Science Postdoc Fellow, University of California, San Diego 2023 – 2025

EDUCATION

University of California, San Diego, Doctor of Philosophy in Earth Sciences 2018 – 2023

Wuhan University, China, Master of Engineering in Geodesy and Geomatics 2015 – 2018

Wuhan University, China, Bachelor of Engineering in Geodesy and Geomatics 2011 – 2015

Academia Sinica, Taiwan, Visiting Student 2016, 2017

PUBLICATIONS

Peer-reviewed papers

11. **Yu, Y.**, Sandwell, D., & Dibarboure, G. (2024). Abyssal Marine Tectonics from the SWOT Mission, *Science*, DOI:10.1126/science.ads4472. [pdf]

10. **Yu, Y.**, Sandwell, D. T., Dibarboure, G., Chen, C., & Wang, J. (2024). Accuracy and resolution of SWOT altimetry: Foundation seamounts. *Earth and Space Science*, https://doi.org/10.1029/2024EA003581

9. Gevorgian, J., Sandwell, D. T., **Yu, Y.**, Kim, S. S., & Wessel, P. (2023). Global distribution and morphology of small seamounts. *Earth and Space Science*, https://doi.org/10.1029/2022EA002331. [pdf]

8. **Yu, Y.**, Sandwell, D. T., & Gille, S. T. (2023). Seasonality of the Sub-mesoscale to Mesoscale Sea Surface Variability from Multi-Year Satellite Altimetry. *Journal of Geophysical Research: Oceans*, https://doi.org/10.1029/2022JC019486 [pdf]

7. **Yu, Y**., Gille, S. T., & Sandwell, D. T. (2022). Global Mesoscale Ocean Variability from Multiyear Altimetry: An Analysis of the Influencing Factors, *Artificial Intelligence for the Earth Systems*, https://doi.org/10.1175/AIES-D-21-0008.1 [pdf]

6. Sandwell, D. T., Goff, J. A., Gevorgian, J., Harper, H., Kim, S. S., **Yu, Y.**, Tozer, B., Wessel, P., & Smith, W. H. (2022). Improved Bathymetric Prediction Using Geological Information: SYNBATH. *Earth and Space Science*, https://doi.org/10.1029/2021EA002069 [pdf].

5. **Yu**, **Y.**, Sandwell, D., Gille, S.T., & Villas Bôas, A.B. (2021). Assessment of ICESat-2 for the recovery of ocean topography, *Geophysical Journal International*, https://doi.org/10.1093/gji/ggab084 [pdf]

4. Chao, B. F., & **Yu, Y.** (2020). Variation of the Equatorial Moments of Inertia Associated with a 6-year Westward Rotary Motion in the Earth, *Earth and Planetary Science Letters*, https://doi.org/10.1016/j.epsl.2020.116316 [pdf]
3. Chao, B. F., **Yu, Y.**, & Chung, C.H. (2020). Variation of Earth's Oblateness J2 on Interannual-to-Decadal Timescales, *Journal of Geophysical Research: Solid Earth*, https://doi.org/10.1029/2020JB019421 [pdf]
2. Tanaka, Y., **Yu, Y.**, & Chao, B. F. (2019). Gravity and geoid changes by the 2004 and 2012 Sumatra earthquakes from satellite gravimetry and ocean altimetry. *Terr. Atmos. Ocean. Sci*, doi:10.3319/TAO.2018.10.24.02 [pdf]
1. **Yu, Y.**, Chao, B. F., García-García, D., & Luo, Z. (2018). Variations of the Argentine gyre observed in the GRACE time-variable gravity measurements and Ocean Altimetry, *Journal of Geophysical Research: Oceans*, https://doi.org/10.1029/2018JC014189 [pdf]

In progress

1. **Yu, Y.**, Gille, S. T., Sandwell, D. T., & Llewellyn Smith, S. (*in prep*) Assessing Tidal Conversion over Uncharted Bathymetry

ACADEMIC HONORS

Schmidt AI in Science Postdoc Fellowship, UCSD	2023-2025
H. William Menard Memorial Fellowship, UCSD	2023
Scripps Institution of Oceanography graduate fellowship, UCSD	2018
Frist Prize, Graduate Student Fellowship, Wuhan University	2016, 2017, 2018
National Scholarship, China	2014
Frist Prize, Undergraduate Student Fellowship, Wuhan University	2012, 2013, 2014, 2015

FUNDING

Recipient, UCSD Earth Section Small Grants

Topic: Scripps SWOT Workshop and monthly meetings ($3290) 2024

Postdoc Participant, NASA SWOT Science Team

Title: Global Marine Gravity, Bathymetry, and Small-scale Ocean Interactions from SWOT 2024-2028

Travel funds:

MPOWIR Pattullo Conference	2023
Satellite Observations and Climate Models Summer School, JPL	2022
Spaceborne Earth Observations and Global Change Summer School, Shanghai Astronomical Observatory	2014

TEACHING

Guest lecturer of SIO 135/236 Satellite Remote Sensing (undergraduate/graduate level)	spring quarter, 2024
Guest lecturer of SIO 111 Ocean waves (undergraduate)	winter quarter, 2023
Teaching assistant of SIO 111 Ocean waves (undergraduate level)	winter quarter, 2022

MENTORING

peer mentor for 2 graduate students 2020-2022

Josephine Joergensen, geophysics graduate student at UC San Diego

Project: Global Abyssal Hill Characteristics from SWOT Vertical Gravity Gradient Data

Martin Hawks, data-science undergraduate UC San Diego
Project: Seamount Identification in SWOT Data Using Support Vector Classification

PROFESSIONAL SERVICE

Journal reviewer:

GRL, IEEE TGRS, JGR ML, AGU Advances, EGUsphere

Proposal reviewer:

NASA early career FINESST applications	2024
Schmidt AI in Science Postdoc fellowship applications	2024

Meeting convenor:

AGU fall meeting session convener	2023, 2024
Scripps SWOT Workshop organizer	2024

Committee member:

AGU Geodesy Executive Committee early career representative	2023-*now*
AGU Geodesy Executive Committee student representative	2022-2023

PRESENTATIONS

Seminar at Applied Ocean Sciences, Scripps Institution of Oceanography	December 2024
Seminar at IGPP, Scripps Institution of Oceanography	April 2024
Seminar at USTC	March 2023
AGU fall meeting	2019, 2020, 2021, 2022, 2023, 2024
Ocean Sciences meeting	2020, 2022
SWOT Science Team Meeting	2022, 2024
Ocean Surface Topography Science Team Meeting	2021, 2023
Asia Ocean Geosciences Society	2017

FIELD WORK

GPS survey at Mexicali, Mexico	March 8-9, 2020
R/V Sally Ride at Fieberling Seamount chains	January 13-23, 2020
GPS survey at Ridgecrest, California	July 12, November 10-11, 2019
GPS survey at Painted Canyon, California	March 2-3, 2019
GPS survey at Palm desert, California	November 12-13, 2018