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Education

University of Miami

Miami, FL

Ph.D. in Meteorology and Physical Oceanography August 2016 – January 2022

Ocean University of China

Qingdao, China

Bachelor's Degree in Marine Science August 2012 – June 2016

Peer-reviewed Publications

SWOT Data Assimilation with Correlated Error Reduction: Fitting Model and Error Together

Yu Gao, Sarah T. Gille, Bruce D. Cornuelle, Matthew R. Mazloff, (In preparation)

Response of Mixed Layer Depth Variability to Ocean Eddies and Atmospheric Noise in the Southern Ocean

Yu Gao, Igor Kamenkovich, and Benjamin Kirtman,
Journal of Geophysical Research: Oceans (Under review)

Origins of mesoscale mixed-layer depth variability in the Southern Ocean

Yu Gao, Igor Kamenkovich, and Natalie Perlin
Ocean Science, 19, 615-627, 2023. DOI: [10.5194/os-19-615-2023](https://doi.org/10.5194/os-19-615-2023)

Oceanic Advection Controls Mesoscale Mixed Layer Heat Budget and Air–Sea Heat Exchange in the Southern Ocean

Yu Gao, Igor Kamenkovich, Natalie Perlin and Benjamin Kirtman
Journal of Physical Oceanography, 52(4), 537-555, 2022a. DOI: [10.1175/JPO-D-21-0063.1](https://doi.org/10.1175/JPO-D-21-0063.1)

A study of mesoscale air–sea interaction in the Southern Ocean with a regional coupled model

Natalie Perlin, Igor Kamenkovich, Yu Gao, and Benjamin Kirtman
Ocean Modelling 153, 101660, 2020. DOI: [10.1016/j.ocemod.2020.101660](https://doi.org/10.1016/j.ocemod.2020.101660)

Data Publications

Data for Origins of Mixed Layer Depth Variability in the Southern Ocean

Gao, Y., Kamenkovich, I., and Perlin, N.
University of Miami Libraries [data set], 2022b. DOI: [10.17604/0BKF-P943](https://doi.org/10.17604/0BKF-P943)

Oceanic Advection Controls Mesoscale Mixed Layer Heat Budget and Air-sea Heat Exchange in the Southern Ocean

Gao, Y., Kamenkovich, I., Perlin, N., and Kirtman, B.

University of Miami Libraries [data set], 2021. DOI: [10.17604/94qh-6m66](https://doi.org/10.17604/94qh-6m66)

Research Experience

Ocean State Estimation in the California Current System

Postdoctoral Scholar, UC San Diego

February 2022 – Present

Developed Python-based statistical models for SWOT Sea Surface Height satellite data, bridged observational gaps. Interpreted California Current state estimate that incorporates the SWOT data.

Mesoscale Air-Sea Interaction and Mixed Layer Variability in the Southern Ocean

Research Assistant, Univ. of Miami

August 2016 – January 2022

Modeled and analyzed mesoscale heat budget and air-sea interactions using regional air-sea coupled model. Interpreted data from Community Climate System Model (CCSM). Published three peer-reviewed papers.

Modeling the Annual Variation of Cold Water Masses in Bohai and Yellow Sea

Undergraduate Student, Ocean Univ. of China

September 2015 – June 2016

Modeled water masses using FVCOM and analyzed coastal processes. Quantified the impact of freshwater input on water mass distribution.

Teaching Experience

MSC 302 Physical Oceanography Laboratory

Teaching Assistant, University of Miami

Spring 2019

MSC/ATM 220 Climate and Global Change

Teaching Assistant, University of Miami

Fall 2019

Invited Talks

Mesoscale air-sea Interaction and Mixed Layer Variability in the Southern Ocean,

JPL Center for Climate Sciences seminar, Pasadena, CA

October 2023

SWOT Data Assimilation With Correlated Error Reduction,

NASA-MPOWIR Speaker Series, JPL, Pasadena, CA

November 2022

Oral Presentations

Origins of Mesoscale Mixed Layer Variability in the Southern Ocean,

Ocean Sciences Meeting 2022, Online

Feb-Mar 2022

Role of Mesoscale Currents in Ocean Mixed Layer Heat Budget,

Ocean Sciences Meeting 2020, San Diego, CA, USA

Feb 2020

Poster Presentations

SWOT Data Assimilation with Correlated Error Reduction: Fitting Model and Error Together,

	SWOT Science Team Meeting, Toulouse, France	Sept 2022
	Origins of Mesoscale Mixed Layer Variability in the Southern Ocean,	
	US CLIVAR Workshop, Denver, CO, USA	Mar 2023
	SWOT Data Assimilation With Correlated Error Reduction,	
	AGU Fall Meeting, Chicago, IL, USA,	Dec 2022
	Role of Mesoscale Currents in Ocean Mixed Layer Heat Budget and Air-Sea Coupling,	
	AGU Fall Meeting, Online	Dec 2020
Professional Development	The Pattullo Conference by MPOWIR, Warrenton, VA, USA	Sept 24 - 27, 2023
	NASA's Earth Observations Summer School, Using Satellite Observations to Advance Climate Models	
	Pasadena, CA, USA	Aug 16, 17 and 21 - 25, 2023
	Unifying Innovations in Forecasting Capabilities Workshop	
	Boulder, CO, USA	July 24, 2023 - July 28, 2023
	San Diego Supercomputer Center, Summer Institute 2022, Supercomputing and Data Science	
	San Diego, CA,	August 5 - 9, 2022
	SWOT Science Team Meeting, Chapel Hill, NC, USA	Jun 2022
	RSMAS's Informatics Group:	
	Member-led discussion on Artificial Intelligence (AI) in Oceanography and Atmospheric Sciences	
		Jan 2021 - Jan 2022
	AMS Short Course: Machine Learning in Python for Environmental Science	Apr 2021
	AMS Short Course: Python for Climate and Meteorology	Mar 2021
	Annual RSMAS Writing Workshop with Dallas Murphy,	
	Miami, FL, USA and Virtual	Dec 2020 - Jan 2021
Skills	Programming Languages, Softwares, and Models: Python, Fortran, Git, Cloud Computing (JPL-CMDA, PO.DAAC), LaTeX, NetCDF, ROMS, FVCOM, CCSM	
	Languages: English (fluent), Chinese (native)	
Professional Services	Referee for:	
	National Science Foundation	
	Ocean Sciences (eISSN: OS 1812-0792, OSD 1812-0822)	
Memberships	American Geophysical Union (AGU), American Meteorological Society (AMS)	