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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: A New Strategy Utilizing Mapped Altimetry as a Proxy

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 (In preparation)

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

Yu Gao, Igor Kamenkovich, Natalie Perlin 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 Researcher, UC San Diego February 2022 – Present
 Developed Python-based statistical models for SWOT Sea Surface Height satellite data, bridged observational gaps, and generated California Current state estimates using state-of-the-art data assimilation techniques.

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

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

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

SWOT Science Team Meeting, Chapel Hill, NC, USA

Jun 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, 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)

Journal of Geophysical Research: Oceans (eISSN:2169-9291)

Memberships

American Geophysical Union (AGU), American Meteorological Society (AMS)