Cheng, Yu

CONTACT INFORMATION

Research Associate
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RESEARCH INTERESTS

Climate variability, large-scale ocean circulation, High-resolution coupled climate modeling, ocean's role in climate, air-sea interaction, Python applications in oceanography, Data visualization

EDUCATION

Rosenstiel School of Marine & Atmospheric Science, University of Miami

Ph.D., Meteorology and Physical Oceanography **August 2012 - May 2018**

- Advisor: Professor Lisa Beal
- Co-advisor: Professor Ben Kirtman
- Thesis: Agulhas leakage variability and its climate implications in a coupled system

National Taiwan University, Taipei, Taiwan **September 2006 - June 2010**

B.S., Atmospheric Science

- Award of Dean (*Summa cum Laude*), College of Science

Freie Universitat Berlin, Berlin, Germany **October 2008 - July 2009**

Direct Exchange Program, Institute for Meteorology

- Accomplished courses in German: Atmospheric Dynamics I/II, Physical Climatology, Applied Statistics

PROFESSIONAL EXPERIENCE

Research Assistant **September 2011 - July 2012**
Laboratory for Climate Change Research, Academia Sinica

- Supervisor: Dr. Huang-Hsiung Hsu
- Climate data analysis and visualization, with the aid of NCL, CDO and FORTRAN; Topic: Teleconnections and jet stream waveguide

PUBLICATIONS

- Cheng, Y., L. Beal, and B. Kirtman, D. Putrasahan, 2018: Interannual Agulhas Leakage Variability and its Regional Climate Imprints (under revision for Journal of Climate)
- Van Sebille, E., S.M. Griffies, [and 33 others, including Cheng, Y.], 2018: Lagrangian ocean analysis: fundamentals and practices, Ocean Modelling, Volume 121, Pages 49-75, doi:10.1016/j.ocemod.2017.11.008.
- Cheng, Y., D. Putrasahan, L. Beal, and B. Kirtman, 2016: Quantifying Agulhas Leakage in a High-Resolution Climate Model, J. Climate, 29, 6881-6892, doi: 10.1175/JCLI-D-15-0568.1.
- Putrasahan, D. A., L. M. Beal, B. P. Kirtman, and Y. Cheng, 2015: A new Eulerian method to estimate spicy Agulhas leakage in climate models, Geophys. Res. Lett, 42, 4532-4539, doi:10.1002/2015GL064482.

PRESENTATIONS

- Research Center for Environmental Changes, Academia Sinica, Taipei, Taiwan, 2018, **Invited Talk** at titled "Agulhas leakage variability and its climate implications in a coupled system"
- Ocean Science Meeting, New Orleans, 2016 **Poster** titled "Investigating the relationship between Agulhas leakage and Southern Hemisphere westerlies in a coupled system"
- Lagrangian Ocean Modeling Workshop, Imperial College, London, September 2015, **Talk** titled "Assessing the skill of 30-day climate model output for Lagrangian analyses of Agulhas Leakage"
- IUGG general assembly, Prague 2015, **Talk** titled "Quantifying Agulhas leakage in coupled climate models"

AWARDS

National Taiwan University

- Award of Dean, College of Science, June 2010
- Two times Presidential Award (top 5% in the class), March and October 2007

ACADEMIC ACTIVITIES

- Participated in the NASA Summer School on Satellite Observations and Climate Models, Caltech, Pasadena, August 2017
- Participated in the METEOR 100/2 Research Cruise, from Namibia to Mauritius, October 2013: CTD operation, onboard meteorological data monitoring, provided daily maps of operational ocean forecasts and satellite SST observations.
- Participated in the NCAR Community Earth System Model tutorial, NCAR, Boulder, August 2013
- Reviewer for: Climate Dynamics, Geoscientific Model Development

TEACHING EXPERIENCE

- **Teaching assistant** for *Current topics of Weather and Climate (ATM/MSC 118)*; undergraduate course, Spring 2014, Instructor: Chidong Zhang
  - Gave one 50-min lecture titled "Oceans and Climate Change"
- **Teaching assistant** for *Climate & Global Change (MSC 220)*; Fall 2014, Instructor: Igor Kamenkovich
  - Gave two 50-min lectures titled "Water, aerosols and ozone" and "Climate change mitigation"
- **Student Mentor** for Center for Computational Science (CCS), University of Miami, 2017-
  - Shared experiences and helped students tackling programming challenges

SOFTWARE SKILLS

Computer Programming:

- UNIX shell, Fortran, Python, LaTeX, Git, SQL

Numerical Analysis and climate data processing:

- MATLAB, CDO, NCO, python-xarray, python-pandas, python-dask, GDAL

Gridded-data visualization:

- NCL, python-matplotlib, python-cartopy