



RATNAKSHA LELE

PhD Candidate

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EDUCATION

UC SAN DIEGO

PhD in Oceanography
Expected 2022

UC SAN DIEGO

Master of Science
Physical Oceanography
Dec 2018

VIT UNIVERSITY

Bachelor of Technology
Mechanical Engineering
June 2016

LINKS

Github:

[www.github.com/ratnaksha](https://github.com/ratnaksha)

LinkedIn:

www.linkedin.com/in/ratnakshalele

COURSEWORK

GRADUATE

ML for Physical Applications
Data Analysis Methods I, II & III
Geophysical Fluid Dynamics I & II
Applied Mathematics I, II & III

UNDERGRADUATE

Probability and Statistics
Computational Fluid Dynamics
Applied Numerical Methods
Operations Research

SKILLS

Over 5000 lines:

Python • MATLAB • C
LaTeX

ML frameworks:

Keras • Tensorflow • Scikit-learn

Familiar:

R • Julia

RESEARCH

SCRIPPS INSTITUTION OF OCEANOGRAPHY | PhD CANDIDATE

- Working with [Dr. Sarah Purkey](#) on quantifying the role of turbulent mixing in the global deep oceans from novel measurements from χ -pod turbulence profiler, critical for closure of the global deep ocean circulation.
- Blending machine learning algorithms with satellite measurements of changes Earth's gravitational field from [NASA GRACE](#) and [GRACE-FO](#) missions and ocean state estimate data from [NASA ECCO](#) and [SOSE](#) to reconstruct time series of global deep ocean mass transport.
- Studying temporal and spatial variability and trends in deep ocean mass transport and response to global anthropogenic climate change.

WOODS HOLE OCEANOGRAPHIC INSTITUTION | RESEARCH FELLOW

- Analyzed [Ice Tethered Profiler \(ITP\)](#) data from the Arctic.
- Calculated momentum and energy budgets for sea-ice to parameterize in climate models: published in *Elementa: Science of the Anthropocene*.
- Reconstructed Sea Surface Temperature (SST) variability in the Central Indian Ocean in the last 200 years from Ca/Sr and Ba/Sr paleoclimate proxies from drilled coral records and investigated the variability and teleconnection to the South Asian Winter monsoon.

INDIAN INSTITUTE OF SCIENCE | RESEARCH FELLOW

- Analysis of tropical hurricane and cyclone data from satellite observations and climate reanalysis data.
- R&D of new tropical cyclone detection and prediction algorithm for the Indian Subcontinent.

WORK EXPERIENCE

PhD CANDIDATE | SCRIPPS INSTITUTION OF OCEANOGRAPHY

Aug 2016 – Present | La Jolla, CA

RESEARCH FELLOW | WOODS HOLE OCEANOGRAPHIC INSTITUTION

June 2015 – April 2016 | Woods Hole, MA

RESEARCH FELLOW | INDIAN INSTITUTE OF SCIENCE

June 2014 – Aug 2014 | Bangalore, India

AWARDS

- 2020 NASA Future Investigator in Earth and Space Science Fellowship Grant
- 2020 NASA JPL Center for Climate Science Summer School
- 2017 Departmental Travel Award for Research Excellence
- 2016 UC San Diego Regents Fellowship
- 2016 VIT University Special Achiever Award
- 2015 Woods Hole Oceanographic Institution Summer Student Fellowship
- 2014 Indian Academy of Sciences Summer Research Fellowship

PUBLICATIONS

[1] J D Nash, **R Lele**, J A MacKinnon, S G Purkey, et al. Estimating χ using fast-response thermistors on traditional shipboard CTDs: sources of uncertainty and bias. Journal of Atmospheric and Oceanic Technology, in prep.

[2] **R Lele**, S G Purkey, J D Nash, J A MacKinnon, A M Thurnherr, C B Whalen, et al. Abyssal Mixing in the South West Pacific Basin. Journal of Physical Oceanography, in prep.

[3] Sylvia T Cole, John M Toole, **Ratnaksha Lele**, Mary-Louise Timmermans, Shawn G Gallaher, Timothy P Stanton, William J Shaw, Byongjun Hwang, Ted Maksym, Jeremy P Wilkinson, et al. Ice and ocean velocity in the arctic marginal ice zone: Ice roughness and momentum transfer. Elementa Science of the Anthropocene, 5, 2017. [[pdf](#)].

[4] **R Lele**. An investigation into arctic sea-ice dynamics and energetics. Report submitted in partial fulfillment of the WHOI Summer Student Fellowship, 2015.

CONFERENCE PRESENTATIONS

R Lele et al, Abyssal Mixing in the South West Pacific Basin. Ocean Sciences Meeting, San Diego CA, Feb 2020, **Talk**.

R Lele et al, Recipes of Turbulent Mixing from the South Pacific. Gordon Research Conference on Ocean Mixing, Andover NH, June 2018, **Poster**.

R Lele et al, Decadal Changes in the Properties and Transport of AABW at 32oS in the Southwest Pacific Basin. Ocean Sciences Meeting, Portland OR, Feb 2018, **Talk**.

R Lele and SG Purkey Antarctic Bottom Water Warming in the South West Pacific Basin. Graduate Climate Conference, Woods Hole MA, Nov 2017, **Poster**.

R Lele et al, An Investigation into Arctic Sea-Ice Dynamics and Energetics. Ocean Sciences Meeting, New Orleans LA, Feb 2016, **Talk**.

TEACHING EXPERIENCE

Introduction to Physical Oceanography SIO-210
Introduction to Programming in C ITE-101

Teaching Assistant
Teaching Assistant

Fall 2020
Fall 2012

OCEANIC FIELDWORK EXPERIENCE

HLY-1803 Experiment in the Beaufort and Chukchi Seas
GO-SHIP P06 Leg-1 in the South Pacific
La Jolla Internal Tide Experiment

US Coast Guard Cutter Healy
RVIB Nathaniel B. Palmer
R/V Sally Ride

Oct-Nov 2018
Jul-Aug 2017
Dec 2016