Jet Propulsion Laboratory
4800 Oak Grove Dr, M/S 300-350C
Pasadena, CA 91109-8099

luke.kachelein@jpl.nasa.gov
https://github.com/lkach
+1 (818) 354–7021 Ext. 47021

Luke Kachelein

Education

2016–2023 | **Ph.D. in physical oceanography**, Scripps Institution of Oceanography.
Dissertation title: "Bayesian Harmonic Analysis of Tidal and Wind-Driven Currents in the California Current System"

2016–2017 | **M.S. in physical oceanography**, Scripps Institution of Oceanography (concurrent with Ph.D.).

2011–2015 | **A.B. in physics**, Vassar College. General honors, departmental honors, Phi Beta Kappa, Sigma Xi. Minor in mathematics.

Research Experience

2023–Present | **Postdoctoral Researcher - Jet Propulsion Laboratory**

Analyze sea surface height data from the SWOT mission. Supervisors: **Jinbo Wang and Dimitris Menemenlis**.

2016–2023 | **Graduate Student Researcher - Scripps Institution of Oceanography**
I investigate tidal and wind-driven signals in coastal radar observations of surface currents. Advisors: **Sarah Gille, Matthew Mazloff, and Bruce Cornuelle**.

2014 | **Research Experience for Undergraduates (NSF REU) - University of North Carolina at Chapel Hill**
Investigated material properties of blood and improved software interface, using MATLAB and LabVIEW, as part of the development of a novel blood elastometer.

Publications

Luke Kachelein, Bruce D. Cornuelle, Sarah T. Gille, and Matthew R. Mazloff. Harmonic analysis of non-phase-locked tides with red noise using the red_tide package. *Journal of Atmospheric and Oceanic Technology*, 2022. https://doi.org/10.1175/JTECH-D-21-0034.1

Fellowships and Awards

2019–2022 | **Future Investigators in NASA Earth and Space Science and Technology** – Awarded by NASA for graduate student-designed research projects that contribute to Science Mission Directorate's science, technology, and exploration goals.

2015–2016 | **Fulbright Fellowship** – Awarded by the U.S. Department of State for a year of study in Jena, Germany, in the subject of photonic physics.

Teaching Experience

2018	**Introduction to Physical Oceanography - SIOC 210** - Teaching assistant for the foundational physical oceanography class, a required course for most SIO first year graduate students. Conducted review sessions and graded homework assignments for the 42 students in the class. Course instructor: Professor Lynne Talley.

Service

2021	**Undergraduate Mentor** – Served as a mentor for a visiting undergraduate student during the summer as part of the Scripps Undergraduate Research Fellowship (SURF) program.
2018–2019	**Peer Mentor** – Served as a mentor for a first year Ph.D. student in my department as part of the peer mentor program at Scripps Institution of Oceanography, San Diego, CA. Received *Outstanding Mentor Award* for that year's cohort of mentors.

Computational skills

Programming Languages	MATLAB, Mathematica, Python.
Tools and Software	LaTeX, Bash shell, Vim, Git.
Operating Systems	Unix-based operating systems (especially macOS), Windows.

Languages and Citizenship

English:	Native language
German:	Limited working proficiency
Nationality:	United States of America