Scripps Institution of Oceanography
La Jolla, CA

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Aidan Blaser

Research Interests

Surface Gravity Waves, Theoretical Fluid Mechanics, Air-Sea Interactions

Education

2021-PRESENT | **Ph.D. in physical oceanography**, Scripps Institution of Oceanography.
Current GPA (4.0/4.0)

2017-2021 | **B.A. in physics (concentration in earth sciences)**, Cornell University
Honors: *magna cum laude* (4.04/4.3)
Phi Beta Kappa Honors Society

Non-formal Education

2023 | **Fluid Dynamics of Sustainability and the Environment (FDSE)** summer school, École Polytechnique, Palaiseau, France.

Research Experience

2021-PRESENT | **Graduate Student Researcher - Scripps Institution of Oceanography**
Currently working alongside advisors Nick Pizzo (University of Rhode Island) and Luc Lenain (SIO) to investigate theoretical properties of steep and breaking surface gravity waves.

2020-2021 | **Undergraduate Student Researcher - Cornell University**
Worked with Peter Diamessis on turbulent wakes produced by a moving object in a stratified flow as well as mixing caused by breaking internal solitary waves.

2019 | **MPL Intern - Scripps Institution of Oceanography**
For the summer of 2019, I worked alongside Luc Lenain in the Air-Sea lab to understand the statistics of whitecap wave breaking events in the open ocean in order to better understand surface mixing.

2018 | **Research Assistant - Princeton University**
Archived and digitized the notes of the late Tony Dahlen, Professor of Geophysics at Princeton. The culmination of this work was featured in an article in the Smilodon, Princeton's geosciences newsletter.

Awards

Best Speaker | **Scripps Student Symposium**, Scripps Institution of Oceanography, La Jolla, CA, 2023

Best Speaker | **Pre-APS DFD Biological and Environmental Fluid Dynamics Meeting**, University of Pennsylvania, PA , 2023

Teaching Experience and Involvement

Nov 2023 | **Early Career Research Leader**- NASA AMES
Led an Early Career Researcher meeting for the NASA S-MODE science team meeting at NASA AMES.

2022 | **COAP Tutor** - SIO
COAP Department Tutor for MS 1st-year students at Scripps. Assisted with classes ranging from fluid mechanics, physical oceanography, and math.

2022-2023 | **CASPO Seminar Committee Member**- SIO
Member of a graduate student committee who chooses weekly speakers from SIO and beyond. In addition to seminars, weekly lunches and gatherings are organized for speakers and students alike.

2018-2019 | **Physics Undergraduate Teaching Assistant** – Cornell University
Assisted in laboratory demonstrations and instruction for introductory level physics courses at Cornell. Participated in lab planning meetings to improve physics education research.

Undergraduate Mentoring

2023-present | **Raphaël Benamran** – Brown University
Mentored Raphaël in the development of a breaking wave simulator in the Julia programming language. (`https://github.com/aidanblaser/Castawave`).

Publications

Aidan Blaser, Raphaël Benamran, Bia Villas Bôas, Luc Lenain, and Nick Pizzo. Momentum, energy and vorticity balances in deep-water surface gravity waves, *Journal of Fluid Mechanics*, 2024.

Aidan Blaser, Luc Lenain, and Nick Pizzo. The increased drift of steep focusing surface gravity waves, *Journal of Fluid Mechanics*, submitted.

Presentations

Aidan Blaser, Luc Lenain, and Nick Pizzo. The Lagrangian mean flow of narrow banded wave fields. California Geophysical Fluid Dynamics Conference (CalGFD), University of California Santa Barbara, Santa Barbara, CA, 2025.

Aidan Blaser, Raphaël Benamran, Luc Lenain, A. Bia Villas-Bôas, and Nick Pizzo. Vorticity, Energy, and Momentum Balances in Surface Gravity Waves. International Congress of Theoretical and Applied Mechanics (ICTAM), Daegu, Republic of Korea, 2024.

Aidan Blaser, Luc Lenain, and Nick Pizzo. Stokes drift in the nonlinear ocean. Ocean Sciences Meeting, New Orleans, LA, 2024.

Aidan Blaser, Luc Lenain, and Nick Pizzo. The Lagrangian mean flow of broadband wave fields. APS DFD Meeting, Washington DC, 2023.

Aidan Blaser, Luc Lenain, and Nick Pizzo. The Lagrangian mean flow of broadband wave fields. Pre-APS DFD Biological and Environmental Fluid Dynamics Meeting, University of Pennsylvania, PA, 2023. **Recipient of Best Speaker Award**.

Aidan Blaser, Luc Lenain, and Nick Pizzo. Eulerian or Lagrangian: The importance of reference frames for remote sensing. NASA S-MODE science team meeting, NASA AMES, CA, 2023.

Aidan Blaser, Raphaël Benamran, A. Bia Villas-Bôas, Luc Lenain, and Nick Pizzo. Why water waves cause drift. Scripps Student Symposium (S^3), San Diego, CA, 2023. **Recipient of Best Speaker Award**.

Aidan Blaser, Nick Pizzo, and Luc Lenain. The Lagrangian mean flow of monochromatic and broadband wave fields. Waves in Sea Environment (WISE) meeting, Princeton, NJ, 2023.

Aidan Blaser. Deep Water Breaking Wave Statistics. Marine Physical Laboratory Internship, San Diego, 2019.

Fieldwork

MAY 2023 **New England Seamounts Experiment (NESMA) Pilot**
Assisted in the unpacking and deployment of an autonomous waveglider to measure temperature, currents, and acoustics in the Gulf Stream.

2022-2023 **NASA Sub-mesoscale Ocean Dynamics Experiment (S-MODE)**
Remotely piloted up to eight wavegliders to sample submesoscale features off the coast of San Francisco. Main experiments were held October 2022 and April 2023.