

Miriam F. Sterl

PHD STUDENT · PHYSICAL OCEANOGRAPHY

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Education

PhD Physical Oceanography

ROYAL NETHERLANDS INSTITUTE FOR SEA RESEARCH (NIOZ) &
INSTITUTE FOR MARINE AND ATMOSPHERIC RESEARCH UTRECHT (IMAU)

't Horntje, the Netherlands

November 2021 - present

- Supervisors: Dr. Sjoerd Groeskamp (NIOZ) and Dr. Michiel Baatsen (IMAU)
- Promotors: Prof. Dr. Gert-Jan Reichart (NIOZ) and Prof. Dr. Henk Dijkstra (IMAU)
- Research focus: mesoscale turbulence over topography; parameterising eddy diffusivity

MSc Climate Physics (average grade 9.0/10)

UTRECHT UNIVERSITY

Utrecht, the Netherlands

2019 - 2021

- Courses on meteorology, oceanography, coastal processes and the climate system
- MSc advisor: Dr. Femke de Jong. Thesis grade: 8.8/10

BSc Physics and Astronomy & BSc Mathematics (cum laude, average grade 9.3/10)

UTRECHT UNIVERSITY

Utrecht, the Netherlands

2015 - 2019

- Focus on (geophysical) fluid dynamics, numerical modelling and differential equations
- Minor in Computer Science
- BSc advisor: Dr. Erik van Sebille. Thesis grade: 9.1/10

Professional Experience

Research Assistant

INSTITUTE FOR MARINE AND ATMOSPHERIC RESEARCH UTRECHT (IMAU)

Utrecht, the Netherlands

2020 - 2021

- Developing a routine for producing ENSO predictions using deep learning techniques
- Supervisor: Prof. Dr. Henk Dijkstra

Summer School Assistant

CENTRE FOR COMPLEX SYSTEMS STUDIES (CCSS)

Utrecht, the Netherlands

2019

- Assisting in organisational tasks of the summer school "Introduction to Complex Systems" for 40 international students

Student Member Selection Committee

MATHEMATICAL INSTITUTE

Utrecht, the Netherlands

2019

- Selecting candidates for a position of Assistant Professor in Applied Mathematics

Teaching Assistant

UTRECHT UNIVERSITY

Utrecht, the Netherlands

2016 - 2021

- For 8 courses in the BSc programmes Physics and Astronomy and Mathematics
- Supervising tutorial sessions and grading assignments

Publications

- Sterl, M.F.,** Palóczy, A.P., Groeskamp, S., Baatsen, M.L.J., LaCasce, J.H., & Isachsen, P.E. (2025). The joint effects of planetary β , topography and friction on baroclinic instability in a two-layer QG model. Submitted to *Journal of Fluid Mechanics*.
- Sterl, M.F.,** LaCasce, J.H., Groeskamp, S., Nummelin, A., Isachsen, P.E., & Baatsen, M.L.J. (2024). Suppression of mesoscale eddy mixing by topographic PV gradients. *Journal of Physical Oceanography*, 54(5):1089–1103. <https://doi.org/10.1175/JPO-D-23-0142.1>
- Sterl, M.F.,** & de Jong, M.F. (2022). Restratification structure and processes in the Irminger Sea. *Journal of Geophysical Research: Oceans*, 127, e2022JC019126. <https://doi.org/10.1029/2022JC019126>
- Sterl, M.F.,** Delandmeter, P., & van Sebille, E. (2020). Influence of barotropic tidal currents on transport and accumulation of floating microplastics in the global open ocean. *Journal of Geophysical Research: Oceans*, 125, e2019JC015583. <https://doi.org/10.1029/2019JC015583>

Teaching and Supervision

Guest lecturer

UTRECHT UNIVERSITY

Utrecht, the Netherlands

2025

- Two guest lectures in the MSc course Dynamical Oceanography
- Topics: quasi-geostrophic dynamics, barotropic and baroclinic instability

Daily supervisor

ROYAL NETHERLANDS INSTITUTE OF SEA RESEARCH (NIOZ)

't Horntje, the Netherlands

2023

- Daily supervisor of MSc student

Presentations

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|------|---|---------------------------------|
| 2024 | Gordon Research Seminar (GRS) Ocean Mixing , poster
Suppression of eddy diffusivities over a sloping seafloor in a two-layer model | South Hadley, MA, United States |
| 2024 | Dutch Earth Science Conference (NAC) , poster
Suppression of eddy diffusivities over a sloping seafloor in a two-layer model | Utrecht, the Netherlands |
| 2023 | Buys Ballot Research School (BBOS) symposium , talk
Suppression of mesoscale eddy mixing by topographic PV gradients | 't Horntje, the Netherlands |
| 2023 | International Union of Geophysics and Geodesy (IUGG) , talk
Suppression of mesoscale eddy mixing by topographic PV gradients | Berlin, Germany |
| 2022 | International Conference for Young Marine Researchers (ICYMARE) , talk
How ocean bottom topography impacts eddy mixing | Bremerhaven, Germany |
| 2022 | Dutch Earth Science Conference (NAC) , talk
How ocean bottom topography impacts eddy mixing | Utrecht, the Netherlands |
| 2022 | Gordon Research Seminar (GRS) Ocean Mixing , talk and poster
Beyond mean flow suppression: PV suppression of eddy mixing | South Hadley, MA, United States |
| 2021 | Dutch Earth Science Conference (NAC) , talk
Influence of tidal currents on transport and accumulation of floating microplastic in the ocean | online |
| 2020 | Dutch Earth Science Conference (NAC) , poster
Do the tides influence the plastic soup? | Utrecht, the Netherlands |

Awards

- 2024 **Winner PhD writing competition**, Dutch Physics Magazine (NTvN)
[Link to article \(in Dutch\)](#)
- 2024 **Poster award**, Dutch Earth Science Conference (NAC)
[Link to poster](#)
- 2023 **Audience award for best presentation**, BBOS symposium
- 2017 **Teaching assistant award**, Utrecht University

Courses

- 2023 - 2024 **Visualize your Science**, 10 weeks (part-time) *online*
- 2022 **Air-Ice-Sea Interaction II**, 6 weeks *Longyearbyen, Norway*
The University Centre in Svalbard (UNIS)
- 2019 **Marine Masters Summer Course**, 2 weeks *'t Horntje, the Netherlands*
Royal Netherlands Institute for Sea Research (NIOZ)
- 2019 **Winter School on Analysis of Climate Variability**, 1 week *Warnemünde, Germany*
Leibniz Institute for Baltic Sea Research (IOW)

Service

- 2022 - 2024 **Chair**, Gordon Research Seminar on Ocean Mixing
Seminar for early career researchers, preceding the Gordon Research Conference *South Hadley, MA, United States*
- 2023 - 2024 **Organiser**, WomenNetPhysics conference
Conference and networking event on the position of women in physics in the Netherlands *Utrecht, the Netherlands*
- 2023 - pres **PhD representative**, Department of Ocean Systems at NIOZ *'t Horntje, the Netherlands*
- 2021 - pres **General Board Member**, Dutch Physics Society (NNV) *Amsterdam, the Netherlands*
- 2020 - 2021 **Student Ambassador**, MSc programme Climate Physics *Utrecht, the Netherlands*
- 2018 - 2020 **Committee Member**, Study Association A-Eskwadraat *Utrecht, the Netherlands*

Cruises

- 2023 **Mixation-II**, August 22 - 27 *Bermuda - Bermuda*
Mooring recovery
- 2022 **UNIS cruise**, October 31 - November 5 *Longyearbyen - Longyearbyen*
CTD measurements in Isfjorden fjord system
- 2022 **Mixation-I**, April 21 - May 1 *Curaçao - Bermuda*
Deployment of 4 moorings; deployment of ARGO floats; CTD measurements

Outreach

Guest lectures for high school students, various schools/events

2023-2025 For various age ranges between 12–18 years

Topics: physical oceanography, ocean and climate, working as a scientist

Talk at symposium on Climate Physics, Study Association Marie Curie

2025 For university students in Physics

Topic: physical oceanography

Podcast Atomen Enzo, Utrecht University

2025 Podcast of the Faculty of Science of Utrecht University for a wide audience

Topics: observational oceanography, ocean eddies, eddy parameterisations

[Link to podcast episode](#)

Even Over Morgen, Utrecht University & Utrecht public libraries

2023 Outreach event facilitating conversations between scientists and the public

Topics: oceanography, the role of climate scientists in society

Kindercolleges, Utrecht University

2019 For kids aged 8–12 years

Topic: plastic soup

Languages

Dutch, native

German, native

English, proficient (C2)

French, intermediate (B2)

Norwegian, beginner (A2)

Programming languages

Python, proficient

MATLAB, intermediate

C#, intermediate

Julia, beginner