Arthur Coquereau

Curriculum Vitae

Research Experience

Laboratory for Ocean Physics and Satellite Remote Sensing, Brest, France

Jan 2026 – May 2026 **Postdoctoral Researcher – Physical Oceanography & Climate**.
Role of small-scale oceanic features in climate models. Participation in the EERIE (European Eddy-Rich ESMs) project by analyzing high-resolution climate simulations to quantify and understand the influence of small-scale ocean features on large-scale circulation and climate models, providing insights into resolution-sensitive climate model results.

Laboratory for Ocean Physics and Satellite remote sensing, Brest, France

Nov 2022 – Nov 2025 **PhD student – Physical Oceanography & Climate**.
Variability of a Changing Climate: Interactions between Mean State and Fluctuations. Analysis of state-of-the-art ensemble climate models (CMIP6) with particular focus on surface temperature and precipitations at global scale, Atlantic Meridional Overturning Circulation (AMOC), and El Niño-Southern Oscillation (ENSO). Development and analysis of a regional coupled Ocean-Atmosphere ensemble model (CROCO/ROMS-WRF).

Advisors : **Dr. Florian Sévellec**, *Senior Researcher at CNRS (French National Centre for Scientific Research)*, Laboratory for Ocean Physics and Satellite remote sensing, Brest, France

Dr. Thierry Huck, *Senior Researcher at CNRS (French National Centre for Scientific Research)*, Laboratory for Ocean Physics and Satellite remote sensing, Brest, France

Dr. Joël Hirschi, *Senior Researcher at National Oceanography Centre (NOC), Associate Head Marine Systems Modelling*, Southampton, UK

Woods Hole Oceanographic Institution, MA, USA

Apr – Sep 2022 **Guest student / Master degree's internship (Second year)**.
Pathways and fate of freshwater around the southern tip of Greenland. Evaluation of altimetry-derived surface currents in comparison with surface drifter trajectories. Study of shelf-basin exchanges in altimetry surface currents from 1993 to 2022.

Advisor : **Dr. Nicholas Foukal**, *Assistant Professor, Skidaway Institute of Oceanography*, GA, USA (*Formerly: Woods Hole Oceanographic Institution*)

Laboratory for Ocean Physics and Satellite remote sensing, Brest, France

Jul – Aug 2021 **Master degree's internship (First year)**.
Interactions between ocean eddies and islands in the equatorial Pacific. Development and analysis of simulations from Surface Quasi-Geostrophic model.

Advisor : **Prof. Xavier Carton**, *Senior Professor, University of Western Brittany*, Laboratory for Ocean Physics and Satellite remote sensing, Brest, France

Education

2022–2025 **PhD, Physical Oceanography & Climate**, *University of Western Brittany*, Brest, France.
Title: Variability of a Changing Climate: Interactions between Mean State and Fluctuations

2020–2022 : **Master "Marine Science" (Physical Oceanography & Climate)**, *University of Western Brittany*, Brest, France (Equivalent Master of Science with major Oceanography).

Laboratoire d'Océanographie Physique et Spatiale
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2017–2020 : **Licence "Sciences de la Terre"**, *University of La Rochelle*, La Rochelle, France (Three-years university degree in science, with major Earth Sciences and Physics including Oceanography).

Publications

In review

2025 **Coquereau, A.**, F. Sévellec, T. Huck, J. J.-M. Hirschi, and Q. Jamet. Past, Present, and Future Variability of Atlantic Meridional Overturning Circulation in CMIP6 Ensembles. ***EGUsphere***, volume 2025, pages 1–29, 2025.

Published

2025 **Coquereau, Arthur**, Florian Sévellec, Thierry Huck, and Alexey V. Fedorov. Increase in ENSO Frequency and Intensity Under 20th and 21st Century Warming: Insights From CMIP6 Large Ensembles. ***Geophysical Research Letters***, volume 52, page e2025GL116541, 2025.

2024 **Coquereau, A.**, F. Sévellec, T. Huck, J. J.-M. Hirschi, and A. Hochet. Anthropogenic Changes in Interannual-to-Decadal Climate Variability in CMIP6 Multiensemble Simulations. ***Journal of Climate***, volume 37, pages 3723 – 3739, 2024.

2024 **Coquereau, A.**, N. P. Foukal, and K. Våge. Extreme wind events responsible for an outsized role in shelf-basin exchange around the southern tip of Greenland. ***Science Advances***, volume 10, page eadp9266, 2024.

2023 **Coquereau, A.** and N. P. Foukal. Evaluating altimetry-derived surface currents on the south Greenland shelf with surface drifters. ***Ocean Science***, volume 19, pages 1393–1411, 2023.

Science Outreach Article

2024 **Beylat, S., Coquereau, A., Le Priol, C., Marino, T., Saddier, L.**, La science des points de bascule., In ***La Météorologie***, 124, 44-48, 2024..

Scientific cruises

Sep 2023 **EN 709**, *R/V Endeavor*, Woods Hole, MA to Narragansett, RI, USA (25 days), Chief Scientist: Nick Foukal and Dan Torres (WHOI).
Southwestern Labrador Shelf and Newfoundland shelf. Deployment of six surface drifters. Participation in mooring work: Deployment of seven moorings in the Southwestern Labrador Shelf. Hydrographic and velocity survey of the Newfoundland shelf.

Aug – Sep, 2022 **OSNAP 32**, *R/V Neil Armstrong*, Reykjavik, Iceland to Nuuk, Greenland (40 days), Chief Scientist: Fiamma Straneo (UC San Diego).
Southwestern Irminger Sea and the southeastern Labrador Sea. Responsible for deployment of 12 surface drifters and four profiling floats (coordinated by Nick Foukal). Participation in mooring work: Recover and turn around shelf and slope moorings of OSNAP-East (Irminger) and OSNAP-West (eastern Labrador) arrays. Hydrographic and velocity survey of the southeast and southwest Greenland shelves and slopes.

Participation in Scientific events

Mai 2025 **Arctic-Subarctic Ocean Fluxes (ASOF)**, Barcelona, Spain.
Oral presentation

Apr 2025 **European Geophysical Union (EGU25) Annual meeting**, Vienna, Austria.
Oral presentation

Dec 2024 **American Geophysical Union (AGU24) Annual meeting**, Washington, D.C. (USA).
Poster presentation

May 2024 **Workshop: Interfaces in the Climate System**, Grenoble, France.
Oral presentation

Oct 2023 **Joint Workshops: "Previsibility in Ocean, Atmosphere and Climate Sciences" and "Tipping Points in the Climate System"**, Paris, France.
Poster presentation

Teaching & Supervision

Spring 2024 **Lectures and practical work: Applied methods for oceanography**, European Institue for Marine Studies, Brest, France.
Master's degree students in Physical Oceanography & Climate

Winter 2024 **Practical work and project supervision: Big Data in Climate Sciences**, IMT Atlantique, Brest, France.
Master's degree students in Physical Oceanography & Climate and Computer engineering students

Professional activities

Journal reviewer, Critical Insights in Climate Change (Taylor & Francis).