

RAPHAËL BAJON

Phd & former engineer

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EXPERIENCE

Phd - Research Scientist

French national institute for ocean science and technology

11/2021 – Present France - Spain - Atlantic Ocean

- Used deep learning and BGC-Argo to predict seasonal variability for nutrients and carbonate system variables
- Investigated the North Atlantic transport budget of natural and anthropogenic carbon for 30 years at a monthly resolution
- Participated in the collection of hydrographic data for my PhD as a scientist on board during the Oceanographic Research Campaign
- Investigated air-sea fluxes with my bio-geochemical supervisor and developed in Python his method for calculating anthropogenic carbon during a two-month research stay at Marine Research Institute - CSIC
- Represented young scientists at two international ocean policy events (United Nations Ocean Conference and One Ocean Summit)
- Presented my internship and Phd work to the European Geosciences Union 2023
- Taught *Object Oriented Programming - Python* classes to university students

Data Scientist Intern

Laboratory for Ocean Physics and Satellite remote sensing

03/2021 – 09/2021 France

- Used of a new coupled physical model to predict and analyze the distribution of plastics in the ocean under realistic emission scenarios

Research Engineer Intern (2 missions)

Aristotle University: Chemistry group – Laboratory SIAME

2019 & 2020 Greece - France

- Constructed on *Fluent* geometric structures to study the effect of flow on biofilm formation
- Developed and analyzed a fluid-structure model to predict pyroclastic flow over a volcano

JOURNAL PUBLICATIONS

- R. Bajon** et al., Seasonal to long-term variability of natural and anthropogenic carbon concentrations and transports in the subpolar North Atlantic Ocean. In review in *Biogeosciences*.
- R. Bajon** et al., Evolution of monthly carbon storage in the North Atlantic Ocean over the past three decades, in preparation. To be submitted to *JGR Oceans*.
- R. Asselot, L. Carracedo, V. Thierry, H. Mercier, A. Velo, **R. Bajon**, F. F. Pérez, Anthropogenic carbon pathways towards the North Atlantic interior revealed by Argo-O2, neural networks and back-calculations, *Nature Communications*, 2024
- R. Bajon** et al., Influence of waves on the three-dimensional distribution of plastic in the ocean, *Marine Pollution Bulletin*, 2023
- T. Huck, **R. Bajon**, N. Grima, E. Portela, J.-M. Molines, T. Penduff, Three-dimensional dispersion of neutral "plastic" particles in a global ocean model, *Frontiers in Analytical Science*, 2022.

I am a highly motivated scientist with a strong background in physics, eager to apply my knowledge and experience to the greater good.

STRENGTHS

adaptability teamwork curiosity

Python UNIX Matlab $\LaTeX$ Git
Xarray NumPy Pandas SciPy PyTorch

LANGUAGES

French
English
Spanish



CERTIFICATES

- Machine Learning for Oceanography, Sorbonne University
- AI for Global Goals - Finance tracks, Oxford University
- Climate Change AI Summer School

EDUCATION

Engineer - double degree:
Fluid Mechanics, Energy and Environment & Ocean, Atmosphere and Climate sciences (M.Sc.)

École nationale supérieure d'électrotechnique, d'électronique, d'informatique, d'hydraulique et des télécommunications - École Nationale de la Météorologie

09/2017 – 09/2021 France

International M.Sc. for Ocean Engineering

Centrale Nantes

09/2019 – 09/2020 France

CONTRIBUTIONS

- Open source: Argopy, CanyonbPy, PyCantphi
- Shifters association

HOBBIES

- Surf, yoga
- Volley-ball (shared administration), handball (team captain)