

Post-doctoral position: Basin-scale spatio/temporal modes of physical variability of the Atlantic Ocean, with a focus on marine heatwaves

The EU Horizon 2020 iAtlantic (<https://www.iatlantic.eu/>) and Belmont Forum EXEBUS (<http://exebus.org>) Programmes are seeking an experienced post-doctoral scientist to undertake a marine heatwave (MHW) analysis of the Atlantic Ocean. The successful candidate will have a PhD in Physical Oceanography, have experience analysing ocean general circulation model (OGCM) output, and be skilled in handling big data on High-Performance Computing (HPC) systems. The candidate will interact with a team at the University of Edinburgh and GEOMAR.

Background:

Our approach uses VIKING19 and INALT20 global OGCM output. These models are based on the European NEMO model and have eddy-rich nests in the Atlantic and around South Africa. With resolutions of $1/10^\circ$ (VIKING10X, INALT10X) to $1/20^\circ$ (VIKING20X, INALT20), both resolve mesoscale eddies from the tropics to subpolar latitudes. Both configurations have been run in hindcast mode to simulate the past 60 years under realistic forcing, allowing detailed comparisons with instrumental observations. We have also forecast the following 50 years by coupling to an active atmosphere, i.e. in runs with global warming scenarios.

This project concern the basin-scale spatio-temporal modes of physical variability in the Atlantic Ocean. To date, extreme events such as MHWs have predominantly been assessed on the ocean surface and not in its interior. Working with the Work Package Leads, you will significantly advance the state-of-the-art in this domain using a bespoke algorithm to statistically and objectively identify and quantify MHWs. Using this approach, you will assess standard INALT20 model outputs for the frequency, duration, magnitude and rates of change of MHWs. We will use these findings to inform iAtlantic's regional ecosystem assessments.

About the position:

The host institution in South Africa is the University of the Western Cape, and the contract duration is ten months (i.e., work to be completed by the end of October 2023). The position carries a value of R280,000 to R320,000, depending on experience.

Don't hesitate to get in touch with the Principal Investigator, A/Prof. AJ Smit (ajsmit@uwc.ac.za), for any further information.

Applicants must submit:

1. A detailed CV listing all relevant experience, including publications and conference attendance.
2. The names and contact details of three referees.
3. A letter of motivation. Please direct all enquiries to A/Prof AJ Smit (ajsmit@uwc.ac.za).

The deadline for this application is 15 December 2022.