

Open position

NEMO ocean modeller

NOW Systems is looking for new talent on ocean modelling. We look for a NEMO ocean modeler for a permanent full-time position to contribute to the evolution of the Copernicus Marine IBI model system.

About the Company:

Nologin Oceanic Weather Systems -NOW Systems- is the environmental branch of Nologin Consulting, a Spanish IT company established in the year 2000 that actively works with companies around the world, helping them on the digital transformation with a complete value proposition, including development and deployment of innovative structural solutions. Nologin's objective is to strengthen its NOW division, specialized in oceanographic services, to make the most of the opportunities related to the exciting Ocean Decade ahead, promoting conservation, protection and sustainable uses of the oceans and their resources.

By having its own entity, as a group company, NOW System will have the advantage of dedicating itself exclusively and essentially to the marine world, while we maintain our affiliation with the Nologin group, which provides us solid support in terms of technology and resources. In this way, NOW Systems has a privileged position to offer comprehensive solutions and digital twin approaches, backed by the experience and IT support necessary to address present and future challenges in the marine environment.

NOW Systems is, as Nologin has been for the last years, an Ocean Service Provider helping to implement technical solutions that support more efficient and sustained activities (and decision-making) for the Blue Economy and delivering scientifically based operational services for an enhanced knowledge of past, present, and future state of the blue and green ocean.

Nologin, through NOW Systems, is a Copernicus Marine Service provider, co-leading (with Mercator Océan International) the Iberia-Biscay-Ireland Monitoring and Forecasting Centre (IBI-MFC), and delivering its operational product and services based on ocean circulation, waves, and biogeochemistry model applications. Furthermore, NOW Systems is contributing to other topics related to the Copernicus Marine Service in the context of other specific contracts (i.e., contributor to the in-situ observational Thematic Assembly Centre, developer of the Copernicus Marine Product Quality Dashboard, provider of Copernicus Marine e-training material, and developer of coastal Pilot service demonstrators).



About the job:

The candidate will initially work in the context of an R&D (Copernicus Marine) Project, focused on the development of a pre-operational monitoring and forecasting system covering the European Atlantic Northwest Shelf region. The Candidate will conduct some research needed to evolve the IBI model system for improving its solution in the North Sea, including studies to upgrade the IBI open boundary condition in the Baltic area. He/she will conduct IBI model sensitivity tests, aimed at testing changes in the IBI eastern Baltic open boundary condition (substituting the global GLO-MFC solution, currently imposed as IBI boundary condition, by a regional one from the Baltic MFC system). The candidate will be responsible of tasks related to ocean modelling, updating the IBI NEMO boundary condition (together with bathymetry changes) and validation of NEMO model runs.

The candidate will have a strong links with the Copernicus Marine regional IBI-Monitoring Forecasting Centre, and specially with its operational Team, headed by NOW-Systems, and will imply collaboration with other IBI-MFC partners (such as MOI, or CESGA -Centro de SuperComputación de Galicia-).

The candidate will be in charge of:

- Improving IBI model solution at the NorthWest Shelf (NWS) – Baltic (BAL) interface, contributing to the enhancement of the seamless transition between Copernicus Marine model products.
- Performing IBI NEMO model sensitivity studies to test changes in IBI eastern Baltic OBC, substituting the GLO-MFC solution (currently imposed as IBI OBC) by a regional BAL-MFC one, and updating the IBI local bathymetry along the boundary and a nearby buffer zone. To this aim, the candidate will design and execute sensitivity test runs (both baroclinic and barotropic ones) with an IBI NEMO application, analogous to the one used by the IBI-MFC in operations (note: model tests will be based on free runs, not being applied any data assimilation in them).
- Assessing impacts on the IBI solution, with special focus on areas such as the Kattegat/Skagerrak subbasins and the Eastern North Sea (German Bight & Norwegian Coast), performing multi-model assessments and diagnostics using several in-situ and satellite observational data sources. To this aim, the use of different NOW System validation tools will be required, and the selected candidate will collaborate with the NOW System Product Quality Team.
- Collaborating (exchanging data and expertise) with other on-going related R&D projects or coastal downstream services nested into the IBI model solutions.
- Producing technical reports on the model developments and experiments carried out, valorising the scientific results obtained (by participating in the drafting of scientific papers, and by presenting results in scientific and technical workshops).

Qualifications, experience, and assets to have:

The ideal candidate has:

- a relevant degree (PhD positively valued) in physics/oceanography/meteorology or other closely related discipline (such as environmental or coastal engineering and marine science)
- experience in ocean modelling (ideally with NEMO model, or with other ocean models such as ROMS, CROCO, etc.)



- experience in assessing ocean model outputs using in-situ or Earth Observation data sources.
- good programming skills (specially with languages such as Fortran, Python and Linux shell scripting).
- gained experience in running (NEMO) ocean models on HPC environments (to be highly valued).

He/she is a rigorous, creative team worker wishing to contribute with ideas to an ambitious international framework of research projects related to the pan-European operational oceanographic Copernicus Marine services.

He/she has good English language skills. His/her fluency in Spanish is also valued.

Finally, he/she has a strong interest in performing R&D activities, closely linked to the evolution of operational forecast services. He/she will have the opportunity to work in a highly multidisciplinary environment, in close collaboration not only with other Nologin (NOW) staff from the IBI-MFC Team, and other coastal services, but also with other ocean modelers and data assimilation researchers linked to the Copernicus Marine Service.

The selected candidate will work with smart-working practices, having good flexibility for schedule and tele-working conditions. Connection with the NOW System's premises (in Madrid or Santiago de Compostela) will be required, so it is needed that the candidate will be based close to one of these locations.

The successful candidate will be recruited by NOW Systems, following its recruitment principles. Remuneration commensurate with qualifications and experience.

Interested candidates are invited to apply on-line, sending cover letter and C.V. through the following application form: **https://nlogin.factorialhr.es/job_posting/nemo-ocean-modeller-36924**.

Closing date is September 30th, 2023.

