



CALL FOR APPLICATIONS



24-month researcher position on seasonal forecast system evolution for the Copernicus Climate Change Service at the National Centre for Meteorological Research (CNRM) Météo-France, Toulouse, France

Applications are invited for a **24-month** position starting from **July 2022**, to work within the climate research group at CNRM (Centre National de Recherches Météorologiques) on the following topic: “Seasonal forecast system evolution and improvement of ocean and sea ice initialization in a coupled framework”.

The deadline for applications is **20 March 2022**.

Scope

The position is funded by the European Union through the C3S (Copernicus Climate Change Service) Programme (<https://climate.copernicus.eu>), implemented by ECMWF (European Centre for Medium-Range Weather Forecasts). Seasonal forecasts are one component of C3S activities (<https://climate.copernicus.eu/seasonal-forecasts>), to which Météo-France contributes in the framework of the C3S2-370 contract “Operational Seasonal Predictions”, funded from August 2021 to July 2025.

One key activity within the contract is the evolution of the Météo-France seasonal forecast system. The current system (System 8) is based on the CNRM-CM coupled model and described in more detail here: <http://www.umr-cnrm.fr/IMG/pdf/system8-technical.pdf>

In the framework of C3S2-370, the next version of the Météo-France seasonal forecast system will be elaborated, building on research activities underway at CNRM. System 9 is currently planned for 2024.

Work description

The successful applicant will contribute to the following tasks:

- 1) Define and evaluate candidate versions of the ocean and sea ice models and settings for System 9 in a seasonal prediction framework. This involves contributing to the uptake of the NEMO4 ocean model (including SI3 sea ice) in collaboration with scientists developing the CNRM coupled model.
- 2) Improve the coupled initialization methodology currently used for System 8 to provide consistent initial conditions for each component of CNRM-CM. More specifically, the applicant will research best initialization strategies for the sea ice component and implement and evaluate these in the seasonal prediction framework. She/he will benefit from interactions with Mercator Ocean International for this task.
- 3) Summarize and communicate results (e.g. conference presentations, internal meetings and contributions to project deliverables and progress reports).
- 4) Contribute to the definition of System 9 model and initialization / ensemble generation strategy based on results from tasks 1) and 2).

Required qualifications

- 1) A PhD in meteorology, oceanography, climate modeling, mathematics, physics or another relevant field is required.
- 2) Experience in use, development and/or implementation of coupled climate models in a HPC environment is a clear asset.
- 3) Experience in sea ice modeling, initialization of ensemble climate predictions and/or ocean-sea ice-atmosphere coupling will be distinct advantages.
- 4) Proficiency in programming languages for modeling (e.g. Fortran), data analysis (e.g R, Python) and handling of NetCDF format (NCO, CDO) are strongly recommended.
- 5) English proficiency is mandatory to read and write technical documentation, to contribute to project deliverables and to participate in project meetings and workshops.

Practical information

The successful applicant will be contracted by Météo-France and will work in the CNRM research team on seasonal forecasting, based in the Météo-France premises in Toulouse, France. The applicant will work in close collaboration with other researchers in the climate research group.

The opened position will start as soon as possible from July 2022, for a duration of 24 months.

Gross salary (before social security, unemployment and retirement contributions, and income tax) is commensurate to qualifications and experience, and ranges from 3280 to 4025 euros per month. Duration of contract may be adjusted accordingly.

For full consideration, an application letter including a detailed statement of the candidate's motivation for the position, alongside a full curriculum vitae (experience in scientific computing, programming skills and languages) as well as contact details for two referees (names, e-mail and phone) should be sent by e-mail by **20 March 2022** to:

Lauriane Batté (lauriane.batte@meteo.fr) and
Jean-François Guérémy (jean-francois.gueremy@meteo.fr).

Applications will be reviewed after the deadline.

Our email server limits the size of attachments to ~5 Mo so please take this into account when sending us your application (and use a dropbox e.g WeTransfer if needed) or we may not receive it in due time.