



## CALL FOR APPLICATIONS

### **30-month research scientist position at Météo-France (Toulouse, France) in seasonal forecasting for the Copernicus Climate Change Service**

Applications are invited for a **30-month** position starting in **April 2022**, to work in collaboration with the climate research group at CNRM (Centre National de Recherches Météorologiques) and the Météo-France Climate Services Department, DCSC (Direction de la Climatologie et des Services Climatiques), on the following topic:

“Development of innovative products and user support in seasonal forecasting for the Copernicus Climate Change Service”.

The deadline for applications is **31 December 2021**.

#### **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 (from August 2021 to July 2025).

Identifying the available signals and the level of predictability in real-time numerical seasonal forecasts is a key stage for the development of user-oriented applications. The planned work is to contribute to two core activities of the C3S2-370 contract, that are both related to downstream use of seasonal forecasts. One is dedicated to user support tasks, while another is focused on the development of innovative products to improve the interpretation of ensemble forecasts and their communication through bulletins.

#### **Work description**

The research scientist will contribute to the following tasks:

- 1) Develop a process to extract consistent scenarios of seasonal forecasts from the ensemble prediction through the clustering of ensemble members. The aim is to go beyond the ensemble mean and propose a range of scenarios for temperature, precipitation and circulation anomalies over Europe.
- 2) Provide a recommendation on the appropriate ensemble size for seasonal reforecasts on the basis of objective scores and user-oriented products such as the above-mentioned scenarios. For this purpose, an analysis of the benefits of the increase in reforecast ensemble size of the current Météo-France system (System 8) will be carried out.
- 3) Develop an *a priori* confidence index of the forecast climate anomalies over Europe, to be provided in real-time along with the forecast for the next season.

- 4) Design two technical guides for end-users on the use of model and multi-model products in seasonal forecasting.
- 5) Alongside Météo-France colleagues, address and solve relevant user queries on seasonal prediction upon request by ECMWF.

### **Required qualifications**

- 1) A Master of Science degree or equivalent is required.
- 2) An experience in programming languages for data analysis (e.g R, Python or Fortran) and use of NetCDF format (NCO, CDO) is strongly recommended.
- 3) English proficiency is mandatory to read and write technical documentation, to contribute to project deliverables and to participate in project meetings and workshops.
- 4) Experience in climate forecasting and/or climate services and a strong background in statistics will be distinct advantages.

### **Practical information**

The successful applicant will be contracted by Météo-France and will work in the CNRM research team on seasonal forecasting, in close collaboration with the Météo-France operational Climate Services Department, DCSC (Direction de la Climatologie et des Services Climatiques). Both services are based in the Météo-France premises in Toulouse, France.

The opened position will start as soon as possible from April 2022, for a maximum duration of 30 months.

Gross salary (before social security, unemployment and retirement contributions, and income tax) is commensurate to qualifications and experience, and ranges from 2552 to 3890 euros per month. Duration of contract will 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 **31 December 2021** to: Damien Specq ([damien.specq@meteo.fr](mailto:damien.specq@meteo.fr)), Christian Viel ([christian.viel@meteo.fr](mailto:christian.viel@meteo.fr)) and Lauriane Batté ([lauriane.batte@meteo.fr](mailto:lauriane.batte@meteo.fr)).

*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.*