Open position in probabilistic prediction at Météo-France (CNRM)

Position

Engineer for the design of seamless multivariate ensemble weather forecasts for applications to renewable energy forecasting

Application deadline: 15 January 2020
Duration of contract : 18 months
Expected starting date : April 2020

Context

The Horizon 2020 Smart4RES project aims to bring substantial performance improvements to the whole model and value chain in renewable energy (RES) forecasting. For that purpose, the performance of Numerical Weather Prediction (NWP) models regarding variables that are needed as input to predict RES production (in particular surface solar irradiance, wind speed and direction around 100 m) is to be improved.

In order to take into account the uncertainty of weather forecasts, probabilistic predictions are now commonly used. They rely on the implementation of Ensemble Prediction Systems (EPSs) that provide an ensemble of perturbed forecasts. Météo-France has been running operationally two ensemble systems : the regional Arome-EPS for the very short range (2 days) and the global Arpège-EPS for short to medium ranges (4 days).

For the Smart4RES project, Météo-France will provide enhanced ensemble forecasts, using very high spatial resolution, smaller optimal temporal storage resolution and more members in order to optimally cover the need of RES actors.

Objective

The objective of the open position is to design seamless multivariate weather forecasts for solar and wind applications from the global and limited area ensemble systems used at Météo-France, in order to cover time ranges from very short up to medium-range forecasts. To answer this problem the successfull candidate will examine different approaches to properly relate Arpège-EPS members to Arome-EPS members over the lead times 48-96 h.

Required skills

- A master of Science or Engineer degree in atmospheric sciences, applied mathematics or any related fields
- Excellent knowledge in atmospheric numerical modelling, experience in ensemble modelling techniques
- Knowledge of data science techniques would be appreciated
- Experience with processing large volumes of data
- Experience of working in a Linux-based environment
- Excellent coding skills with an in-depth knowledge of Python and R programming is essential
- Aptitude for scientific work, written and oral communication in English, meetings abroad possible
- A scientific curiosity, autonomy, rigor in the interpretation of the results are necessary

Practical aspects

The candidate will be based at the CNRM laboratory in Toulouse (France).
The gross monthly salary will be around 3000 euros. This includes French social security (health insurance).

Application procedure

Interested candidates should send the following documents by e-mail to laure.raynaud@meteo.fr :
- A curriculum Vitae detailing experience and technical skills
- Motivation letter explaining interests for the job
- Recommendation letters will be appreciated