



Centre National de Recherches Météorologiques

CALL FOR APPLICATION ENGINEER – RESEARCHER, F/M (12 months)

The French National Meteorological Research Centre (CNRM, METEO-FRANCE and CNRS) recruits an engineer / a researcher in data assimilation.

Localisation: Météo-France, CNRM, Toulouse

Supervisors: Dr Vincent Guidard and Dr Nadia Fourrié

Context:

The Numerical Weather Prediction (NWP) Group of CNRM is in charge of research aiming at improving Météo-France NWP models and improving the observation usage in the data assimilation system which provides initial states to NWP models. The convective-scale model AROME-France has its own data assimilation system which is based on a 3 dimensional variational method. The information coming from satellite instruments is mainly ingested as top-of-atmosphere brightness temperatures (level 1 product). One aim of the AROME-France model is the forecast of high-impact events, like high precipitating events or fog. Thus most of its vertical levels are describing the troposphere and the model top is around 10hPa, which prevents the proper simulation of a large amount of the top-of-atmosphere brightness temperatures and their assimilation.

Eumetsat is the European agency in charge of the exploitation of operational meteorological satellites, among which MetOp polar-orbiting satellites which contain the IASI (Infrared Atmospheric Sounding Interferometer) instrument and microwave sounders. In addition to generation and dissemination of level 1 products, Eumetsat has developed an algorithm to retrieve temperature and humidity as a combination of IASI and microwave sounders on board MetOp; such profiles are called level 2 products and are not assimilated in operational NWP models at Météo-France. CNRM is in charge of a study to assimilate these level 2 products in AROME-France in replacement of level 1 products.

Summary of the role:

The successful candidate will carry out numerical experiments on Météo-France supercomputers to assess the assimilation of level 2 products in replacement of level 1 products in AROME-France. The evaluation will include objective scores over long time periods and case studies to be defined (high precipitating events for instance).

After these first evaluations, optimised versions of the assimilation of the level 2 products will be proposed by the candidate and the team. A new series of numerical experiments will be then carried out and evaluated.

Technical and scientific reports are to be written by the candidate (in English) and milestone meetings will occur with Eumetsat including oral presentations (in English).

The candidate will contribute to a scientific article and presentations at international conferences.

Required skills and experience:

Strong skills in Linux, Unix, Fortran 90.

Good knowledge of data assimilation (in particular in the frame of NWP).

Good knowledge of satellite passive measurement

Good interpersonal skills

Excellent knowledge of English or French and a good working knowledge of the other language.

Qualification

Engineer or master degree

Salary

According to Météo-France grid, and upon qualification and experience, the net monthly salary will range from 2000 € to 3200 €.

The applicants should send the listed documents by e-mail to vincent.guidard@meteo.fr not later than **20 December 2017**

- a curriculum vitae, which details the scientific activities
- an application letter, including a detailed statement of research interest
- the names, telephone and email address of 2 referees

The applicants will be informed of the decision before **8 January 2018**.

The position will start around the beginning of **March 2018**.