



**Centre National de Recherches Météorologiques**

## **CALL FOR APPLICATION : ENGINEER POSITION (18 months)**

The Numerical Weather Prediction group of CNRM-GAME (Météo-France and CNRS) is seeking an engineer to work on the simulation and the assimilation of infrared satellite data.

Localisation: Météo-France, CNRM-GAME, Toulouse  
Supervisor: Dr Vincent Guidard and Dr Nadia Fourrié

### **Context:**

The French space agency (CNES) develops a program named IASI-NG to propose a new infrared passive sounder, which would have enhanced radiometric noise and spectral resolution, compared to IASI. IASI-NG will measure at 16921 wavelengths (or channels) in each sounding pixel. This new sensor will fly on board a series of European polar-orbiting satellites from 2020 for 20 years. IASI-NG characteristics will lead to huge improvements in the detection and retrieval of numerous chemical species, aerosols and will notably improve the retrievals of thermodynamic profiles. Among the hyperspectral infrared sounder users, three communities have gathered to get prepared to the use of IASI-NG: numerical weather prediction, atmospheric composition and climate monitoring.

The engineer will work in the Numerical Weather Prediction (NWP) group of CNRM-GAME, which is in charge of any research aiming at improving Météo-France NWP models. Observations have already been simulated for IASI-NG in the lab and provided to the three communities. They will be used in the activities listed below.

### **Activities:**

In order to quantify IASI-NG benefits for the NWP community, the framework of observation system simulation experiments (OSSEs) will be used to estimate the benefits of IASI-NG. The incumbent will:

1- select the most informative channels for NWP (over sea, clear sky conditions); evaluate the subsequent atmospheric profiles retrieved using a 1-D variational technique.

2- compare profiles retrieved from IASI-NG to those retrieved from IASI data.

3- simulate new IASI-NG datasets in Météo-France operational NWP models (global model ARPEGE and convective scale model AROME), based on the aforementioned channel selection; then evaluate the assimilation of these data and compare the results to those obtained with IASI data.

These activities will lead to scientific publications written by the incumbent and oral presentation in conferences.

**Required qualifications:**

- Strong skills in Linux, Unix, Fortran 90.
- Good knowledge of data assimilation (in particular in the frame of numerical weather prediction).
- Good knowledge of the radiative transfer and infrared passive measurement
- Good interpersonal skills
- Excellent knowledge of English or French and a good working knowledge of the other language.

**Required qualification:**

Engineer or master degree.

**Salary**

According to the CNRS grid, and upon qualification and experience, the net monthly salary will range from 1500 € to 1800 €.

The applicants should send the listed documents by e-mail to [vincent.guidard@meteo.fr](mailto:vincent.guidard@meteo.fr)

**not later than April the 30th, 2015**

- 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 the **end of May 2015**. The position will start around the beginning of **September 2015**.