

## Vacancy Notice

### **Research Fellowship on the preparation of the assimilation of IRS/MTG in a convective-scale model**

EUMETSAT is Europe's meteorological satellite agency. Its role is to establish and operate meteorological satellites to monitor the weather and climate from space - 24 hours a day, 365 days a year. This information is supplied to the National Meteorological Services of the organisation's Member States in Europe, as well as other users worldwide.

EUMETSAT also operates several Copernicus missions on behalf of the European Union and provide data services to the Copernicus marine and atmospheric services and their users.

As an intergovernmental European Organisation, EUMETSAT has 30 Member States (Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, The Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom).

EUMETSAT is now inviting applications from suitably qualified scientists from its Member States for a Research Fellowship.

- POST:** Research Fellowship
- LOCATION:** METEO-FRANCE – CNRM,  
42 Avenue G. Coriolis  
31057 TOULOUSE CEDEX 01  
France
- DURATION:** The fellowship is offered for one year, with possibility of extension for up to two additional years.
- AREA OF RESEARCH:** The Research Fellow will join the Observation Team of the Numerical Weather Prediction (NWP) research group at CNRM (Toulouse). He/she will work alongside CNRM scientists taking active part in research activities to assimilate satellite data into the Météo-France weather forecast model at convective scale.

The Fellow's work will be directed towards the preparation of the assimilation of radiances from the IRS (Infra-Red Sounder) instrument onboard the MTG (Meteosat Third Generation).

Regional Numerical Weather Prediction (NWP) systems are evolving toward cloud resolving scales with both high vertical and horizontal resolutions (e.g. order of 1 km for the horizontal resolution of the AROME model operational at Météo-France over Western Europe). This calls for fine scale and frequent observations to constrain these model forecasts. The IRS instrument is likely to partly address these new needs with 1700 channels provided with an unprecedented observation frequency allowed by the geostationary orbit.

The main objective of the fellow's work is to prepare the assimilation of IRS in AROME and to evaluate its impact in this convection permitting model. Observing System Simulation Experiments (OSSEs) of IRS radiances will be performed in the non-hydrostatic model AROME since they offer a framework that can lead to the readiness of operational assimilation of such data.

The Research Fellow will undertake the following activities:

- An upgrade of the OSSEs framework to the most recent versions of the AROME model and of the data assimilation system, in terms of model configuration, observing system, and assimilation cycling.
- An evaluation of the most suitable observation operator (e.g. RTTOV, Principal Component based RTTOV, HT-FRTC) including the choice of apodization functions that will affect the effective spectral resolution of the measurements and the observation errors.
- A channel selection in order to get accurate information on temperature, humidity and also on clouds and surface properties. This is generally achieved with one dimensional studies based on information content or physical properties of the channels.
- A set of OSSEs with the exploitation of the results in terms of analysis and forecast scores.
- A valorisation of the work in terms of documentation, presentations to conferences and scientific publications

**QUALIFICATIONS / SKILLS:** The Fellow for the tasks should have a University degree in Meteorology or equivalent and relevant research experience, with particular skills in satellite data analysis and/or data assimilation schemes.

Good knowledge of scientific programming (mainly Fortran, UNIX shell script languages, Python, C/C++) and experience with HPC systems are significant assets.

Experience in working with large data sets applying statistical methods is desirable.

Strong interpersonal and team working skills are required, along with strengths in computer literacy, scientific analysis, synthesis and presentation.

Fluency in either English or French is required, together with a good working knowledge of the other language.

**GRADE & REMUNERATION:** The remuneration depends upon qualification and experience according to Météo-France standards. In addition, approved travel costs are reimbursed.

**CLOSING DATE:** **07 October 2018**  
Interviews are tentatively scheduled for week 45/2018.

**Applications in English or French should be sent via our online form (attaching curriculum vitae and covering letter quoting Reference VN(18)59) at**

**[www.eumetsat.int](http://www.eumetsat.int)**

**Please note that only nationals of EUMETSAT Member States may apply and that applications will not be returned.**