VN 25/50 Research Fellowship on Microwave Radiance Assimilation for Numerical Weather Prediction (ECMWF)

This exciting role is based at the European Centre for Medium-Range Weather Forecasts (ECMWF) in Reading, United Kingdom, and aimed at the enhanced exploitation of microwave imager observations from polar-orbiting satellites for operational weather forecasting. Microwave imagers provide a wealth of information, such as on humidity, clouds and precipitation in the atmosphere, as well as sea ice, snow, soil moisture and temperature at the surface. The successful candidate will further advance the use of satellite radiances from microwave imagers in the context of ECMWF's coupled Earth System data assimilation system. This will be done through better use of clear, cloud and precipitation information ("all-sky assimilation") or surface variables like snow ("all-surface assimilation") with an increasing emphasis on machine learning. The Fellow will also play an important role in the early exploitation of the new Microwave Imager (MWI) and the Ice Cloud Imager (ICI) on-board EUMETSAT's Second Generation polar system. They will join (and be supported by) an experienced team in the Earth System Assimilation Section of the Research Department at ECMWF, working at the forefront of the use of satellite data for Numerical Weather Prediction. These EUMETSAT fellowships aim to develop the next generation of scientists in earth observation, with many previous fellows having gone on to senior roles at ECMWF, EUMETSAT and similar organisations.

ECMWF is a world leader in Numerical Weather Predictions providing high-quality data for weather forecasts and environmental monitoring. As an intergovernmental organisation, we collaborate internationally to serve our members and the wider community with global weather predictions, data and training activities that are critical to contribute to safe and thriving societies.

The success of our activities depends on the funding and partnerships of the 35 Member and Co-operating States who provide the support and direction of our work. Our talented staff together with the international scientific community, and our powerful supercomputing capabilities, are the core of a 24/7

LOCATION
European Centre for Medium-Range Weather Forecasts, Reading, United Kingdom

QUALIFICATIONS
Good university degree in Physics, Maths, Meteorology or equivalent and relevant research experience, ideally including PhD or equivalent study.

LANGUAGES
Candidates must be able to work effectively in English and a good knowledge of one of the ECMWF's other working languages (French or German) is desirable but not essential.

DEADLINE
21 September 2025,

with interviews in 1st half of October

research and operational centre with a focus on medium and long-range predictions. We also hold one of the largest meteorological data archives in the world.

ECMWF is a multi-site organisation, with its headquarters in Reading, UK, a data centre in Bologna, Italy, and a large presence in Bonn, Germany, as a central location for our EU-related activities. ECMWF is internationally recognised as the voice of expertise in Numerical Weather Predictions for forecasts and climate science.

Duties

The fellowship activities will involve the following topics:

- General enhancement of the assimilation of microwave imager radiances in the ECMWF system, including the refined treatment of uncertainties, data sampling, and observation operator developments;
- Research regarding the extended use of imager radiances in challenging conditions, such as enhancements to the all-sky use of radiances (ie in clear, cloudy, and rainy conditions), or better exploitation of surface-related information (e.g., snow). Developments will be based on a mix of physical and machine learning techniques;
- Evaluation of radiance products from new satellites, including contribution to the exploitation of MWI and ICI on EPS-SG to be launched next year;
- Real-time monitoring and assessment of the quality of radiance products from a range of microwave imagers (AMSR2, GMI, etc.) in the operational ECMWF assimilation system; updates of the assimilation of radiance observations in line with operational system changes.

Skills and Experience

The Fellow should have a good university degree in Physics, Maths, Meteorology or equivalent and relevant post-graduate research experience, ideally including a PhD or equivalent study. Further experience in satellite data analysis, radiative transfer, data assimilation and/or machine

learning is desirable.

Strong computing skills are essential, as the job will involve (a) understanding and modifying the forecasting system, which is written in a mix of Fortran-90, C++, shell and Python scripts, and (b) making statistical analyses and scientific figures using tools like Python.

The role requires strengths in:

- Scientific analysis, synthesis and presentation, demonstrated, for instance, by scientific or technical publications, conference talks or equivalent.
- Effective time management, self motivation and independent working.
- Interpersonal skills and team working.

Candidates must be able to work effectively in English and a good knowledge of one of the ECMWF's other working languages (French or German) is desirable but not essential.

Employment Conditions

The Fellowship is for a maximum period of five years. The initial contract offered is for one-year, with two extensions of two years each thereafter depending on performance. The start date is expected to be as soon as possible.

The role is expected to be based at the ECMWF Headquarters in Reading, Berkshire, United Kingdom. The successful applicant and members of their family forming part of their household will be exempt from immigration restrictions.

The successful candidate will be recruited at the A2 grade, according to the scales of the Co-ordinated Organisations and the annual basic salary will be **£73,094 net of tax**. This position is assigned to the employment category **STF-PS** as defined in the Staff Regulations of ECMWF, with the exception of the removal expenditure, which will be reimbursed within the agreed ceiling laid down by EUMETSAT.

Full details of salary scales and allowances are available on the ECMWF website at www.ecmwf.int/en/about/jobs, including the ECMWF's Staff Regulations regarding the terms and conditions of employment.

EUMETSAT is committed to providing an equal opportunities work environment for men and women.
Please note that only nationals of EUMETSAT Member States may apply. The EUMETSAT Convention requires that Staff shall be recruited on the basis of their qualifications, account being taken of the international character of EUMETSAT.

About EUMETSAT

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.)

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