VN 21/17 Research Fellowship on Microwave Radiance Assimilation for Numerical Weather Prediction

The Research Fellow will join the Earth System Assimilation Section in the Research Department at ECMWF where they will be a member of the Microwave Team. They will further advance the exploitation of satellite observations from microwave instruments in clear, cloudy and precipitating areas ("all-sky assimilation"). Radiances from microwave imagers provide direct information on water vapour, clouds and precipitation in the atmosphere, and indirect information on wind, all of which are used to improve ECMWF's analyses and global forecasts through 4D-variational assimilation. The observations are further sensitive to the surface, so as ECMWF develops its Earth-System approach, exploitation of the information on aspects such as snow and sea-ice will become ever more important. The Fellow will be working as part of the team that pioneered the all-sky assimilation of satellite radiances and continues to push scientific boundaries in the use of satellite observations.

ECMWF is both a research institute and a 24/7 operational service, producing numerical weather predictions for its Member and Co-operating States as well as users around the world. ECMWF carries out scientific and technical research and analysis aiming to continuously improve global prediction. ECMWF processes in its high-performance computing facility large amounts of observations to provide up-to-date global analyses and climate reanalyses of the atmosphere, ocean and land surface. For details, see www.ecmwf.int/

ECMWF currently operates from its headquarters, located in Reading, UK, and its data centre located in Bologna, Italy. Over the course of 2021, ECMWF will be opening additional new premises in Bonn, Germany.

Duties

- Responsibility for current and future microwave imagers in the ECMWF
- Research and development targeted at an advanced exploitation

LOCATION

ECMWF, Reading, UK

(exceptionally, Bonn, Germany may be considered)

QUALIFICATIONS

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

LANGUAGES

Candidates must be able to work effectively in English, both verbally and written, and some knowledge of one of ECMWF's other working languages (French or German) would be desirable but is not essential.

DEADLINE

19 April 2021

system: Of particular importance will be preparation for the use of data from the Microwave Imager (MWI), a new instrument expected to be launched in 2023 on EUMETSAT's second-generation polar satellite system (EPS-SG). The Fellow will also carry out real-time monitoring and assessment of the quality of the observations and will update the operational forecasting system accordingly.

of MW imagers in the ECMWF system: This will be confronting some key challenges in the field of satellite data assimilation, including: exploiting information on land surfaces, snow and sea-ice; improving data assimilation methodologies, such as dealing with correlated observation error; improving radiative transfer modelling in cloud and precipitation; using the observations to improve the macro- and micro-physical description of cloud processes in the forecast model.

Skills and Experience

- The Fellow should have a good university degree in Physics, Maths and Meteorology or equivalent and relevant post-graduate research experience, ideally including a PhD or equivalent study. Further experience in satellite data analysis, data assimilation and/or radiative transfer is highly desirable;
- Good interpersonal and team working skills are required, along with strengths in scientific analysis, synthesis and presentation;
- Strong computing skills are essential, as the job will involve (a) understanding and modifying the forecasting system, which is mainly written in Fortran-90 and Unix scripts, and (b) making statistical analyses and scientific figures using tools like Python, IDL or Metview;
- 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) would be desirable but not essential.

Employment Conditions

The initial contract will be of 4 years' duration, with subsequent 5 year contracts being awarded thereafter, subject to individual performance and organisation requirements. There is no limit to the amount of follow-up contracts a staff member can receive up to the EUMETSAT retirement

age of 63 and there are certainly opportunities to establish a long career perspective at EUMETSAT.
This post is graded A2/A4 on the EUMETSAT salary scales. The minimum basic salary for this post is EURO 5,363 per month (net of internal tax but excluding pension contribution and insurances) which may be negotiable on the basis of skills and experience. The salary scale provides for increments on the anniversary of taking up employment, and scales are reviewed by the EUMETSAT Council with effect from 1 January each year. In addition to basic salary, EUMETSAT offers attractive benefits. Further information, including salary details, is available on the EUMETSAT web site.

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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