

Senior Scientist – Radiative Transfer for Satellite Data Assimilation

1. Position information

Vacancy No.: VN17-02	Department: Research
Grade: A3	Section: Earth System Assimilation
Job Ref. No.: STF-C/17-02	Reports to: Section Head
Publication Date: 17 January 2017	Closing Date: 2 March 2017

2. About ECMWF

ECMWF is both a research institute and a 24/7 operational service, producing and disseminating numerical weather predictions to its Member States. ECMWF carries out scientific and technical research directed to the improvement of its forecasts, collects and processes large amounts of observations, and manages a long-term archive of meteorological data. Satellite and in situ observations provide the information for up-to-date global analyses and climate reanalyses of the atmosphere, ocean and land surface.

For details, see www.ecmwf.int/.

3. Summary of the role

This position is in the Earth System Assimilation Section (ESAS) of the Research Department. The successful candidate will perform scientific and technical research targeted towards the development of fast and accurate radiative transfer models to support the assimilation of satellite observations for Numerical Weather Prediction (NWP), Atmospheric Composition (AC) and climate reanalysis (CRA).

He or she will work closely with the observation and data assimilation activities in the Earth System Assimilation section, as well as groups of the Earth System Modelling Section. ECMWF operationally runs a hybrid 4D-Var system for the atmosphere, in which hundreds of millions radiance observations from more than 30 different satellite instruments are assimilated each day.

The RTTOV fast radiative transfer model is currently used to simulate hyper-spectral radiances from model fields of temperature, humidity, gas composition, clouds and aerosols for comparison to the observed values. These computations need to be highly accurate, but also computationally efficient to fit within the time constraints of operational forecast production.

4. Main duties and key responsibilities

- Developing and evaluating improved approaches for radiative transfer modelling in operational data assimilation
- Maintaining and optimising the existing operational radiative transfer model including its technical infrastructure and supporting spectroscopic databases.
- Contributing to the wider development, maintenance and evaluation of the ECMWF assimilation and forecasting system
- Providing support for ECMWF atmospheric composition and reanalysis activities
- Contributing to acquisition of external research resources
- Representing ECMWF's interests and activities at research forums

5. Personal attributes

- Excellent interpersonal and communication skills
- Excellent analytical and problem-solving skills with a proactive approach
- Self-motivated and able to work with minimal supervision
- Dedication and enthusiasm to work with multiple teams
- Ability to work efficiently and complete diverse tasks in a timely manner

6. Qualifications and experience required

Education	An advanced university degree at PhD level or equivalent in oceanography, meteorology or a related subject is required.
Experience	<p>Experience in atmospheric radiative transfer and satellite data assimilation is required.</p> <p>Experience in variational and ensemble data assimilation methods is highly desirable.</p> <p>Experience with developing and contributing to complex shared code is highly desirable.</p> <p>Experience with high-performance computing platforms is desirable.</p>
Knowledge and skills (including language)	<p>Excellent programming skills in a high-level programming language (e.g. Fortran, C++, python) and UNIX scripting is essential.</p> <p>Good knowledge of meteorology and oceanography.</p> <p>Candidates must be able to work effectively in English and interviews will be conducted in English.</p> <p>A good knowledge of one of the Centre's other working languages (French or German) would be an advantage.</p>

7. Other information

Grade remuneration

The successful candidate will be recruited at the **A3** grade, according to the scales of the Co-ordinated Organisations and the annual basic salary will be **£69,700** net of tax. This position is assigned to the employment category STF-C as defined in the Staff Regulations.

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

Starting date: As soon as possible.

Length of contract: Four years with the possibility of a further contract.

Location: The position will be based in the Reading area, in Berkshire, United Kingdom.

8. How to apply

Please apply by completing the online application form available at www.ecmwf.int/en/about/jobs.

ECMWF has an Equal Opportunities Policy and applications from all suitably qualified candidates are welcome.

Staff are usually recruited from among nationals of the following Member States and Co-operating States:

Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, former Yugoslav Republic of Macedonia, France, Hungary, Germany, Greece, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Montenegro, the Netherlands, Norway, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Applicants from other countries may be considered in exceptional cases.