

Senior Scientist & Team Leader - Active Sensing Team

1. Position information

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| Vacancy No.: VN20-07 | Department: Research |
| Grade: A3 | Section: Earth System Assimilation |
| Job Ref. No.: STF-C/20-07 | Reports to: Head of Section |
| Publication Date: 28 February 2020 | Closing Date: 20 April 2020 |

2. About ECMWF

ECMWF is both a research institute and a 24/7 operational service, producing global numerical weather predictions and other data for its Member and Co-operating States and the broader community. ECMWF carries out scientific and technical research to improve its forecasts, runs one of the largest supercomputer facilities in Europe and manages a long-term archive of meteorological data.

For details, see www.ecmwf.int

ECMWF uses its high-performance computing (HPC) facility to produce a time-critical twice-daily global numerical weather forecast. The operational forecasting system and research & development are currently run on two Cray XC-40 clusters totalling over 250,000 Intel Broadwell compute cores each.

3. Summary of the role

Numerical Weather Prediction (NWP) is an initial value problem and ECMWF are and have been for many years world-leading in atmospheric data assimilation. Recently ECMWF recognised the need for an Earth System approach, ensuring that all components of a coupled forecast system are well initialised. In this context, the Earth System Assimilation Section was created, with five teams: data assimilation methodology, coupled assimilation, infrared radiances, microwave radiances and AMVs and the fifth on active sensing and in situ observations. As the Team Leader for the Active Sensing Team, the key areas of responsibility include radio occultation, doppler wind lidar, radar altimeter, scatterometer, all in situ observations (radiosondes, aircraft, also new innovative observation sources such as from the Internet of Things (e.g. mobile phone, cars), high altitude balloons and drones). The successful candidate will ensure that far-sighted research is carried out in the assimilation of these observations and that this research is quickly and successfully moved into operations. Today, there is greater need that earth system aspects are addressed (e.g. ECMWF currently has a project

examining how better to account for ocean currents and atmospheric stability when using scatterometer data in a coupled atmosphere-ocean assimilation system). The team needs substantial acquisition of new and continued funding from Space Agencies and other funding bodies, and as the team leader, they will play a key role in this domain. The role will also involve providing support in the use of these observations in the operational system. There is much collaboration with the other teams and sections within the department and with the Forecast Department who are both responsible for and monitor the operational system.

The Team Leader will divide their time between the role of providing scientific and technical leadership and in team management, as well as continuing to make their own personal R&D contributions, related to assimilation of actively sensed or in-situ observations.

As an experienced scientist with proven leadership ability, the successful candidate will have demonstrated team leadership or involvement with national or international scientific teams. Ideally, the successful candidate will also have a proven track record in delivering world class science, including making contributions to large code systems, comparable in complexity to ECMWF's IFS.

This position sits within the Earth System Assimilation Section at ECMWF and will report to the Head of Section.

4. Main duties and key responsibilities

- Leading the scientific and technical development of the active sensing team.
- Undertaking line management responsibilities for the members of the active sensing team.
- Supporting the Head of Section in writing and subsequently delivering the one year and four-year research plans, and when appropriate longer-term strategy.
- Implementing new observations and modifications to existing observation assimilation within the IFS, with particular attention to new and innovative observations.
- Contributing innovative and world-leading scientific research in the observation assimilation area, in particular for novel observations.
- Acquisition of new, external funding projects and renewal of existing ones.

5. Personal attributes

- Proven leadership skills, both in science and in organisational aspects
- Excellent analytical and problem-solving skills with a proactive approach, together with an interest in identifying, investigating and solving technical challenges.
- Enthusiasm about computers and programming, willingness to learn new algorithms and tools.
- Ability to work in a small team.
- Good interpersonal and communication skills, particularly listening to and respecting the views of others.

6. Qualifications and experience required

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| Education | <p>A university degree, or equivalent, in a discipline related to computer science, meteorology, oceanography, physics, mathematics or engineering is required.</p> <p>A PhD in a related subject is desirable but not essential.</p> <p>Evidence of ability to having undertaken independent research in a related area, equivalent to that demonstrated by a PhD, is essential.</p> |
| Experience | <p>Experience in practical application of data assimilation methods is essential.</p> <p>Recent and relevant experience of leadership with national or international scientific teams or similar is desirable.</p> <p>Familiarity with key meteorological observations, in particular the actively sensed and in situ measurements, is highly desirable.</p> <p>Familiarity with working on complex codes is essential.</p> <p>Experience working in projects and teams governed by tight schedules would be advantageous.</p> |
| Knowledge and skills (including language) | <p>Good knowledge of a high-level programming language such as C++, Fortran is essential. Knowledge of both object-orientated programming and Python would be useful.</p> <p>Ability to work in a Linux-based environment.</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 **£74,764.08** 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: 1 August 2020, or as soon as possible thereafter.

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.

To contact the ECMWF Recruitment Team, please email jobs@ecmwf.int

Please refer to the ECMWF Privacy Statement. For details of how we will handle your personal data for this purpose, see: <https://www.ecmwf.int/en/privacy>.

At ECMWF, we consider an inclusive environment as key for our success. We are dedicated to ensuring a workplace that embraces diversity and provides equal opportunities for all, without distinction as to race, gender, age, marital status, social status, disability, sexual orientation, religion, personality, ethnicity and culture. We value the benefits derived from a diverse workforce and are committed to having staff that reflect the diversity of the countries that are part of our community, in an environment that nurtures equality and inclusion.

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, France, Hungary, Germany, Greece, Iceland, Ireland, Israel, Italy, Latvia, Lithuania, Luxembourg, Montenegro, Morocco, the Netherlands, North Macedonia, Norway, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Staff from other countries may be considered in exceptional cases.