Scientist – Earth System Diagnostics

1. Position information

<table>
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<tr>
<th>Vacancy No.:</th>
<th>VN19-50</th>
<th>Department: Forecast</th>
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<tr>
<td>Grade:</td>
<td>A2</td>
<td>Section: Evaluation</td>
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<tr>
<td>Job Ref. No.:</td>
<td>STF-C/19-50</td>
<td>Reports to: Team Leader - Diagnostics</td>
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<tr>
<td>Publication Date:</td>
<td>29 November 2019</td>
<td>Closing Date: Extended to 10 February 2020</td>
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2. About ECMWF

ECMWF is an inter-governmental organisation supported by 34 Member and Co-operating States. It is both a research institute and a 24/7 operational service, producing and disseminating numerical weather predictions to its Member States and Co-operating. 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/](http://www.ecmwf.int/).

3. Summary of the role

This position is in the Diagnostics team, within the Evaluation Section of the Forecast Department. The Diagnostics team brings dynamical and physical insight to the understanding of forecast performance and model climate. It carries out a range of activities, including numerical experiments and case studies, to identify and investigate model performance issues. The successful candidate will contribute to the development and use of new diagnostic tools to address the increasing complexity of ECMWF’s state-of-the-art Earth system model.

As a core member of the Diagnostics team, the postholder will evaluate the systematic and flow-dependent behaviour of the model to identify key sources of model errors at all lead-times. Important topics for the team to address include the diagnosis of deficiencies in predictions of severe weather (Magnusson, 2019) and regime transitions (Ferranti et al, 2018), and in the representation of physical and observational uncertainties (Rodwell et al. 2018). Understanding the processes involved, including coupling between the different components of ECMWF’s operational forecasting system (atmosphere, ocean, land) is an important aspect of the work.
The successful candidate will contribute to relevant areas of this work depending on their own background experience and expertise. Their work will include in-depth analysis and interpretation of diagnostic results in collaboration with model developers, to aid the continual improvement of ECMWF’s forecasting system. There will also be the opportunity to develop collaborations with external experts in model diagnostics.

With the ability to cover both research and technical aspects of forecast evaluation, they will also provide appropriate diagnostic support for the evaluation of new IFS model cycles in the medium and extended ranges, and for the model climate.

4. Main duties and key responsibilities

- Applying and maintaining diagnostic software and techniques to monitor and understand forecasting system performance
- Performing in-depth diagnostic evaluation including case studies and numerical experimentation to investigate forecast performance issues
- Developing new diagnostic methods with application to the ECMWF forecast system
- Contributing to the scientific evaluation of forecasts and document results in the scientific literature
- Assessing the operational and pre-operational forecasting and assimilation systems from a meteorological point of view and provide relevant feedback to model developers

5. Personal attributes

- Excellent analytical and problem-solving skills, with a proactive approach
- Dedication and enthusiasm to work in a small team, and to promote international collaboration
- Ability to engage with staff from other scientific backgrounds
- Excellent interpersonal and communication skills, listening to and respecting the views of others
- Flexibility, with the ability to adapt to changing priorities and user needs

6. Qualifications and experience required

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<tr>
<th>Education</th>
<th>A university degree, or equivalent, in meteorology or a related subject is required. A PhD or equivalent experience is desirable.</th>
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<tr>
<td>Experience</td>
<td>Experience in working with output from numerical weather prediction (NWP) systems, ideally in NWP diagnostics.</td>
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<td>Programming experience with modern scripting languages, such as Python, in a UNIX computing environment.</td>
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<td>Experience in working with complex software and datasets.</td>
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<td>Knowledge and skills (including language)</td>
<td>Good meteorological knowledge, including Earth system processes relevant for global medium- and extended-range NWP.</td>
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<td>Knowledge of probabilistic Earth system forecasting and predictability concepts.</td>
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<td>Good programming and scripting skills.</td>
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Candidates must be able to work effectively in English and interviews will be conducted in English.

A good knowledge of one of the Centre’s other working languages (French or German) would be an advantage.

7. Other information

Grade remuneration
The successful candidate will be recruited at the A2 grade, according to the scales of the Coordinated Organisations and the annual basic salary will be £59,228.40 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 April 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 ensure 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.

Applications are invited from nationals from ECMWF Member States and Cooperating States, listed below, and all EU Member 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.

Applications from nationals from other countries may be considered in exceptional cases.
References:

