Job Title: Internal Research Fellow in Earth Observation for Earth System Science

Requisition ID **11983** - Posted **12/02/2021**

EUROPEAN SPACE AGENCY

Research Fellowship Opportunity in the Directorate of EO Programmes.

ESA is an equal opportunity employer, committed to achieving diversity within the workforce and creating an inclusive working environment. For this purpose, we welcome applications from all qualified candidates irrespective of gender, sexual orientation, ethnicity, beliefs, age, disability or other characteristics. Applications from women are encouraged.
Post

Post
Internal Research Fellow in Earth Observation for Earth System Science
This post is classified F2.

Location
ESRIN, Frascati, Italy

Our team and mission
You will report to the Head of the Science Section in the Applications Division within the Science, Applications and Climate Department of the Directorate of Earth Observation Programmes. In the execution of the tasks, you will work in close cooperation with other staff from the Directorate of Earth Observation Programmes.

The Applications Division is a dynamic R&D team leading research and development activities, in partnership with European and international industry and academia, with the aim of advancing science, developing novel applications, supporting the growth of industry and contributing to establishing a European ecosystem of exploitation platforms to maximise the impact of European missions for society.

You will be part of the Earth System Science Hub, a new science laboratory in ESA working as a centre for networking and scientific collaboration among world-class researchers in Member States (MS) and worldwide. The Hub will be an integral part of a new strategy to implement the scientific exploitation programme of ESA and will serve as a catalyser for new ideas and scientific breakthroughs in EO and Earth system science.

This facility will bring together young and senior scientists of different disciplines in Earth Observation and Earth system science to work together sharing different expertise and capabilities and undertaking collaborative research in order to promote a community response to the main science challenges of this decade and, in particular, to contribute to the development of a community science solution to the “Digital Twin Earth” vision.

Interested candidates are encouraged to visit the ESA website: www.esa.int

Field(s) of activities/research/learning areas
ESA, together with the scientific community, is actively engaged in a number of scientific developments aimed at advancing Earth observation capabilities and Earth system science and its contribution in responding to the global challenges that society is facing in the onset of this century. In particular, together with international partners and the scientific community ESA aims to:

- advance our observing capacity and the scientific foundations for the next generation of EO space-based methods, algorithms and data products;
- exploit novel EO capacity to advance our basic understanding of the Earth system and the complex interactions among the different components of the Earth system and human activities;
- translate new knowledge and scientific results into actionable solutions for society.

In this context, you will be involved in the scientific activities of the Science Section within one of the following thematic priorities:

The Polar regions its processes and connections to the Earth and climate system with particular focus on major science challenges: e.g., the observation and modelling of Greenland and Antarctica ice sheet dynamics, their hydrological processes and interactions with the atmosphere and the oceans; the Arctic and Antarctic oceans; the Arctic permafrost and methane emissions.

You will also contribute to the coordination and implementation of the activities of the ESA Polar science cluster:

https://eo4society.esa.int/communities/scientists/esa-polar-science-cluster/

Activities will capitalise of the synergistic opportunities offered by the latest advances in EO technology with special attention being given to the Sentinel missions and the Earth Explorers. Of particular interest are the synergistic opportunities offered by the coordination of Cryosat and NASA's IceSat 2 observations.

Land surface processes with a focus on the hydrological and terrestrial carbon cycles at basin, regional and global scales, with particular attention to the development of a new generation of observational products at high resolution characterising complex land surface processes, their sensitivity to climate change and their interactions with human activities (e.g., agriculture, forestry, energy and water consumption).

Activities will focus particularly on the exploration and exploitation of the novel capabilities and increasing synergistic potential offered by the latest EO satellite systems (e.g., Copernicus Sentinel series of the European Copernicus Programme, ESA Earth Explorers, meteorological missions, novel national and commercial missions) complemented with field measurements and high resolution land surface models.

You will also contribute to the coordination and implementation of the activities of the ESA science clusters in the above domains: e.g. :

https://eo4society.esa.int/communities/scientists/esa-polar-science-cluster/

Field(s) of activities/research/learning areas

You shall indicate in the proposal the preferred theme. You will be involved in different activities including:

1. **Undertaking internal research aimed at addressing major observational gaps and scientific priorities in the above domains** enhancing our capacity to observe and better understand the complex processes governing the Earth and climate system including feedback with human activities and ecosystems and contributing to the development of a solid scientific basis for Digital Twin Earth.

2. **Supporting the definition, technical supervision and coordination of scientific exploitation projects** carried out by external teams of experts and scientists, addressing the exploration and exploitation of the novel and increasingly synergistic potential offered by the latest EO satellite systems and contributing to advance Earth system science in the above domains.

3. **Supporting ESA's interface and dialogue with the scientific communities**, including supporting the organisation of ESA workshops and conferences, training, education and outreach actions and continuous dialogue with international science groups such as WCRP or Future Earth.

Technical competencies

Knowledge relevant to the field of research
Research/publication record
Ability to conduct research autonomously
Breadth of exposure coming from past and/or current research/activities
General interest in space and space research
Ability to gather and share relevant information

Behavioural competencies

Innovation & Creativity
Continuous Learning
Communication
Relationship Management
Self Motivation
Problem Solving
Cross-Cultural Sensitivity

Education

Applicants should have recently completed, or be close to completing a PhD in a related technical or scientific discipline. Preference will be given to applications submitted by candidates within five years of receiving their PhD.

In particular for this position, the following is required: PhD or equivalent qualification in physics, engineering or Earth system science with research experience and peer-reviewed publications in relevant topics for the fields of research proposed.

Additional requirements

You should also have:

- Experience in research based on the use of relevant satellite measurements;
- Science software development experience and programming skills;
- Good analytical and communication skills and an ability to work in a multicultural environment in an autonomous manner.

Additional experience in modelling will be an asset.

The working languages of the Agency are English and French. A good knowledge of one of these is required. Knowledge of another Member State language would be an asset.

Other information

For behavioural competencies expected from ESA staff in general, please refer to the ESA Competency Framework.

The Agency may require applicants to undergo selection tests.

The closing date for applications is 12 March 2021.

In addition to your CV and your motivation letter, please add your proposal of no more than 5 pages outlining your proposed research in the "additional documents" field of the "application information" section.
At the Agency we value diversity and we welcome people with disabilities. Whenever possible, we seek to accommodate individuals with disabilities by providing the necessary support at the workplace. The Human Resources Department can also provide assistance during the recruitment process. If you would like to discuss this further please contact us at contact.human.resources@esa.int.

Please note that applications are only considered from nationals of one of the following States: Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Romania, Spain, Sweden, Switzerland, and the United Kingdom. Nationals from Latvia and Slovenia, as Associate Member States, or Canada as a Cooperating State, can apply as well as those from Bulgaria, Cyprus, Lithuania and Slovakia as European Cooperating States (ECS).
Priority will first be given to candidates from under-represented Member States.

In accordance with the European Space Agency’s security procedures and as part of the selection process, successful candidates will be required to undergo basic screening before appointment