Job Title: Internal Research Fellow (PostDoc) in Earth Observation Exponential Technologies

Req ID **2341** - Posted **02/11/2017**

EUROPEAN SPACE AGENCY

Research Fellowship Opportunity in the Directorate of Earth Observation Programmes.

ESA is an equal opportunity employer, committed to achieving diversity within the workforce and creating an inclusive working environment. Applications from women are encouraged.

Post
Internal Research Fellow (PostDoc) in Earth Observation Exponential Technologies
This post is classified F2 on the Coordinated Organisations' salary scale.

Location
ESRIN, Frascati, Italy

Description
As Φ-lab Research Fellow, you will be part of a dynamic team exploring how exponential advances in digital and sensor technologies are shaping the future of Earth Observation (EO). The research team will be operating within the framework of the newly created Φ-lab at ESRIN, which aims to identify, support and scale bold innovative EO solutions addressing societal and technical challenges, by capitalizing on the benefits of the Space4.0 revolution.

As part of the Φ-lab team, you will explore the use of new technologies across disciplines to develop innovative research around future EO missions, science, applications, and education. You will be based within the Φ-lab open-space, offering you an inspiring collaborative and design-thinking environment to develop your research alongside a team of innovators, data scientists and researchers passionate about innovation.

ESA may award up to ten of Φ-lab Research Fellowships, based on this opportunity.

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

Field(s) of activities/research
Your research will address one of more of the following multi-disciplinary topics, as applied to EO and geospatial data:
- Artificial Intelligence, Machine Learning, Deep Learning
- Predictive Data Analytics,
- Crowdsourcing, Citizen Science
- Small Sat mission concept, High Altitude Platforms, miniaturised sensors
- Computer Vision, Virtual/Augmented Reality, Digital Story Telling
- Convergence of IoT and observational data
- Blockchain applied to data access, integrity and value-adding

These topics are all linked through a unifying theme of the Φ-lab (i) to advance our understanding of how new technologies will impact the future of EO missions, science, applications and education, and (ii) to accelerate their take up within EO practices at ESA or other user organisations.

Also, to achieve its goal, the Φ-lab aims to foster the development of a vibrant EO open innovation ecosystem through partnership with key organisations leading disruptive innovation. In this context, we encourage you to develop your specific research theme in collaboration with an industrial partner, including for example data-driven startup, space industry or large non-EO corporates interested in the field.

In particular, your activities will be to:

- Carry out research in the one or more of the above themes, bringing the power of these new technologies to EO (e.g. using AI to develop the new generation value chain of EO),
- Help develop an environment for rapid prototyping and testing of new ideas,
- Collaborate with academia and industrial partner(s) to put your research in context, explore and demonstrate its potential for industrial applications,
- Contribute to the EO open innovation ecosystem by developing relationship with innovative partners in public and private sector, support the organisation of bootcamps on specific thematic related to the use of new technologies,
- Publish in peer-review literature,
- Promote/share your results and tools through new digital tools, including social media and Jupyter notebooks, webinars and virtual reality,
- Lead and assist interdisciplinary projects with other Φ-lab members and experts from relevant ESA departments,
- Perform and participate in assessments on new technologies of strategic interest for ESA, and contribute to the Φ-lab research and innovation strategy.

Technical competencies
Knowledge relevant to the field of research
Publication record
Ability to conduct research autonomously
Breadth of exposure coming from past and/or current research
Interest in space and space research

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 completion of 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:

- A degree in relevant scientific disciplines, e.g. engineering, computer science, space science, data science, or equivalent;
- PhD relevant for the specific research themes of interest;
- Proficiency in programming languages, in particular python.

Additional requirements
- In depth knowledge of themes of interest;
- Proven experience leading research, with international recognition, and track record of publications;
- Experience of interactions and networking within the research and user communities, at national and international levels;
- Ability to think outside the box and explore new avenues (e.g. innovator mindset), with natural curiosity and a passion for new subjects and research areas;
- Excellent ability to work co-operatively in a multi-disciplinary team environment and liaise with stakeholders from both industry and academia;
- Demonstrated experience in leading research initiatives and working autonomously.

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.

Specificities
The Research proposals (maximum 5 pages) to be provided will be reviewed and assessed based on the following criteria:

- · Scientific value and innovation,
- · Impact to shape future EO, (including potential partnership),
- · Realism of the proposal, methodology and schedule,
- · Proven track record of the candidate

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 30 November 2017.

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. Candidates are asked to arrange for 3 reference letters, to be sent by the referees themselves, before the closing date to temp.htr@esa.int. Please ensure your name is mentioned in the subject of the e-mail.

If you require support with your application due to a disability, please email 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, the United Kingdom and Canada and Slovenia as well as Bulgaria, Cyprus, Latvia, Lithuania, 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