

Job Title: Internal Research Fellow (PostDoc) on scientific exploitation for the SWARM mission

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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) on scientific exploitation for the SWARM mission

This post is classified F2.

Location

ESRIN, Frascati, Italy

Our team and mission

The postholder will report to the Head of the Science Section in the Data Applications Division within the Science, Applications and Climate Department of the Directorate of Earth Observation Programmes. In the execution of the tasks, the postholder will work in close cooperation with other staff of the Directorate of Earth Observation Programmes.

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

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

Field(s) of activities/research

Overview of the field of research proposed

The Swarm mission is designed to measure the magnetic signals that stem from Earth's core, mantle, crust, oceans, ionosphere and magnetosphere. This will lead to better understanding of the processes that drive Earth's dynamo, which currently appears to be weakening. By studying the complexities of Earth's protective shield, Swarm will provide a clear insight into processes occurring inside the planet. Along with measurements of conditions in the upper atmosphere, a better knowledge of the near-Earth environment and the Sun's influence on the planet can be realised. In particular, launched the 22nd November 2013, Swarm aims at providing an unique view inside Earth to study:

- Core dynamics, geodynamo processes and core-mantle interaction;
- Magnetism of the lithosphere and its geological context;
- 3D electrical conductivity related to mantle composition;
- The weak electric currents related to ocean flow;

As well as to study the Sun's influence on the Earth system by:

- Analysing electric currents in the magnetosphere and ionosphere;
- Understanding the impact of solar wind on the dynamics of the upper atmosphere ;

Due to its very innovative concept and unique data, the full exploitation of Swarm data will require a dedicated effort to explore its full potential from both a scientific and an operational perspective. In this context, **the candidate will be involved in two main activities:**

1. Support the **scientific and technical supervision of science projects**, carried out by external teams of experts and scientists, addressing mainly ionospheric physics (process understanding and characterization, enhancing models), solid earth modelling and the study of the processes and interactions between the ionosphere, the magnetosphere and the lower atmosphere.
2. Carry out a dedicated **research focusing on the scientific exploitation of the Swarm mission** with special focus on fostering new science results from the new Swarm data also in synergy with other datasets.

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

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 must have completed their PhD (or equivalent) studies in Physics, Engineering or Earth Science with research experience and peer-reviewed publications in relevant topics for the fields of research proposed.

Additional requirements

Experience with computing programming will be an asset.

Applicants should have good analytical and communication skills and should be able to work in a multi-cultural environment in an autonomous manner.

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.

Preference will be given to applications submitted by candidates within five years of receiving their PhD.

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 11 June 2018.

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