

CIMA Research Foundation is a non-profit research organization that promotes the study, scientific research, technological development, and higher education in engineering and environmental sciences. It is active in the fields of civil protection, risk reduction, climate change impact, public health, and aquatic and terrestrial ecosystems conservation.

**CIMA Research Foundation** is looking for a motivated **researcher** to join the **Earth Observation (EO)** Department for carrying out both research and operational activities within the context of the project **“Multi-Risk sciEnce for resilientT commUnities undeR a changiNg climate – RETURN - CUP B57G22001180002”** founded by PNRR resources.

The main objective of the EO Department is to carry out both research and operational activities/projects in which different typologies of satellite data (e.g., SAR, optical) are used to support civil protection applications related to flood, wildfire and drought risk. Within this context, the EO Dept. develops and oversees the maintenance of operational processing chains - based on remote sensing and image processing algorithms - aiming at:

- ✓ Mapping flooded areas (also in operational/emergency contexts) and monitoring water bodies extent by means of SAR (e.g., Sentinel 1) and optical (e.g., Sentinel 2) data.
- ✓ Mapping burned areas (also in operational/emergency contexts) and monitoring the vegetation status by means of optical data (e.g., Sentinel 2) to identify critical conditions linked to a higher wildfire and/or drought susceptibility.

These processing chains are implemented at national scale (i.e., Italian) in the IDL/ENVI programming language.

Moreover, the EO Dept. supports all the activities of the different CIMA Research Foundation Departments for which the exploitation and the processing of satellite data can be an added value (e.g., enhancement of hydrological/meteorological models, characterization of urban heat island for developing climate change adaptation strategies).

Within this context, the selected researcher will mainly contribute to the development of the abovementioned processing chains, by undertaking the following activities:

- ❖ Improving the accuracy of the algorithms dealing with the mapping/monitoring of flooded areas, water bodies extent, burned areas and vegetation status.
- ❖ Implementation of the processing chains (or of a simplified version) in an open-source programming language (e.g., Python).
- ❖ Updating the processing chains in order to work, operationally, in different geographical areas (e.g., other states, regions, continents); ii)
- ❖ Updating the processing chains in order to ingest and process, automatically, other satellite data (e.g., Landsat, COSMO SkyMed).



The ideal candidate must have the following characteristics:

- Ph.D. in Earth Observation or related topics, or analogous experience.
- Theoretical knowledge of remote sensing satellite data processing (SAR, Optical multispectral/hyperspectral).
- Experience in exploitation of remote sensing (e.g., ENVI, SNAP) and GIS (e.g., QGIS) software.
- Knowledge and experience in programming language (e.g., Python) useful to process satellite and geospatial data for supporting the activities of the EO Dept.
- Knowledge of English.
- Good publications track record dealing with EO-related topics and strong motivation in publishing the outcomes of the research activities carried out within the EO Dept.
- Availability and willingness to travel (both in Italy and abroad) for commitments related to project needs/meetings and/or to attend scientific conferences.
- Flexibility and coping skills to work also in all the other activities and projects of the EO Dept.

Further desirable assets are:

- Communication skills (spoken, written and presentation) and proactive behavior.
- Knowledge of Italian/Spanish/French.
- Knowledge of IDL programming language.
- Theoretical knowledge and experience in Machine Learning (ML) / Deep Learning (DL) / Artificial Intelligence (AI).

The minimum qualifications required are a degree in Engineering, Physics, Mathematical Sciences, Geological Sciences, or equivalent.

We offer:

- Type of contract proposed: Contratto Collettivo Nazionale Lavoro del comparto Istruzione e Ricerca.
- Level: from V to II
- Duration: Fixed term contract of one year renewable until the end of the project scheduled for November 30, 2025
- Gross annual amount: from 29.240 € to 45.000 €
- **Solid perspective of stabilization after the fixed term contract**
- An interesting job in a young interdisciplinary and fast-growing research foundation.
- The opportunity for professional growth and know-how acquisition.
- The opportunity to work in a motivated and enterprising team.
- State-of-the-art technical facilities.

The candidates, after CV evaluation, will be contacted for an interview. Based on the interview outcomes, a proposal for a position within CIMA will be made to the candidates. The proposed compensation and level will be commensurate with experience: factors such as demonstrated hard and soft skills, level of education, history in the sector, and relevant work experience will all be evaluated.

Interested candidates should submit their CV to the email [ricerca.personale@cimafoundation.org](mailto:ricerca.personale@cimafoundation.org) (cover letter and reference letters can be submitted too) by **15.03.2024**. Specify "Researcher in Earth Observation".

The start of activity is expected in June 2024.

Place of work: Savona

Although the position is based in Savona (Regione Liguria, Italy), the selected candidate will have the opportunity to work most of the time remotely.

Any questions can be directed to Dr. Luca Pulvirenti ([luca.pulvirenti@cimafoundation.org](mailto:luca.pulvirenti@cimafoundation.org)).

**Requirements relating to equal opportunities, diversity and inclusion in the National Recovery and Resilience Plan (NRRP) and in the National Complementary Plan (NCP).**

CIMA Foundation declares to assume the specific obligations of the NRRP in relation to not causing significant damage to the so-called environmental objectives "Do No Significant Harm" (DNSH), pursuant to Article 17 Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020, and, where applicable, to transversal obligations, such as, inter alia, the principle of contributing to the climate and digital objective (so-called "Tagging"), of gender equality ("Gender Equality"), of the protection and enhancement of young people and of overcoming territorial gaps, in compliance with the specific regulations on the matter.

CIMA Foundation, as data controller, pursuant to art. 13 of the GDPR 679/2016, informs you that the data you provide will be managed in compliance with the aforementioned legislation, for the exclusive purpose of recruiting and for a time not exceeding one year from sending. In case of hiring, CIMA Foundation privacy policy will be promptly submitted to you. For any need contact the data protection officer at the email address: [dpo@cimafoundation.org](mailto:dpo@cimafoundation.org)

Savona, 12 February 2024

Il Direttore di Gestione  
Luisa Michela Colla

