

Internship in Remote Sensing and Products Division

Internship title: Remote sensing for wildfires

The main topic of the internship is the analysis of the role of lightnings in the ignition of wildfires in the European area.

The proposed project of analysing lightning-ignited wildfires offers the opportunity to the intern to work on a highly relevant scientific and environmental-societal topic. EUMETSAT is one of the leading producers of operational satellite-based wildfire monitoring products for the European area and is also operating the only space-based lightning detection system over Europe. EFFIS, managed by the JRC Wildfire Team is the only source of harmonized historical wildfire information in Europe. The Wildfire Team at JRC additionally provides deep expertise on the scientific and operational exploitation of this data for integration in monitoring and decision-making support systems. This combination of expertise provides a unique support environment for the intern to achieve significant results.

The main project goals are:

- After compiling suitable datasets of wildfire events and lightning activity, explore and analyse relationships between wildfire events and lightning activity, e.g. by varying spatial and temporal search windows around identified ignitions.
- For observed lightning ignition cases, analyse the characteristics of the lightning activity and cloud properties to identify patterns that could serve as a predictor, optionally including also other data sources.
- Potentially, develop a prototype for a lightning-ignition risk model, e.g. using AI/ML techniques.

Duties

- Review of literature regarding remote sensing-based wildfire monitoring and lightning-induced wildfires.
- Identify suitable datasets of satellite-based (e.g. MTG-FCI) and ground-
- Exploration and analysis of relationships between wildfire (ignitions) and lightning activity.
- Analyse of lightning, cloud properties and other environmental characteristics around



LOCATION

Darmstadt, Germany



QUALIFICATIONS

The internships are open to bachelor and master students with mandatory internship requirements in relevant disciplines such as Remote Sensing, Meteorology, Environmental Science, Data Science.



LANGUAGES

The official languages of EUMETSAT are English and French. It is necessary to be able to work effectively in English.



DEADLINE

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based (e.g. EFFIS and national databases) wildfire events, as well as suitable lightning datasets (e.g. MTG-LI and possibly ground-based lightning detection networks).

- Pre-process, filter and prepare the datasets for further analysis

observed lightning ignitions.

- Optional: development of a prototype for lightning-ignition risk estimation.

Skills and Experience

- Have the ability to work effectively in English;
- Be computer literate;
- Be intrinsically motivated and curious about the internship subject;
- Be able to work independently and collaboratively;
- Have the ability to take the initiative in researching ideas;
- Have the ability to collect, collate, conceptualize and present information clearly.

Additional advantageous requirements:

- Knowledge of EO/remote sensing data;
- Programming skills (Python strongly preferred), experience with Linux environments;
- Knowledge of data analysis/data science techniques;
- Knowledge of AI/ML techniques is beneficial.

Employment Conditions

Length of internship: **3 months**

Anticipated start date: **2027**

The internship will require a non-disclosure agreement and potentially a basic background check for the intern, due to the sensitivity of the provided information.

No salary is paid to interns who are still in studies, however a daily allowance and contribution to travel / accommodation costs may be provided.

Interns may be granted a daily allowance of EUR 25 per day, relocation cost reimbursement of up to EUR 400, and accommodation cost reimbursement of up to EUR 1000 per month.

Interns are responsible for providing their own health and accident insurance and for finding their own accommodation in Darmstadt.

Consideration may also be given if the internship is not a mandatory part of curriculum, for a maximum duration of three months.

EUMETSAT is committed to providing an equal opportunities work environment for men and women.

Please note that only nationals of EUMETSAT Member States may apply. The EUMETSAT Convention requires that Staff shall be recruited on the basis of their qualifications, account being taken of the international character of EUMETSAT.

About EUMETSAT

EUMETSAT is Europe's meteorological satellite agency. Its role is to establish and operate meteorological satellites to monitor the weather and climate from space - 24 hours a day, 365 days a year. This information is supplied to the National Meteorological Services of the organisation's Member States in Europe, as well as other users worldwide.

EUMETSAT also operates several Copernicus missions on behalf of the European Union and provide data services to the Copernicus marine and atmospheric services and their users.

As an intergovernmental European Organisation, EUMETSAT has 30 Member States (Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, The Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.)

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