

# Internship in Remote Sensing and Products Division

## Internship title: Refining Desert BRDF Parameters from Hyperspectral Data Ensembles Using AI and Machine Learning

The Remote Sensing and Products Division is seeking an intern to contribute to an advanced research initiative focused on the retrieval of Bidirectional Reflectance Distribution Function (BRDF) parameters over desert calibration site. These parameters play a critical role in the absolute vicarious calibration of satellite instruments, ensuring the long-term radiometric stability and cross-sensor consistency of Earth observation data.

As an intern you will utilise AI and machine learning techniques to enhance BRDF parameters retrieval from hyperspectral satellite data, including GOME-2 and SCIAMACHY, and apply advanced ML algorithms to correct inconsistencies in existing BRDF estimates, improving robustness across the reflective spectral domain.

## Duties

- Leverage AI and machine learning techniques to refine BRDF parameters from Hyperspectral satellite observations over desert calibration sites (e.g., Libya-4);
- Integrate multi-angle, multi-temporal data from sensors such as GOME-2 and SCIAMACHY to support data-driven model training and evaluation;
- Develop and apply advanced ML models (e.g., neural networks, ensemble regressors) to improve retrieval accuracy and generalization of BRDF estimation;
- Incorporate validation strategies using high-quality reference datasets and radiative transfer simulations to assess model performance.

## 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;



### LOCATION

Darmstadt, Germany



### QUALIFICATIONS

The internships are open to bachelor and master students with mandatory internship requirements in relevant disciplines such as remote sensing, physics, atmospheric science.



### LANGUAGES

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



### DEADLINE

3 November 2025

- Have the ability to collect, collate, conceptualize and present information clearly.

Additional specific requirements:

- Some experience with satellite data processing, especially hyperspectral or multispectral instruments;
- Familiarity with BRDF theory and vicarious calibration principles is an advantage;
- Programming skills in Python, MATLAB, or similar;
- Interest or experience in applying machine learning to Earth observation problems is highly desirable.

## Employment Conditions

Length of internship: **6 months**

Anticipated start date: **Q1-Q2 2026**

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.

As of 1 January 2026, 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.)

