Do you want to harness the power of remote sensing technology and cutting-edge ML/DL algorithms to retrieve accurate and timely information on fractional snow cover in forested mountainous regions? Our team is committed to pushing the boundaries of remote sensing applications, providing you with a stimulating and innovative work environment.

Then consider applying to the Visiting/Associated Scientist Activity :
"**Improving the accuracy of fractional snow cover retrieval over forested mountainous regions using ML and Deep Learning algorithms**" to be funded by the **EUMETSAT H SAF Consortium.**

Research Fields: Snow, Validation, Scientific computing and data processing

Visiting Scientist Proposal Abstract:
Snow is a critical component of the Earth's climate system, and its presence or absence significantly affects regional climate patterns. Forested mountainous areas act as water towers, supplying freshwater resources to downstream regions. Remote sensing enables the assessment of snow distribution and its temporal variability, aiding in climate studies and water resource management. Accurate estimation of snow cover properties is vital for hydrological modeling and runoff prediction. Forested mountainous regions exhibit complex topography and vegetation cover, making ground-based measurements challenging. It is estimated that about 19% of the seasonal snow-covered area in the Northern Hemisphere intersects with boreal forests. The differences in the amount of accumulation and the timing and rate of ablation for snow in forested and nonforested areas are significant. Thus, enhancing the accuracy of optical remote sensing snow cover products over forested mountainous regions at high latitudes in the Northern Hemisphere is strictly required to have more reliable hydrological forecasts. Thus, the proposed AS/VS activity is devoted solely to focusing on enhancing the accuracy of fractional snow cover retrieval over forested mountainous regions by implementing the most recent AI/ML/DL algorithms on.

General contacts:
> H SAF Science Manager
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> Prof. Zuhal Akyurek, Dr. Semih Kuter

Host Institute: Middle East Technical University, Ankara - Turkey

The supervising activity will be carried out in collaboration with:

Finnish Meteorological Institute

Benefits and salary

The financial contribution to a VSA will consist of, cost reimbursement on a per diem basis and travel cost reimbursement (VS), as well as contribution to salary costs (AS).
The total cost of the activity will depend by the work plan proposed by the attender (see the VSA proposal) and it can't exceed 10K Euros.
The total duration of the activity is 6 months.

Eligibility criteria

- Applicants should have a university degree in Meteorology, Civil Engineering, Physics, Remote Sensing, Geomatics or Mathematics, and relevant research experience at PhD level.

- Knowledge in one or more of the following areas would be a clear advantage: optical remote sensing, remote sensing of snow, numerics and statistics, data assimilation.

- Experience in working with large amounts of data, the quantitative processing and analysis of observations from meteorological satellites and in applying AI/ML/DL methods is desirable.

- Scientific programming (C/C++, Python) on Unix/Linux based systems with excellent knowledge of required libraries for processing remote sensing data and implementing AI/ML/DL algorithms in these environments is mandatory.

- Experience in working with other geospatial and statistical software packages such as ArcGIS, QGIS, R Studio and Matlab.

Conditions of international mobility of researchers: Researchers are required to undertake transnational mobility (i.e. move from one country to another) when taking up the appointment.

Recruitment procedure
Description of the motivation and expected objective of the proposal are described below

Applications must include:
- Application Letter
- CV
- copy of valid identity documents

Applications must be sent by email to:
   H SAF Science Manager
   Dr. Giulia Panegrossi
   g.panegrossi@isac.cnr.it

Application deadline is 28 February 2024 (or until the positions is filled).