

English version

Drought and fire danger monitoring post-doctoral fellowship at CNRM (F/M)

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All applications must be submitted using this link to be considered

⇒ Information about the job position

Direction/Recruiting service

DESR/CNRM/GMME/VEGEO

Location of the position (postal adress)

Toulouse

Project concerned

GREENEO (HORIZON EUROPE)

Information related to the project

GreenEO is a Horizon Europe project which uses satellite data, environmental modelling and digital tools to promote sustainable land use across Europe. In the face of mounting environmental challenges such as urban expansion, pollution, biodiversity loss and climate-related risks, GreenEO aims to provide policymakers, land managers and communities with actionable information. The project supports the goals of the European Green Deal, particularly with regard to clean air, biodiversity protection, and sustainable land management. GreenEO's primary objective is to provide enhanced satellite-based environmental data to promote sustainable nature conservation practices in four competing land use sectors: cities, agricultural areas, semi-natural and natural forests, and ecosystems. By combining new Earth Observation (EO) products, digital infrastructures, and modelling capabilities with advanced machine learning and artificial intelligence algorithms, inverse modelling techniques, and atmospheric and land surface models, GreenEO will provide new environmental information and stakeholder engagement practices. These will support the implementation of specific endpoints under the Zero Pollution and Biodiversity aspects of the European Green Deal.

Type of position (research engineer, researcher, PhD student,...)

Researcher

Requested contract starting date

No later than 1 March 2027

Duration of the contract

12 months (renewable)

Application deadline

25 October 2026

Email contacts for any further information

jean-christophe.calvet@meteo.fr

Salary range

3470,33 et 4111,15 euros bruts

⇒ [Detailed information about the position](#)

Direction/service description

The work carried out by the CNRM's VEGEO (Vegetation, Water and Geophysics) team focuses on four complementary areas:

- (1) Modelling and remote sensing of wildfire danger and monitoring of fire emissions;
- (2) Data assimilation to improve representation of the soil-plant system in the hydrological cycle and the impact of climate warming;
- (3) Enhancing observation of land surfaces and data usage;
- (4) Enhancing observation of atmospheric aerosols and data usage.

Job description

CNRM has developed the ISBA land surface model within SURFEX, an operational modelling platform that can simulate terrestrial water and carbon fluxes. ISBA can be coupled with various atmospheric and hydrological models and incorporates a global land data assimilation system (LDAS-Monde). LDAS-Monde uses an extended Kalman filter to assimilate satellite data and analyse soil moisture and vegetation biomass at spatial resolutions ranging from 1 to 25 km. Initially, the postdoctoral fellow will operate LDAS over Europe using atmospheric forcing from the ARPEGE numerical weather prediction (NWP) model. Recent in situ observations of live fuel moisture content (LFMC) will then be used to train a neural network capable of simulating LFMC across Europe, together with other drought indices. The assimilation of several satellite leaf area index data streams will be evaluated. The LFMC product will then be validated using independent in situ LFMC observations and verified using existing gridded LFMC datasets. The results will be published in open literature.

Profile description

Candidates should be familiar with at least two of the following topics: deep learning, data assimilation, land surface modelling and remote sensing. They should also have experience of programming data analysis in Python and working in the Linux environment.

⇒ Information related to applicants

Required level of education/ Diploma

A levels / BTEC National diploma ☐

Two-year degree ☐

Bachelor's degree ☐

Master's degree ☐

PhD ☒

Required level of experience

Beginner ☒

Advanced ☒

Expert ☐

Required level in french

Not required ☒

Introductory ☐

Intermediate ☐

Middle ☐

Advanced ☐

Autonomous ☐

Fluent ☐

⇒ **Teleworking friendly**

YES ☒ NO ☐

If the answer is yes, how many days per week ?

0, 1 or 2

⇒ **Management**

YES ☐ NO ☒