The AMAP laboratory (Montpellier) is recruiting an engineer/postdoctoral researcher on a one-year fixed-term contract (CDD) to contribute to the IFIHSA project (Forest Inventory using Airborne Hyperspectral Imaging), developed in collaboration with the ONF (National Forestry Office) in French Guiana. This project aims to develop methods for forest inventory using airborne remote sensing, combining hyperspectral and LiDAR data.

Mission
Under the supervision of Grégoire Vincent, the recruited candidate will have the following main responsibilities:

- Preprocess airborne hyperspectral data, including fine co-registration with simultaneously acquired LiDAR data and extraction of spatialized metadata.
- Develop and document a multi-date/multi-site classifier (e.g., LDA) for species recognition[1],[2].
- Explore domain adaptation techniques to improve classifier performance when applied on new sites.
- Implement and evaluate deep learning models developed as part of a doctoral thesis[3],[4] funded by the Institute for Mathematics of the Planet Earth (thesis ending in September 2025).
- Write a scientific article outlining the benefits and limitations of the tested/explored models.

Desired Profile: Signal Processing/Remote Sensing Specialist

- Strong programming skills (proficiency in Python, R, and Git is essential).
- Knowledge of data analysis and deep learning.
- Experience in hyperspectral and/or LiDAR data processing would be an asset.
- Ability to work in a team and integrate into an interdisciplinary project.

Conditions

- Position based in Montpellier at the AMAP laboratory.
- One-year fixed-term contract (CDD) to be filled as soon as possible, with the possibility of extension (with new missions in the field of remote sensing data processing in forest environments).
- Salary according to the current pay scale, based on experience.

Application
Candidates are invited to send their CV, cover letter, and references to the following address: gregoire.vincent@ird.fr.
Application deadline: 04/30/2025.

Join a dynamic team and contribute to an innovative project in support of sustainable tropical forest management!

AMAP – the Botany and Modeling of Plant and Vegetation Architecture Laboratory is a multidisciplinary unit conducting research in vegetation modeling and plant species identification through imaging (e.g., the Pl@ntNet project). Within the team, you will

contribute to the development of remote sensing and AI applications to address major challenges in tropical ecology.

IFIHSA – Project in partnership with ONF Guyane (https://amap.cirad.fr/fr/edit-projet.php?projet_id=304).

References Cited

1. Laybros, A. et al. Quantitative Airborne Inventories in Dense Tropical Forest Using Imaging Spectroscopy. *Remote Sensing* 12, 1577 (2020).
2. Laybros, A. et al. Across Date Species Detection Using Airborne Imaging Spectroscopy. *Remote Sensing* 11, 789 (2019).
3. Prieur, C. et al. Investigating Abiotic Sources of Spectral Variability From Multitemporal Hyperspectral Airborne Acquisitions Over the French Guyana Canopy. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing* 17, 18751–18768 (2024).
4. Prieur, C., Ait Ali Braham, N., Tresson, P., Vincent, G. & Chanussot, J. Prospects for Mitigating Spectral Variability in Tropical Species Classification Using Self-Supervised Learning. In (Helsinki, 2024).