



## ORCHAMP

An integrated and long-term observatory

for the French Alps





## Communauté UNIVERSITÉ Grenoble Alpes

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**Tracking long-term environmental changes in the French Alps** 

**Permanent plots** resurveyed **every 5 years** Plots located along **elevational gradients covering 1000m or more** Gradients capturing the **ecosystem diversity** of mountain landscapes

#### **Main features**

Multidisciplinary approaches Partnership between researchers, land managers and stakeholders

#### **Open access data**

### **Common standardised protocols**

Measured variables comply with the Essentials Biodiversity Variables (Pereira, Science 2013)

*Ecosystem properties and functions* Soil properties, mineralization,
enzymatic activities,



High-resolution data acquisition
Land cover, seasonal and multiannual dynamics of land surfaces



### ✓ Environmental DNA methods

Multi-trophic biodiversity, co-occurrence networks, beta diversity patterns



✓ Vegetation surveys

Dynamics of plant species assemblages, shifts in plant functional diversity



## $\checkmark$ Land use

Land management, socio-economic surveys

# ✓ Climate Bioclimatic variables, snow cover



#### Link with SAJF projects

Fluxalp: a flux tower at 2100 m Long term survey of snow cover dynamics Transplant experiment across elevation

#### Facilities

Environmental DNA lab Real time data transmission Man power and botanical expertise

Innovative methods to probe the environment Time lapse cameras NDVI sensors Camera-based hyperspectral imaging system

## A question-driven observatory network

To bundle and streamline observations made across contrasting mountain landscapes
To provide unique information on trends, causes and effects of environmental changes in the Alps
To better understand the relationships between climate, land use, multi-trophic diversity and ecosystem functioning
To raise awareness and inform policy makers and land managers