

## FORM PER PROGETTI BANDO DOTTORATO

### 1. Project title

A functional trait approach to study ‘losers’ and ‘winners’ of climate change in European alpine plant communities.

### 2. Proposer

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### 4. Key words

(Max. 5 – at least 2)

Climate change, alpine plants, functional traits, long-term population dynamic

### 5. Abstract

(Max.1.500 characters with spaces)

Alpine habitats are highly threatened by climate change because their cold-adapted species experience the highest rates of warming. Temperature warming in the European mountains has been particularly marked over the past decades, leading to an intensification of summer drought and a decline in depth and duration of snow cover. In response to these changes, previous research has reported shifts in species distribution patterns, changes in species composition, and altered performance of montane species across the globe. Despite this, most of the current research has identified these problems, yet there is a lack of mechanistic explanations for the changes. In the context of climate change, plant functional traits can be useful tools for predicting the performance of species and how these shifts over time and space. However, how trait values and/or their plasticity has affected species ability to persist or colonize mountain tops is yet not fully explored and understood. The goal of this project is evaluating the role of plant traits to predict plant responses to climate change, i.e. whether species with different long-term population dynamics differ in their fundamental plant functional traits related to resource acquisition, competitive ability, and reproduction.