

Submitted Abstract

ID IMC22-FSAbstr- 802

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Country	Germany
Region	Western Europe
Title	Towards An Open Solution For High-Resolution Mapping Of Mountain Vegetation Using Remote Sensing.
Keywords	Very-High Resolution Remote Sensing, Alpine-Treeline Ecotones, Alpine Vegetation, Data Availability
Type	List Of Focus Session
Focus Session ID	05

Abstract

Mountain plants can respond to climate change by shifting populations uphill or locally to suitable microsites, functioning as local refugia. Such shifts reduce the risk of species going extinct and reshuffle the alpine vegetation, sometimes even causing an expansion of forest. Current spatial vegetation patterns can provide strong indications of the processes controlling plant distributions, and therefore of future shifts. Accurately describing such patterns is therefore important for predicting and monitoring vegetation change. Very-high-resolution remote sensing (i.e. with spatial resolutions < 0.5 m) offers great promise to map the fine-grained alpine vegetation above the closed forest. However, two big challenges need to be solved before this potentially fantastic resource can be applied to map and monitor vegetation patterns in mountains globally: the availability of and access to these data, and the analysis of the images in terms of recognising and delineating vegetation types and, in the case of larger species like shrubs, trees, cushion plants and giant rosettes, individuals.

In an open-format synthesis workshop, co-funded by the Mountain Research Initiative (MRI), we discussed these challenges and potential solutions. We will present the preliminary output of this workshop, hoping to contribute to a freely-accessible solution to very-high-resolution mapping of alpine vegetation, including alpine-treeline ecotones, in mountains worldwide.