

## *Proposal for Fluxnet-La Thuile-dataset publication*

**Title: The impact of land surface heterogeneity on temperature extremes: Central-Western Europe vs The Mediterranean**

### **Initial coordinator and proposal groups**

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### **Short outline**

The main focus of this study is the impact of land cover (forest vs grassland) on temperature variability. From model simulations, it is known that soil moisture, through its impact on surface fluxes, impacts summer temperature variability at regional and larger scales (Seneviratne et al, 2006). Soil moisture control on surface fluxes is also known to be a function of climate (Teuling et al, 2009). On smaller scales, the impact of soil moisture on surface fluxes strongly depend on land cover conditions and plant behavior (Teuling et al, 2006a and b). Teuling et al (2010) have recently shown that forest and grassland flux towers in central-western Europe reveal a contrasting response during "normal" heatwaves, with forests showing increased sensible heat fluxes, and grassland increased evapotranspiration. Here we investigate if and how this response is different for grassland and forest sites located in Mediterranean climate zones which regularly experience soil moisture stress.

### **Research questions**

How does the water and energy budget of Mediterranean forest and grassland respond to heatwave conditions?

How is this response different from the response in the temperate climate zone of central-Western Europe?

### **Sites**

The proposal focuses on the central part of Western Europe and the Mediterranean. All sites in this region with more than 1 year of observations of radiation, latent and sensible heat, wind, air temperature and humidity will be considered.

## Rules applied for co-authorship

Persons that have contributed data and/or have given intellectual input to the paper will be contacted to invite them for co-authorship. All data contributors will be invited to give intellectual input.

## References

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