

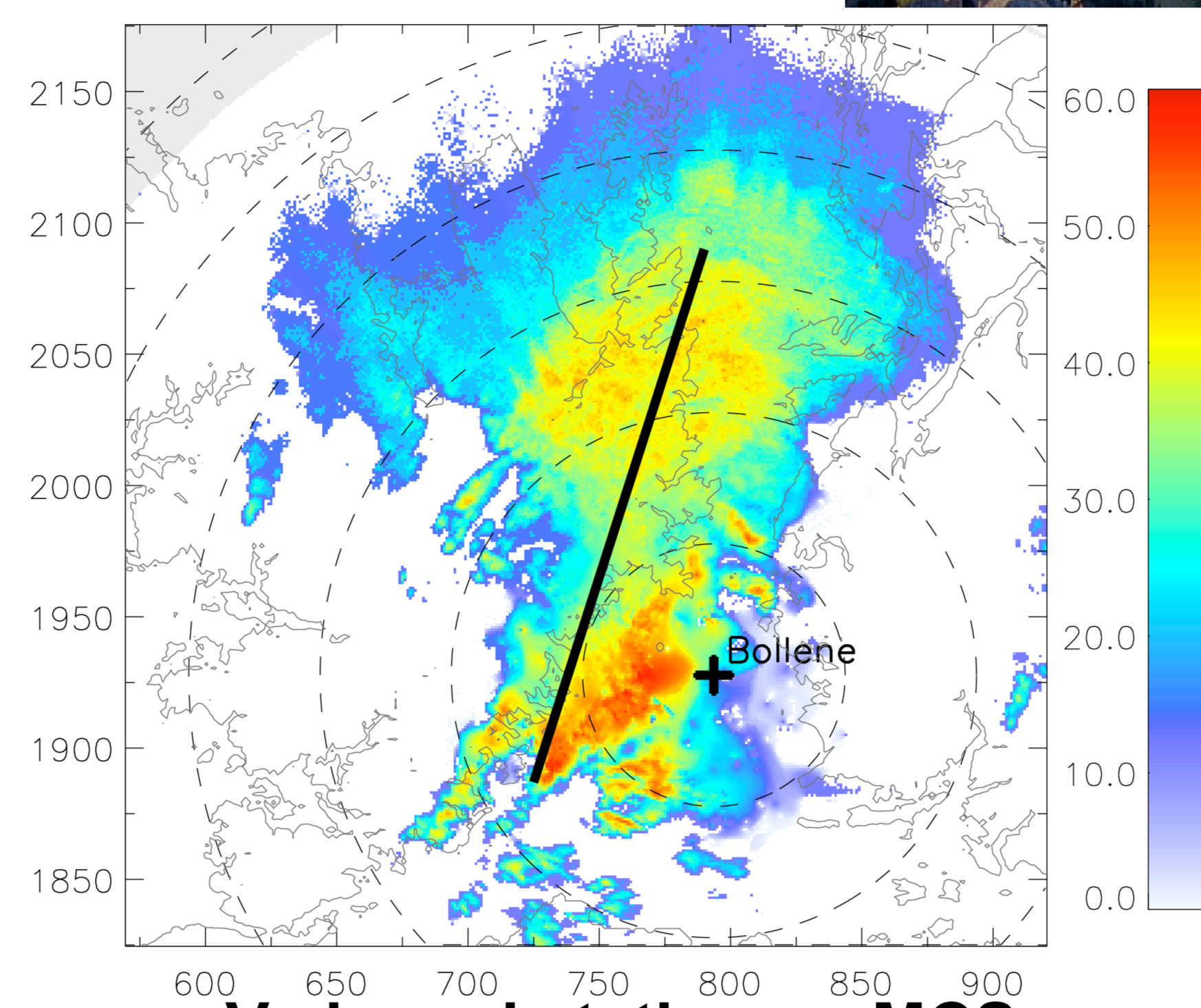
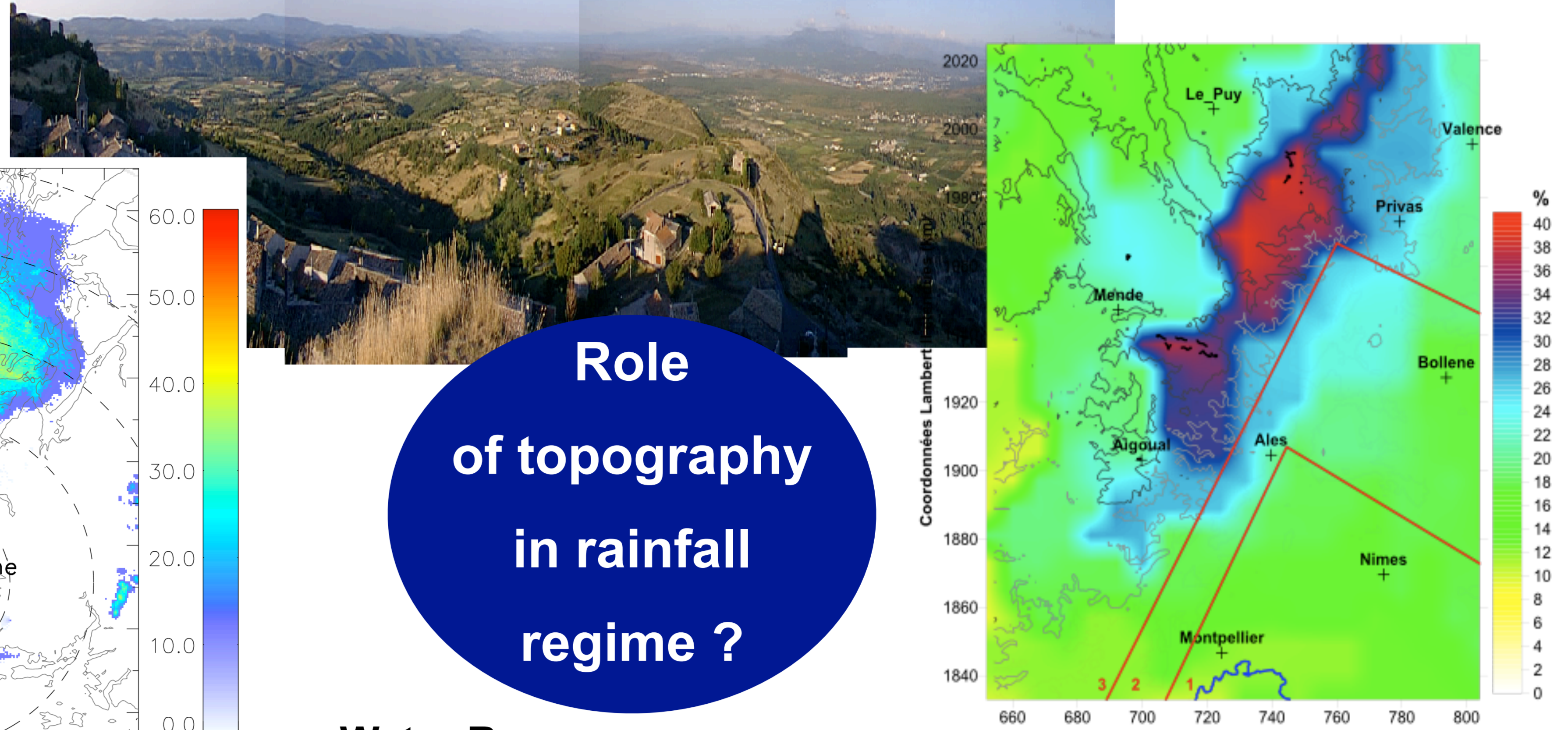
# Orographic precipitation in Mediterranean areas.

## Structured observation strategy implemented during HyMeX enhanced observation period.

### General context:

Need to improve regional climate understanding in the context of risk mitigation and anticipation in response to global warming;  
Importance of topography in the Mediterranean rainfall regime.

### Objectives



**V-shaped stationary MCS**  
Radar reflectivity (dBZ) at 0200UTC. Case of the 2002 flash-flood event in the Gard region, France (Delrieu et al., 2009)

**Role of topography in rainfall regime ?**

#### Water Resources

Evolution of rainfall regime in a context of climate change.

#### Risk assessment

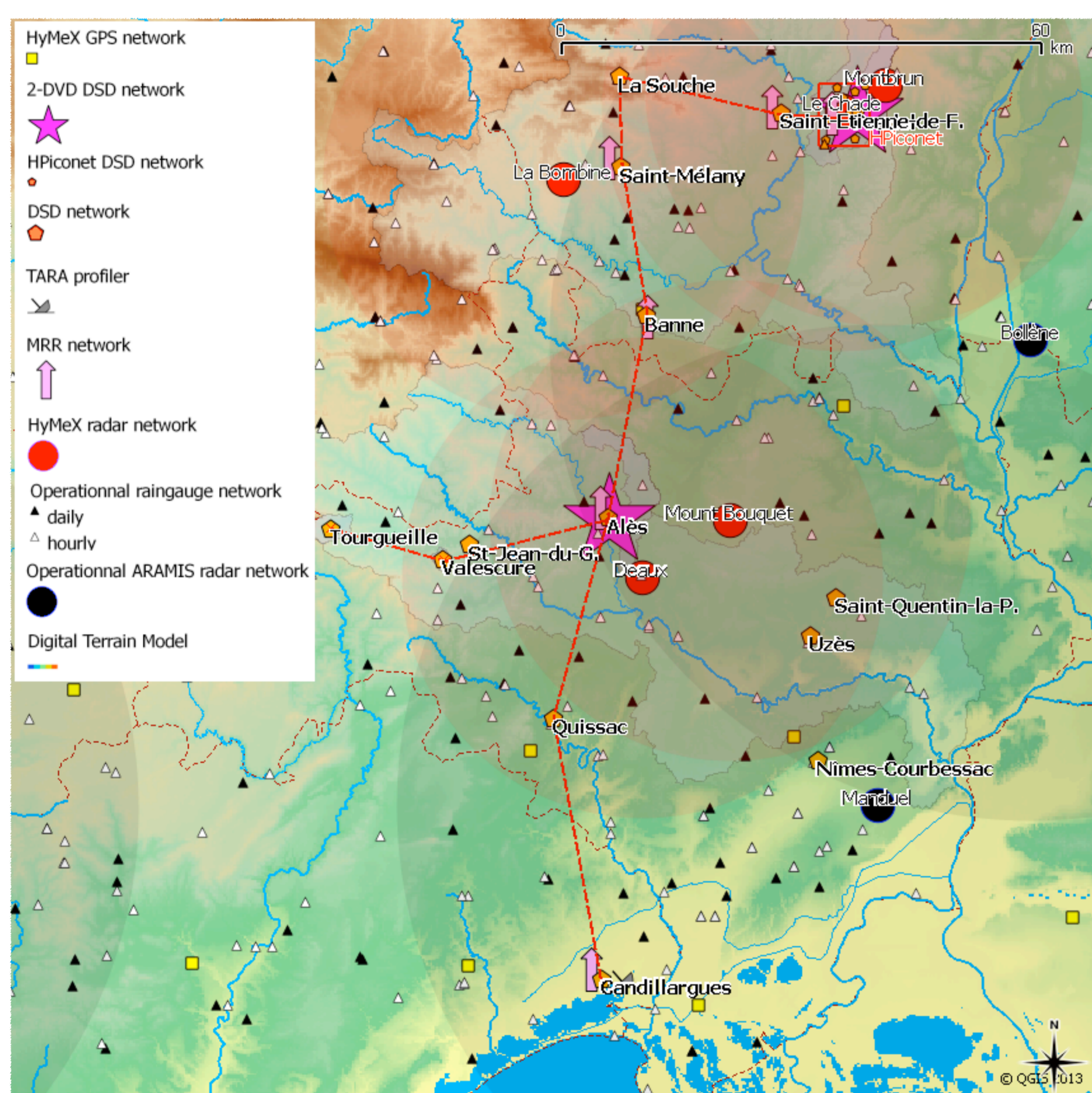
Improve the understanding of flash-flood generating storms and their interaction with topography.

Contribution of shallow banded convection to the rainfall regime in French Mediterranean area (Godart et al., 2011).

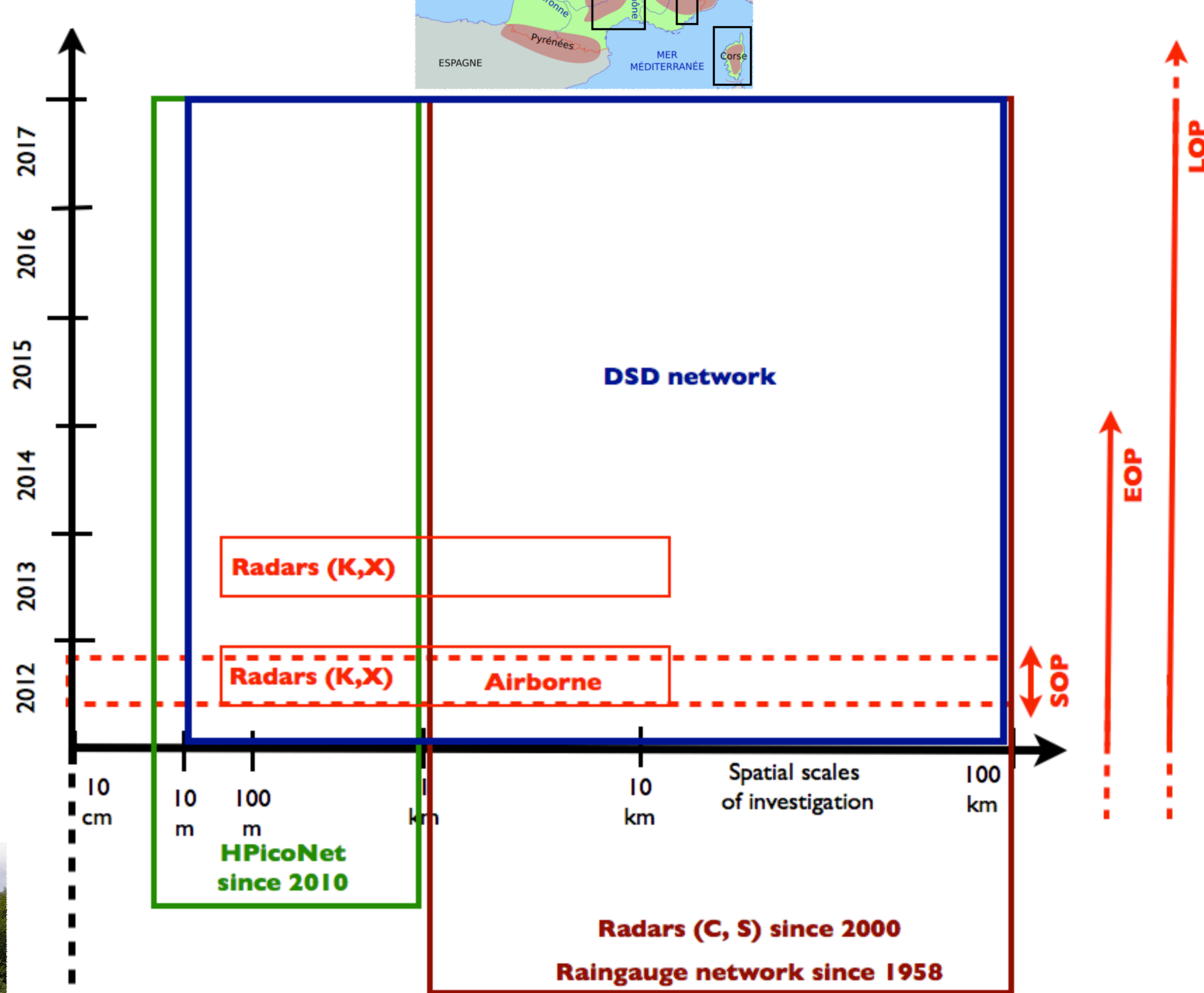
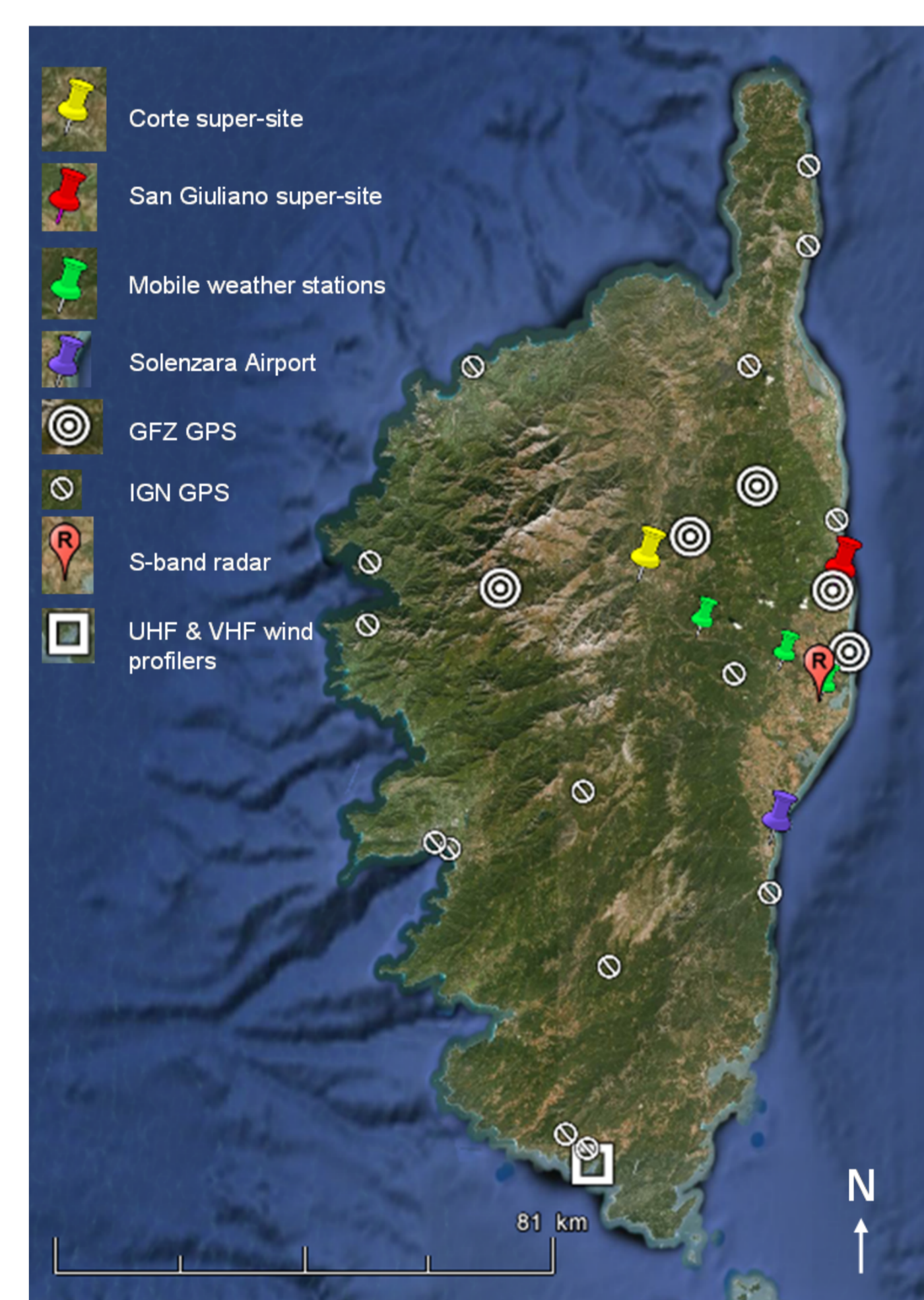
Implementation of a multi-sensor observation network to capture the variability (i.e. time and space scales; organization) and microphysical characteristics of the orographic precipitation in Mediterranean mountainous areas.

- Contribution to global monitoring of the earth environment
- flood warning and water resources estimation in mountainous areas
- Validation Site for GPM in order to get global precipitation data.

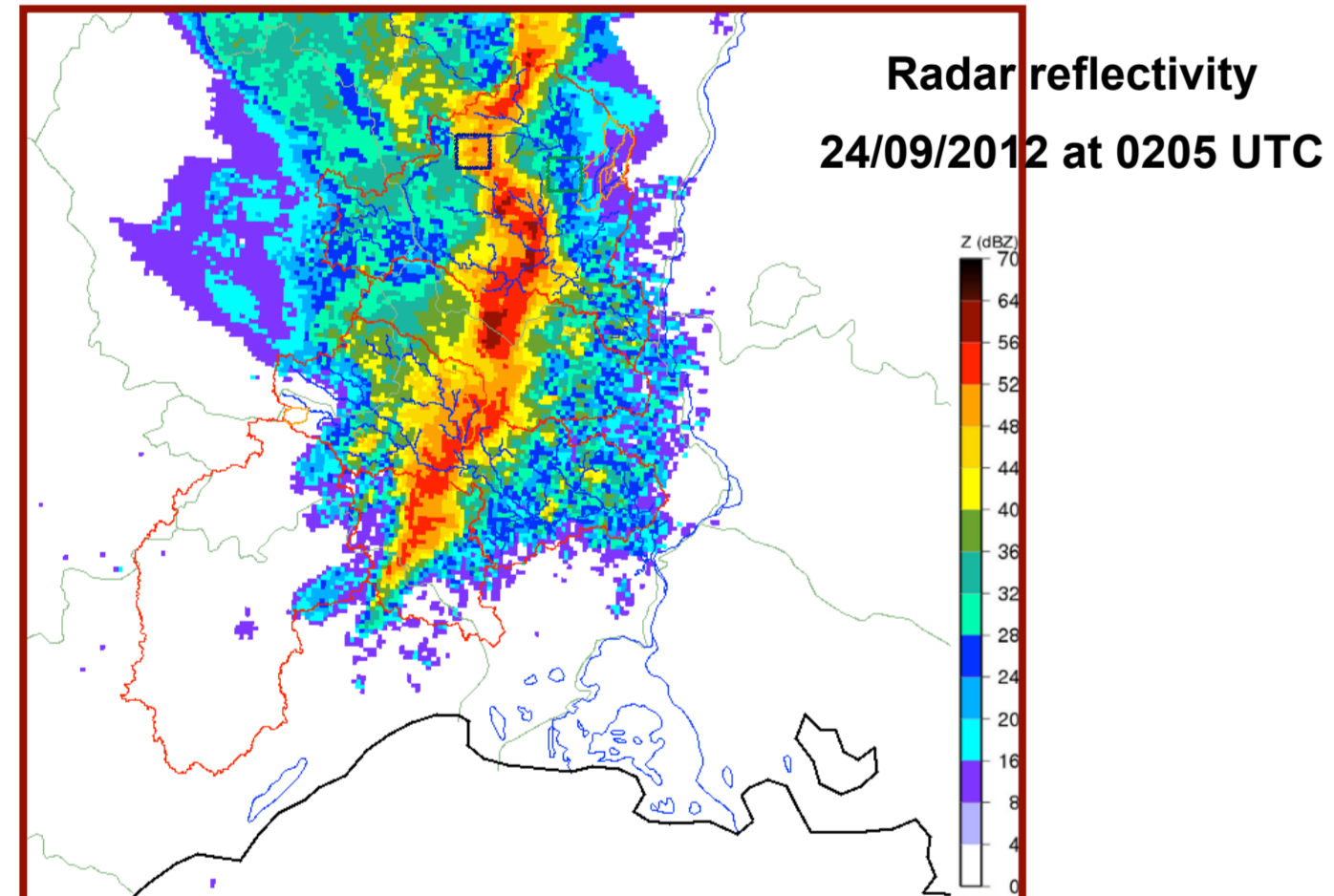
### The Cévennes - Vivarais target area



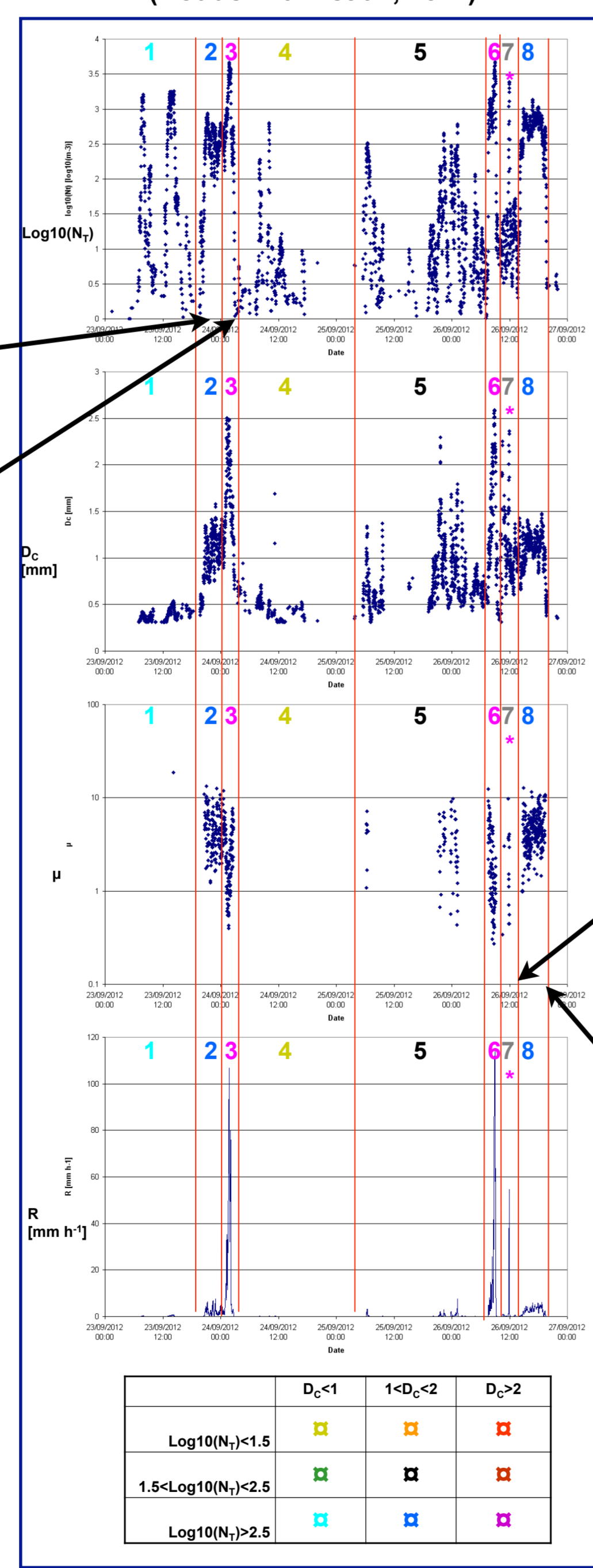
### The Corsica super site



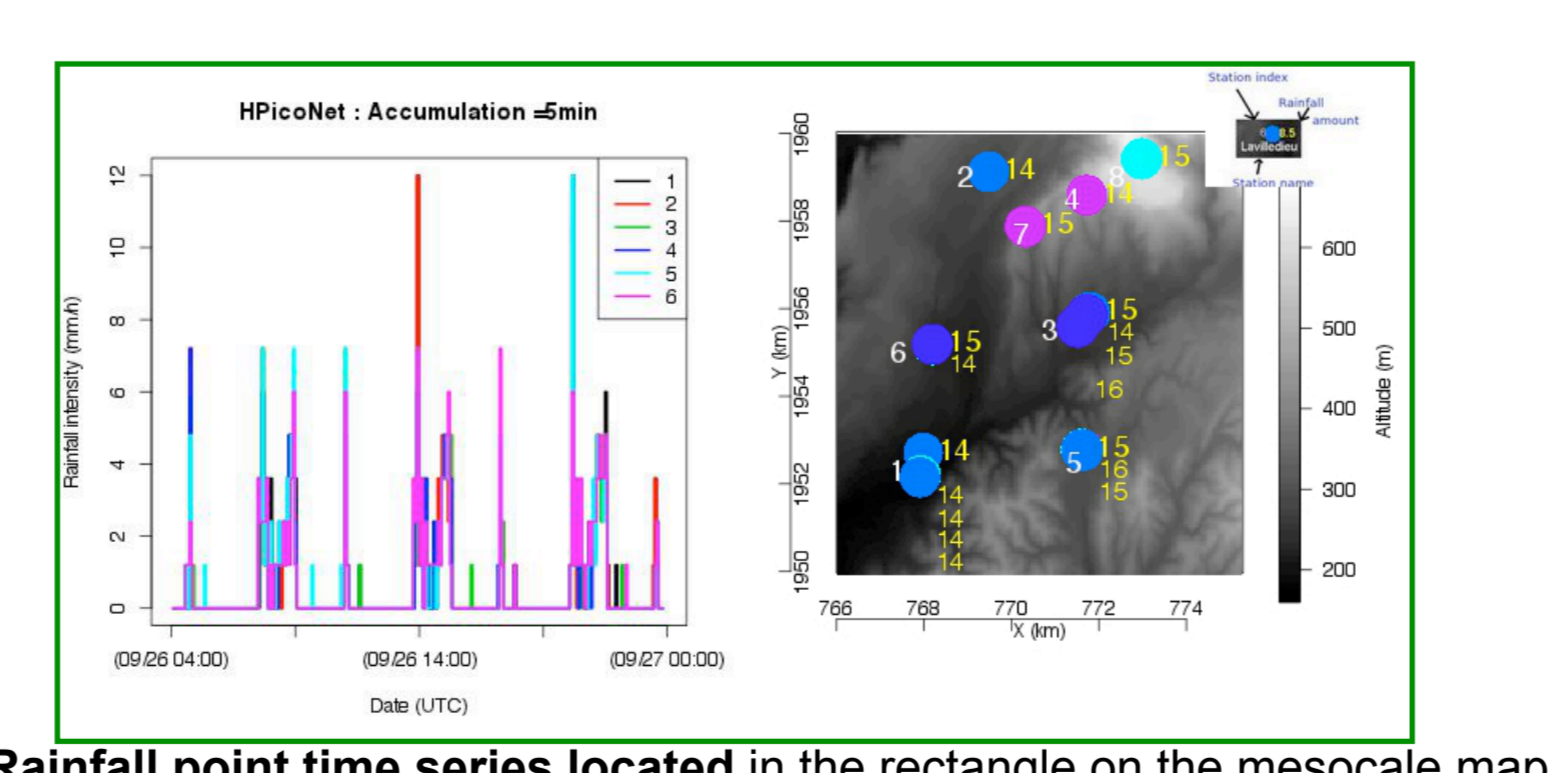
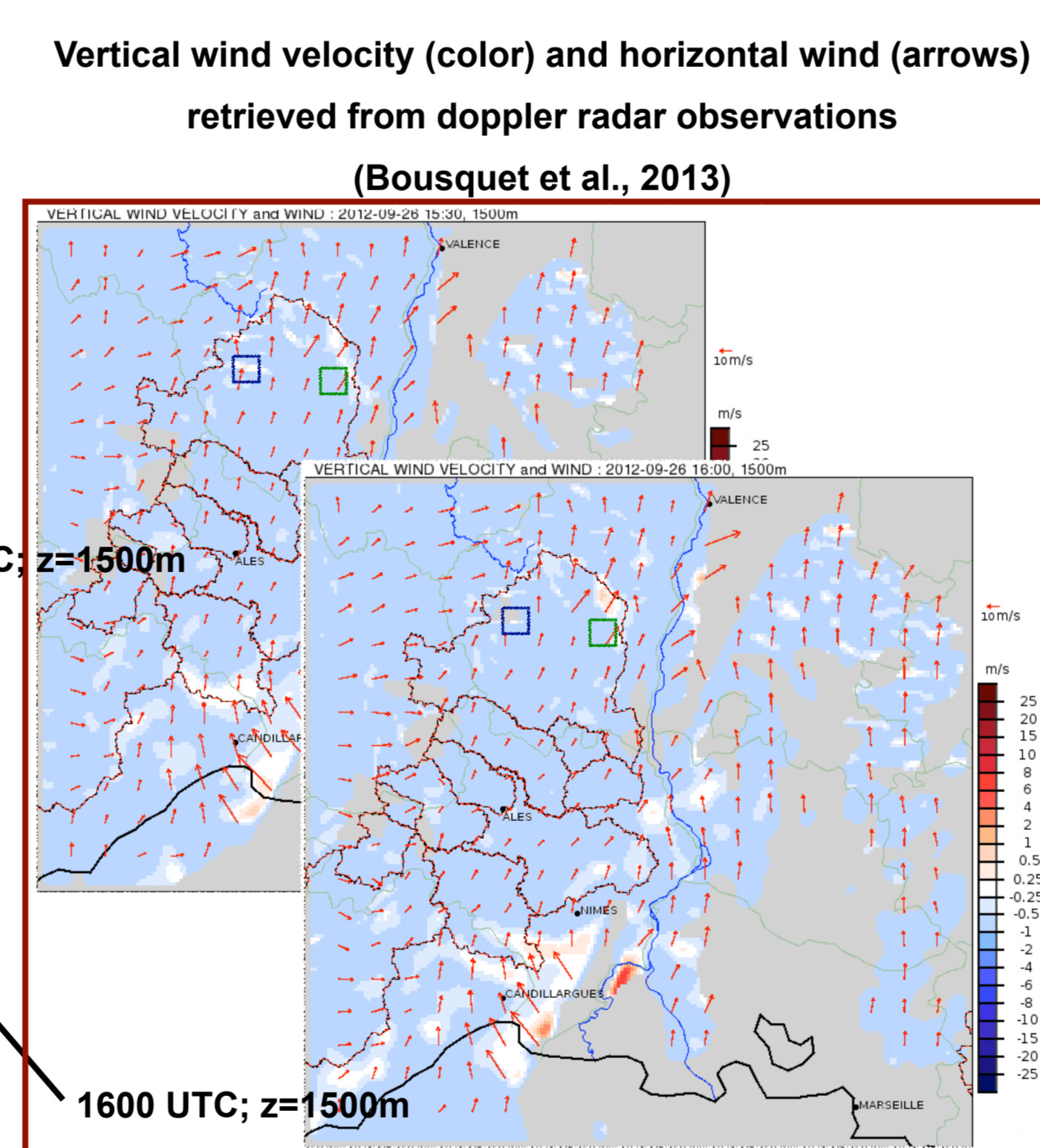
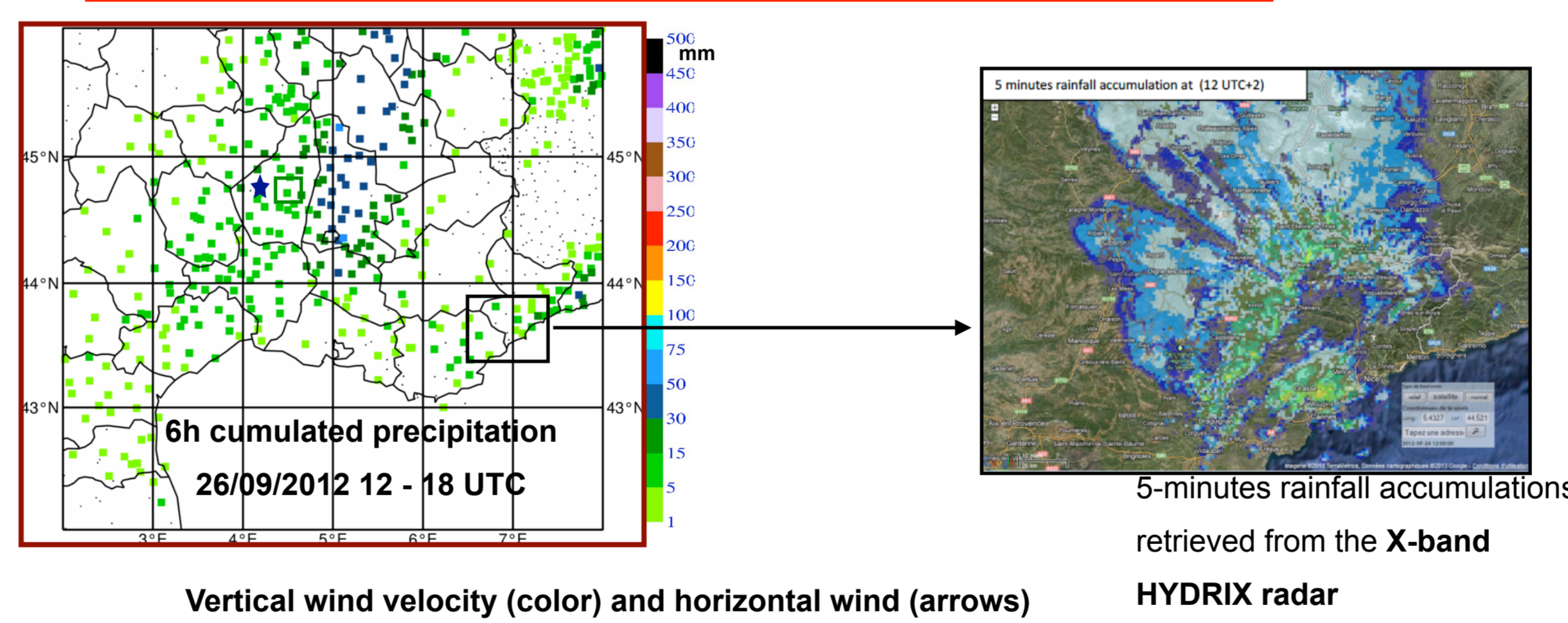
### Fast intense convective line highly variable at small-scale



La Souche  
DSD analysis of the point time series located at the blue point on the mesoscale map. (Boudevillain et al., 2011)

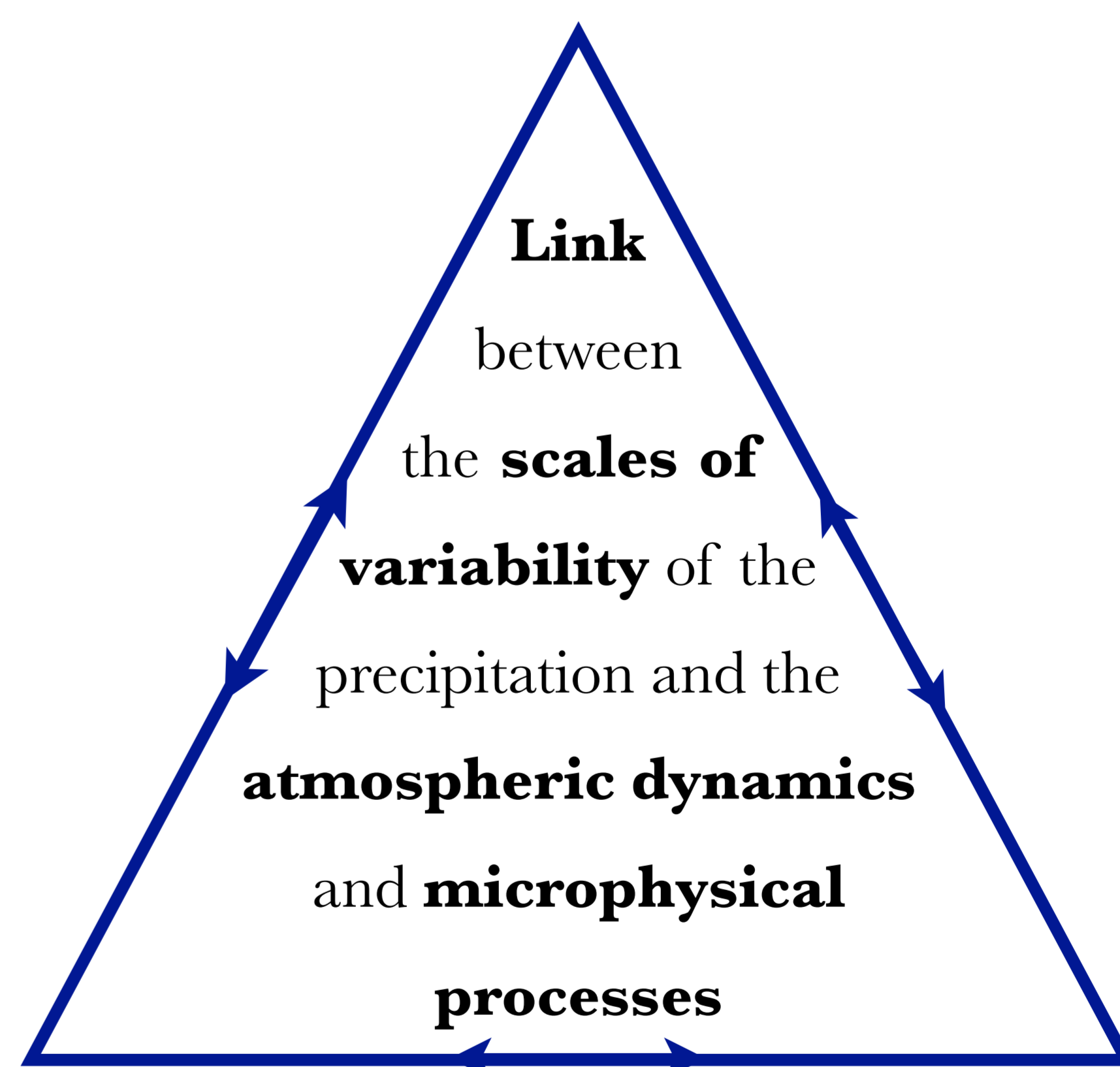


### Quasi-stationary stratiform convection with a low variability at small-scales



### Scientific methodology

#### Multi-scale observation



Structural Analysis and simulation

Multi-fractals; Geostatistics; Multiplicative cascades; stochastic simulation

Physically-based modeling and simulation  
MesoNH; WRF  
DESCAM

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