



## **Rainfall characteristics along mountainous transect**

Jimmy Zwiebel (1), Joël Van Baelen (1), Sandrine Anquetin (2), Yves Pointin (1), and Brice Boudevillain (2)

(1) Laboratoire de Météorologie Physique, Université Blaise Pascal/CNRS, UMR 6016, 24 Avenue des Landais, F-63171 Aubières, France, (2) CNRS/UJF-Grenoble I/G-INP/IRD, LTHE, UMR 5564, Grenoble, France

The HYdrological cycle in Mediterranean EXperiment is an experiment framework that aims at improving our understanding and quantification of processes related to the hydrological cycle in the Mediterranean region at different scales (from the individual event scale to seasonal and inter-annual variability). During the Special Observation Period (SOP-1) conducted from September 5th to November 6th 2012, an important and complementary remote sensing network (operational radars, X band research radars, Micro Rain Radars, disdrometers, and a dense network of rain gauges) has been deployed in the Cévennes-Vivarais region (South of France). This network was specifically designed to investigate the structure and the heterogeneity of precipitations as well as, in particular, the impact of orography on this structure and it has provided us with high resolution data (time and space) along strong topographic gradients (small hills, foothills and mountain). Hence, these data will support our research to precisely describe the precipitation systems and their structures over a complex terrain.

In this work, we will describe the characteristics of rainfall along two topographic gradients based on the major events observed during the fall 2012 campaign period. A classification according to the type of precipitation (convective, stratiform and orographic) which can affect the region has been made to investigate orographic impact under different rainfall regimes. We will also examine the influence of the relief on the vertical and horizontal structure of precipitation. In particular, we will illustrate the modification of the drop size distribution toward smaller droplets as we go from the small hills to the mountains.