



The Planetary Boundary Layer in the Alqueva Lake Region: observations and modelling results

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In the Summer 2014, from 22th to 25th July, an intensive field campaign was performed to describe the planetary boundary layer in the vicinities of the Alqueva lake. The campaign was led by the University of Évora, and regarding the PBL relied on eight surface weather stations, comprising two over the lake, radiosondes, ceilometer measurements, and a network of 15 GNSS stations to map the water vapour, etc.

Two high resolution simulations were performed using WRF model, at 4km and 1km, to characterize the PBL structure and evolution in the field campaign period. These simulations, centred over the lake, were evaluated against the observations showing the good model skills to study in detail the PBL properties and the interaction of the flow with the lake.

In the present study, a detailed view of the local PBL diurnal cycle is presented, using both the observational data and the simulations results. The local imprint of the lake on the local flow and on the PBL evolution is described, as the differences on the interactions between the surface, land-lake and the atmosphere.