

Orographically generated flows over a meso-beta scale basin in the north of Spain: modelling and verification

A. Mira, J. Cuxart, D. Martínez, and A. Luque

Universitat de les Illes Balears, Palma de Mallorca (Spain)

In the nocturnal stable boundary layer (SBL), katabatic flows generate on the slopes of the mountains, that converge to the basins. There are, usually, few available observations and a first approach to the understanding of the nocturnal dynamics in a basin can be through mesoscale modelling.

A high-resolution simulation of a stable winter case in the Duero Spanish basin (characteristic scale of 200 km) with clear skies and slack synoptic pressure gradients is performed with the Meso-NH model, and its verification is carried out afterwards. Special effort is made on the verification of the structures, through comparison to in-situ observations, but mainly to imaging data obtained from the NOAA-16 and the Meteosat-7 satellites. This allows respectively to check the realism of the spatial structures and of the temporal evolution of the surface radiative temperature.