



## **Influence of topographically generated mesoscale motions on the stable boundary layer**

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Data recorded in strongly stratified conditions contain, besides the signal of the turbulent motions, other influences of the same order of magnitude. In this study, a mesoscale simulation of an almost closed basin (Duero) is performed under a high pressure system that allows local circulations to prevail. The topographically generated flows seem to be the major factor ruling the dynamics of the boundary layer within the basin, performing long distance transport, creating vertical wind shear or exciting gravity waves when they interact with the local topography. The simulation is analysed with detail, focussing on turbulence, radiation, condensation and horizontal advection. It is validated using data from the boundary-layer CIBA site, the network of automatic weather stations and satellite images.