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The contribution of the surface heterogeneities in the generation of elevated turbulence above the Low-Level Jets

M. A. Jimenez and J. Cuxart
Universitat de les Illes Balears, Physics, Palma de Mallorca, Spain (mantonia.jimenez@uib.cat)

A mesoscale simulation over the Duero river basin, located in the Iberian peninsula, is performed to study the different regimes during the nocturnal boundary layer. It is found that, during the afternoon weak low-level jets are formed and, as night advances, some of them become strong jets.
The turbulence is mainly weak but at some places it can be intermittent and/or with elevated origin due to the shear. The surface layer is mainly weakly stratified and the coldest places are located in the valleys between mountains.
The effect of the surface heterogeneities (induced by the topography or the vegetation covers) in the jet features is also explored. The importance of other parameters, such as the horizontal resolution and the numerical diffusion, is also evaluated.