



## **Atmospheric Boundary Layer evening transitions: a comparison between two experimental sites (CIBA-Spain and BLLAST-France)**

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Among all the characteristics which govern earth-atmosphere exchanges, turbulence in the planetary boundary layer is probably one of its most important features. How fast or slow the daily turbulence decays from the afternoon and at which time it starts happening can help us to improve our understanding of these pollutants, heat, humidity or momentum exchanges. At the evening transitions we can see the evolution of the boundary layer from convective to stable and the importance of turbulence depending on different conditions. To get a good characterization, it is quite relevant to learn if the behaviour of the evening transitions is strongly dependent on local conditions, or on the other hand, many results can be universally applied.

In this work it is presented a comparison of evening transitions during summer at two experimental sites: CIBA in Valladolid (Spain) and CRA in Lannemezan (France) using BLLAST field campaign. Days with similar synoptic characteristics are compared, regarding differences in both topographic surroundings. Similarities and differences dealing with the developing of the nocturnal stability are particularly remarked. Micrometeorological data around sunset have been studied and turbulent parameters calculated. Additionally, a scale analysis is shown too, so that we can obtain information of which temporal scales provide the most important contributions to vertical fluxes at different times of the evening transition. For this purpose, Multiresolution Flux Decomposition is applied to sonic anemometer data. Finally, WRF simulations are run in order to compare and try to decide whether or not the model better reproduces the transitions at one specific site than at the other one.