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Evolution of the temperature profile within the surface layer under stable conditions during the BLLAST campaign

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Observations from a surface based station installed for the international BLLAST (Boundary Layer Late Afternoon and Sunset Transition) field campaign are used to investigate the effects of the small scale heterogeneities under stable conditions and during the evening and morning transitions. This field campaign took place from June 14th to July 8th 2011 in Lannemezan, France, with the main goal to study the boundary-layer decay to an intermittently turbulent residual layer. The experimental site was located on an elevated plateau at the northern foothills of the Pyrenees and, therefore, particularly influenced by thermally driven circulations.

The air temperature evolution is analysed at a high frequency rate by means of eight thermocouples that were installed between 1.5 and 192.0 cm above ground level (AGL). This information is complemented with an estimation of the surface temperature provided by an infrared camera, a condensation detector at 2 cm AGL, the measurements of the soil temperature and the soil heat flux at 3 and 10 cm below ground, respectively, and the water content in the first 15 cm of the soil. An attempt to estimate the flux net radiation divergence was also carried out by two net radiometers installed at 20 and 192 cm AGL.

The present study will expose the preliminary analysis of the results and will provide information about the reliability of the gathered data.