



## **Initial results from the Diurnal land/atmosphere coupling experiment (DICE)**

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During clear-sky and weak wind nights, most of the numerical weather prediction models have difficulties in reproducing the observations close to the surface, specially under strongly stratified conditions. One of the reason is that the turbulence is weak and sometimes intermittent and thus difficult to parameterize in the models. In order to study the main physical processes that take place in the atmospheric boundary layer, and specially during the night, different model intercomparisons have been proposed, as the GEWEX Atmospheric Boundary Layer Study (GABLS). In GABLS, several regimes have been compared using 1D and LES models and in all the cases the initial profiles and the surface conditions (evolution of the temperature) are prescribed and based on observations.

The Diurnal land/atmosphere Coupling Experiment (DICE) is an international experiment designed to identify and understand the interactions and feedbacks between the land and atmospheric boundary layer. The GABLS2 experiment has been re-visited, but with the land surface community included within the analysis. This has allowed a multi-stage project whereby the sensitivity characteristics of each component (land and atmosphere) can be assessed and compared with the characteristics of the coupled simulations. The DICE intercomparison case consists of 3 clear-sky days (72 hours) during the CASES99 campaign, with a variety of turbulence characteristics between them. The night-time regimes can be classified as intermittently turbulent, fully turbulent and very stable (hardly any turbulence) while the days also show differences in, for example, boundary layer growth rates. Preliminary results of this model intercomparison will be explained in this presentation.