



PDF methods to study the nocturnal boundary layer: application to a mesoscale simulation

M.A. Jiménez, A. Mira and J. Cuxart

Grup de meteorologia, Departament de Física, Universitat de les Illes Balears

The computation of the Probability Density Functions (PDFs) is a very adequate tool to study data acquired at low frequency in the boundary layer. It allows to produce estimates of many statistical momenta, such as variances and covariances, that inform on the characteristics of the turbulent flow.

Over complex terrain, the contribution of the topographically generated flows is of utmost importance. It is difficult to analyze it with single point measurements. Here a mesoscale simulation for the Majorca Island under a high pressure system is made. The study is made by basins. Data from available Automatic Weather Stations (AWS) and satellite images is studied through PDFs and compared to PDF's from the simulation. Besides the increase of understanding, this methodology can be considered as well a verification method.