



The impact of different surface parameterizations and vertical resolutions on the simulation of sea-breeze episodes at the island of Fuerteventura

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On April 2007, several episodes of intense sea-breeze fronts were registered at the island of Fuerteventura (Canary Islands). The sea-breeze circulation was primarily driven by daytime heating contrasts between land and the Atlantic Ocean during a period of weak trade winds. Numerical simulations of these events were carried out using the 3.1.1 version of the Weather Research and Forecasting (WRF) Model. Two different domains with 6.6-km and 2.2-km horizontal grid spacing and two sets with 27 and 50 vertical sigma levels were defined. The simulation was performed using two-way interactive nesting between the first and the second domain, using different land surface model parameterizations (Thermal diffusion, Noah LSM and RUC) for comparison. Initial conditions were provided by the NCAR Dataset analysis from April 2007, which were improved using surface and upper-air observations.