Numerical simulation of a sea-breeze front at the island of Fuerteventura

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On 9 and 10 April 2007, an episode of an intense sea-breeze front was registered at the island of Fuerteventura (Canary Islands). The sea-breeze circulation was driven by daytime heating contrasts between land and the Atlantic Ocean. A numerical simulation of this event was carried out using the 3.0.1 version of the Weather Research and Forecasting (WRF) Model. Three different domains with 9-km, 3-km and 1-km horizontal grid spacing and 50 vertical sigma levels were defined. The simulation was performed using one-way interactive nesting between the coarse domain and the two smaller domains, and two-way interactive nesting between the second and the third domain. Initial conditions were provided by the NCAR Dataset analysis from 08 April 2007, 00:00 UTC to 10 April 2007, 12:00 UTC, which were improved using surface and upper-air observations.