Convection ahead of a sea-breeze front at the island of Fuerteventura

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On 9 and 10 April 2007, an episode of convective development over the central part of the island of Fuerteventura was registered. This event shows an example of local convection triggered by two sea-breeze fronts colliding over the island. The sea-breeze circulation was driven by daytime heating contrasts between land and the Atlantic Ocean. A numerical simulation of this event has been carried out using the 2.2.1 version of the Weather Research and Forecasting (WRF) Model. Three different domains with 9-km, 3-km and 1-km horizontal grid spacing and 29 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 local surface and upper-air observations.