



Firssts results on the modelling of the Gran Canaria atmospheric wake

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Trade winds dominate much of the year the flow regime for the Canary Archipelago. The atmospheric vertical profile is clearly characterized by the trade inversion, located usually about 800-1000 m height for our latitude. The structure of this profile presents two layers: one mixed layer, with a strong oceanic influence, below the trade wind inversion and an anticyclonic layer over the lower one. Both layers are usually stable except for the first meters above the ocean. This thermal profile favours the formation of a vortex street lee of the main islands.

This work shows the first attempt to modelize the Gran Canaria Island wake, an island with almost a conical shape (60 km diameter and about 2000 m height). The leeside circulation is studied from the Weather Research and Forecasting (WRF) model for a well-defined street vortex case during June 2010. A numerical simulation of this event has been carried out using the 3.1.1 version of the Weather Research and Forecasting (WRF) Model. Three different domains with 9-km, 3-km and 1-km horizontal grid spacing and 51 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, which were improved using local surface and upper-air observations.