A comparison between two single-column models designed for short-term fog and low clouds forecasting

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An intercomparison experiment between six different single-column models was carried out in 2005. The models were run for two real cases with the same initial soil-atmosphere column, derived from data measured at the Paris-Charles de Gaulle airport (Paris-CdG). Once the experiment was completed and the results were analysed, the Spanish Instituto Nacional de Meteorología and Météo-France decided to compare the behaviour of their respective models (H1D and COBEL-ISBA) during a whole winter season at three sites with completely different climatic conditions: Warsaw-Okecie, Paris-CdG and Casablanca-Nouasseur airports.

H1D is a single-column version of the HIRLAM model. For the present experiment, it is integrated in a 60-level vertical grid, with the lowest level at about 30 m above ground level (AGL). It is initialised using a column of the operational HIRLAM analysis; the 6-hour forecast of the model itself and the synoptic observations. The COBEL model was developed in collaboration between the Université Paul Sabatier and Météo-France. Later, it was coupled with the ISBA soil scheme. It uses a very fine grid with the lowest level at 0.5 m AGL. For the Paris-CdG integrations, it uses data from a dedicated observational system.

In the present communication, the results from the winter comparison carried out between October 2005 and February 2006 at Paris-CdG airport are presented.