

Interactive comment on “A study of dispersion in complex terrain under winter conditions using high-resolution mesoscale and Lagrangian particle models” by J. L. Palau et al.

J. L. Palau et al.

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We thank Referee#1 for his/her careful and constructive comments on our manuscript. We also thank the reviewer for his/her positive review of our paper, recommending its publication after addressing some minor points.

1. General comment:

The authors fully agree with Referee#1's general comments. The referee expressed no doubts in suggesting the paper to be accepted for publishing in ACP, corroborating the scientific significance of the issues addressed in the paper to the atmospheric community.

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2. Specific comments:

(1) Referee#1 says: p. 11970, lines17-18: How is the 4th database (vegetative state) of the Els Ports database used in the analysis here? You can mention it in the text, but should probably state that this particular database is not used further in the analyses discussed in the current paper.

As suggested, we have included the following paragraph in the Revised Version of the manuscript:

“This last database is not used further in the study presented in this paper, although it played an important role when defining the field campaigns (Palau, 2003).”

(2) Referee#1 says: p. 11982, line 17: How does one conclude there is a decrease in transversal dispersion by looking at Fig. 12?

Referee#1 is right; it is a misprint in the text, in the revised manuscript we refer to “(Figs. 6, 7 and 8 and table 1)”.

(3) Referee#1 says: p. 11984, line 4: (Fig. 12 and Table 1). It’s not clear how Fig. 12 shows this. This could be cleared up for the reader by adding another sentence to the description of Fig. 12. It could read perhaps: “Note that values plotted here are listed in Table 1, implying downwind distances between 6 and 33 km.”

As suggested, we have changed the capture of Fig. 12. In the Revised Version it says:

“Fig.12. Comparison between simulated and measured horizontal diffusion for the three different emission schemes performed during the dispersive simulations. Values plotted in this figure are listed in table 1 (downwind distances between 6 and 33 km).”

3. Technical comments:

(1) Referee#1 says: p. 11970, bottom line 27. What is 11.2 g/m³N?

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It's a misprint. Revised text: " 11.2 g/Nm³ " (grams per normal cubic meter).

(2) Referee#1 says: p. 11981, line 1: "when short radiation is higher...". Perhaps change to " when incoming short-wave radiation..."

Done

(3) Referee#1 says: p. 11982, line 18: "slighly" should be "slightly"

Done

(4) Referee#1 says: p. 11982, line 29: Reference to "(Fig. 8)" could be changed to "(compare Figs. 7F and 8C)".

Done

(5) Referee#1 says: p. 12027, 12028: Figures A3 and A4. Be consistent in labels.

Done. We have modified figures A3 and A4, putting new labels in the figures accordingly to the text.

(6) Referee#1 says: Reference problems. Comparing the text with the reference list.

Done. The discrepancies you observed between the text and the reference list have been corrected.

Interactive comment on Atmos. Chem. Phys. Discuss., 5, 11965, 2005.

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