

## ***Interactive comment on “Concatenated non-stationary dispersive scenarios on complex terrain under summer conditions” by J. L. Palau et al.***

### **Anonymous Referee #2**

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#### General comments

The paper addresses the relevant issue of a reliable parameterization of the atmospheric dispersion of a plume during transitional local low wind conditions. The study is supported by an innovative summer campaign giving the evidence of the inadequacy of classical approach, as for dispersion parameters. Only SO<sub>2</sub> has been taken into account as a non reactive pollutant, so leaving apart any chemical reaction.

#### Specific comments

-The title does not fit properly the paper content. A possible suggestion: 'Transitional

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breeze driven plume dispersion on complex terrain under summer conditions’.

-The qualitative description of the results is too detailed and should be shortened both in text and figures (Figures 4-8), making the residual ones more readable.

-Table 1 and Figure 9 give redundant information; the Authors should anyway explain and clarify better the results shown in Figure 9 which mainly support the discussion in the paper.

-Page 10847, 1st row: the reference to the proper tables (1 and 2) and to the figures (only Figure 1) is not clear at that point.

-The Authors seem to look for a good compromise between a simpler turbulence description in terms of dispersion parameters and the simulation of meteorological 3D fields, including local phenomena as breezes and up-slope winds. A 'cost-benefit' analysis in terms of meteorological data base and pre-processors needed and reliability of simulated plume dispersion in the atmosphere might help to give the proper credit to the study.

-The reference to a PhD thesis (of one co-author) written in Spanish seems redundant.

-In general the use of different colors in the figures plays a crucial role, so that a black and white copy does not allow to appreciate them at all. The use also of a further differentiation may improve the interpretation of the results.

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Interactive comment on Atmos. Chem. Phys. Discuss., 8, 10841, 2008.

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