

Interactive
Comment

Interactive comment on “Ship plume dispersion rates in convective boundary layers for chemistry models” by F. Chosson et al.

F. Chosson et al.

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Thank you for your comments. We made good note of the remaining concerns, and we hope that this revised version correctly responds to the questions you have raised.

Reviewer specific comment 1:

Each particle, at each time step, have a specific vertical velocity due to initial buoyancy force, as stated in equation 4, based on the simple plume rise scheme. For each particle and at each time step, we can thus define a specific vertical acceleration due to that initial buoyancy flux, which can be approximated by the change of this vertical velocity between two time step divided by the time step duration. Relationship between vertical acceleration and the equation (4) has been clarified in the revised version of the paper.

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CommentReviewer specific comment 2:

The reviewer suggests changing color scale of figure 2, in order to avoid confusion between maximum temperature difference between plume and background and the plume envelope filled with the same color. The background color of the plume envelope has been changed to remove this problem.

Reviewer technical comment 1:

The reviewer remarks that almost the same symbol -capital $F(t)$ - has been used for both buoyancy flux and dilution rate. This has been changed in the revised paper, where dilution rate is now designed by $D(t)$.

Reviewer technical comment 2:

We are grateful to the reviewer for having spotted several typographic errors, all of which have been corrected in the revised paper.

Interactive comment on Atmos. Chem. Phys. Discuss., 8, 6793, 2008.

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