

Interactive comment on “The two faces of cirrus clouds” by D. Barahona and A. Nenes

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We thank the reviewer for the positive feedback and comments.

Abstract, line 10: I suggest changing “..heterogeneous nuclei to occur.” to something like “heterogeneous freezing to occur”, or “heterogeneous ice nucleation”

Done.

Page 30861 last line: “..inhibition of heterogeneous freezing and . . .” . Should that rather be homogeneous freezing?

Yes. Now it is corrected.

Page 30862, first line in the new section: “though” should be “through”

Corrected.

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Page 30862, line 21: I suggest adding “and” before “hence depends on their size”

Done.

Page 30864, line 20: Water vapor diffusion coefficient is Dv' in the equation and Dv in the text. Does the prime indicate that you use the modified diffusion coefficient? If so, this should be indicated in the text.

Yes it does. This is now clarified after the equation and in section 3.3.4.

Page 30865, line 20: I suggest that you add “d” when mentioning Fig. 4 in the parenthesis.

Done.

Page 30865, line 21: I believe you missed something on the last line “the assumption that . . .?.. does not vary. . .”

Thank you for pointing this out. It is now corrected.

Page 30868, line 14: You also missed something in this sentence: “Since . . .?... is determined by random. . .”

We apologize for this oversight. Corrected.

Page 30873, line 1: Is u term on the same order as D_c ($_$) or rather proportional to D_c ?

It is proportional. The statement has been corrected.

Page 30874, line 7: Which subfigure are you referring to in Fig5?

We refer to Figure 5a in the revised paper. The statement has been clarified.

Page 30874, line 23: Equation for f_{ps} on this page is slightly different from the equation for f_{ps} on page 30871. But are they basically the same?

Thank you for pointing this out. The equation in page 30871 is the correct one. The

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statement has been corrected.

Page 30876. I suggest that you indicate the subfigure when referring to Fig 4 on line 14, Fig 5 on line 21 and Fig 5 on line 28.

Done.

Figures Fig. 1: Please indicate the section number for the Methods section.

Done.

Fig. 2: I believe you have not defined α_d anywhere.

Good point! It is now defined after equation 1.

Fig. 3: I do not think Fig. 3c is mentioned in the text.

Figure 3c was introduced in connection to the assessment of heterogeneous freezing at low T . We now have included further discussion regarding this figure in section 2.

Fig 7: I suggest labeling u , H and T_0 on the figures instead of in the text. This might make it easier to see what the different conditions are for the simulations

Good point. The figures have been labeled.

Interactive comment on Atmos. Chem. Phys. Discuss., 10, 30857, 2010.

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