

Interactive
Comment

Interactive comment on “Aerosol effects on clouds and precipitation during the 1997 smoke episode in Indonesia” by H.-F. Graf et al.

Anonymous Referee #1

Received and published: 3 December 2007

Comments to the Author

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Title: "Aerosol effects on clouds and precipitation during the 1997 smoke episode in Indonesia"

Author Team: H.-F. Graf, J. Yang and T. M. Wagner

Recommendation: accepted after minor revision

General Comments

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Interactive Discussion

Discussion Paper

I think the paper is well structured and useful, as it addresses an important question. I have some suggestion about the figures and the structure. In a few cases eventually write some sentences more to give more information to the reader.

Specific Comments

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p. 17101, l. 20 Please give some more explanation about what you mean with 'several different initial radii'.

p. 17102, l. 3 The convective model should be explained (here or at the beginning of p. 17103) with one-two more sentences, since it is a central aspect of the article. Please explain the most important aspects of the new convective cloud field model.

p. 17102, l. 13 Please write that you use the ERA-40 dataset and eventually give a reference (e. g. Uppala et al., 2005, Quarterly Journal of the Royal Meteorological Society 131: 2961-3012).

p. 17102, l. 23 'These weekly…': Please review this sentence to better connect it in the previous part of the paragraph.

p. 17103, l. 1 As before: please explain in more detail the main aspects of the CCFM and the cloud model.

p. 17103, l. 9 Could you please give some more information about the division in the three cloud types (typical values?).

p. 17103, l. 15 Please explain in more detail why it allows for an intensification of precipitation in polluted areas...'.

p. 17103, l. 19 Why do you used the formula of Berry instead of Kessler? Short explanation of the advantages?

p. 17104, l. 1 As before: why do you used the formula of Beheng instead of Sundquist?

p. 17104, l. 24 How big is the sensitivity of the results if you suppose that the aged aerosol are not such effective as cloud condensation nuclei as you assume?

p. 17105, l. 17 The last sentence of the chapter is not well embedded in the text. Please change the position.

p. 17106, l. 7 Please give a short information about the geographical position of the mountains (Borneo-Malaysia).

p. 17106 Fig. 1 and 2: I have the impression that the choice of the scale for the figures should be different. Would eventually be better to have shorter distances in the lower part (0-120 cm/month) of the scale and bigger in the higher parts? I have also some difficulties to see the improvement of the simulated precipitation compared to the observation. Only over Borneo it is easy to see it. Eventually could you try to plot Fig. 2 a,b,d,e,g,h as a difference from Fig.1?

p. 17107, l. 1 Could you please write an explanation why are they found to the North of the highly polluted area?

p. 17107, l. 4-19 This part has a repetition of the same concept after few lines. Would it eventually be better to change the text to avoid it?

Technical Comments

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p. 17109, l. 14 Fig. 4 instead of Fig. 5.

p. 17114 Caption: please delete one of the two 'simulated by REMOTE-CCFM'

p. 17116 Fig. 4 has too low resolution

Interactive comment on Atmos. Chem. Phys. Discuss., 7, 17099, 2007.

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