Atmos. Chem. Phys. Discuss., 8, S5132–S5133, 2008
www.atmos-chem-phys-discuss.net/8/S5132/2008/

Atmospheric Chemistry and Physics Discussions

Interactive comment on "Monte Carlo simulations of two-component drop growth by stochastic coalescence" *by* L. Alfonso et al.

L. Alfonso et al.

Received and published: 22 July 2008

First, we would like to thank the anonymous reviewers for their comments that will improve the quality of our paper. Our revised version will include several of their suggestions.

Reply to Reviewer # 1

i) The number of bins can be increased since the species accounting formalism substantially reduces the storage requirements. This process is handled by dynamic allocation of memory permitting calculations with thousands of droplets in the initial distribution. For example, for a simulation experiment with two species and 300 particles at initial time (which is considerably larger than the 60 particles we used in our comparison with analytical solutions) only 82 species were created during the entire 3000 sec.

simulation. Nevertheless, during the process, if a specie is destroyed, the memory locations are dealocated. Then, at the end of the process, the memory requirements are even smaller.

ii) The CPU time for only one realization of the Monte Carlo algorithm (a 3000 sec. simulation) is 6.408 sec. in a 2.00 GHz laptop computer, and 1.408 sec. in a 3.7 GHz two-processor Workstation.

iii) As suggested by the reviewer, in the revised version a comparison of the numerical solution of the kinetic collection equation with a realistic kernel, and the numerical solutions obtained with the Monte Carlo algorithm will be presented.

ACPD

8, S5132–S5133, 2008

Interactive Comment