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Atmospheric Chemistry and Physics Discussions

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

Anonymous Referee #1

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In this paper, the authors present a Monte Carlo method to solve the stochastic collection equation for two-dimensional drop distributions. Numerical results are compared with the analytical solution as obtained for a special class of collection kernels.

The paper is well written, clearly organized and shows that the proposed method yields good results for the presented case studies.

However, some questions remain open that should be clarified prior to acceptance of the paper for publication.

i) The authors use a rather small numnber of only 30 bins for the calculations. In cloud models, the number of bins is usually much larger than 30. Is it possible to increase the number of bins in such a way that the calculations are still manageable?

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ii) What is the CPU time required to solve the KCE by means of the Monte Carlo method?

iii) The Long kernel is not used in realistic cloud models. The authors should present results with a realistic kernel and compare them with other approaches to solve the KCE.

Interactive comment on Atmos. Chem. Phys. Discuss., 8, 7289, 2008.