

Interactive comment on “Parameterization of cloud droplet formation for global and regional models: including adsorption activation from insoluble CCN” by P. Kumar et al.

P. Kumar et al.

Received and published: 22 February 2009

We thank the reviewer for the constructive comments.

Section 2: A short discussion should be added to differentiate between when adsorption activation and Köhler should be applied.

Included.

Section 2.1: P 16857: Additional discussion is required on the difference between “stable” and “unstable” equilibria.

Done. We now discuss the behavior (and atmospheric relevance) of combinations of A_{FHH} and B_{FHH} that give the two types of equilibrium curves illustrated in Fig1.

Sectional 3.3: The discussion on the relationship between the “C” constant and A_{FHH}, B_{FHH} is limited to the fitting procedure. It would be useful to add more on the physical meaning of the constant, and their relation with A_{FHH}, B_{FHH} .

We have now included an analytical fit for FHH particles for Constant C as a function of A_{FHH} and B_{FHH} . We also have included description on the meaning of the constant, i.e. being numerically equal to the critical supersaturation of a particle with a reference dry diameter in size.

P. 16865, Fig. 5. Typo in second to last equation. To include ρ_a in denominator of Term 1 on LHS. Remove $G_{s_{max}}$ term in numerator of LHS.

Thank you for pointing out this typo. Corrected.

P. 16867, L 5: Typo in Eq. (33). Please include $G_{s_{max}}$ term in numerator of RHS.

Thank you for pointing out this typo. Corrected.

P. 16867, L 9: Typo in Eq. (34). Please include ρ_a in denominator of Term 1 on LHS.

Thank you for pointing out this typo. Corrected.

P. 16863, L 20: Typo in Eq. (24). Please include ρ_a in numerator of Term 1 on LHS.

Thank you for pointing out this typo. Corrected.

P. 16859, L 18: Replace “ $n^s(s)$ ” with “ $n^s(s)$ ”

Thank you for pointing out this typo. Corrected.

P. 16859, L 19: Replace “0 to s” with “s= 0 to s = s”

Thank you for pointing out this typo. Corrected.

P. 16862, L 16: Change “Eq. (21)” to “Eq. (20)”

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper



Thank you for pointing out this typo. Corrected.

P. 16865, L 2: Change “Eq. (25)” to “Eq. (23)”

Thank you for pointing out this typo. Corrected.

P. 16872, L 2: Change “-2” to “2”.

Thank you for pointing out this typo. Corrected.

P. 16872, L 7: Change “-1” to “1”.

Thank you for pointing out this typo. Corrected.

P. 16872, L 13: Change “sulphate” to “sulfate”

Done

P. 16872, L 20: Change “physiochemistry” to “Physiochemistry”

Done

P. 16872, L 22: Change “Cohard, J. M.” to “Cohard, J. –M.”

Done

P. 16872, L 22: Change “Pinty, J. P.” to “Pinty, J. –P.”

Done

P. 16872, L 23: Change “11 753-11 766” to “11,753-11,766”

Done

P. 16873, L 15: Change “B.” to “Bull.”

Done

P. 16873, L 21: Change “T”. to “Trans.”

Done

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper



P. 16873, L 31: Change “Tellus B” to “Tellus, Ser. B”

Done

P. 16874, L 22: Change “sulphur” to “sulfur”

Done

Section 2.2: Change title from “Activation characteristics of FHH and Köhler particles” to “Activation characteristics of Köhler and FHH particles”

Title has been changed.

Section 3.3: Change title from “Exponent x for FHH particles” to “Exponent x and Constant C for FHH particles”

Changed to “Relating s_c with D_{dry} for FHH particles”

Interactive comment on Atmos. Chem. Phys. Discuss., 8, 16851, 2008.

ACPD

8, S11378–S11381, 2009

Interactive
Comment

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper

S11381

