

Interactive comment on “Kinetic model framework for aerosol and cloud surface chemistry and gas-particle interactions: Part 1 – general equations, parameters, and terminology” by U. Pöschl et al.

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1) I think that the general idea is an excellent one, and in principle it has everything (except heat fluxes) in it 2) However, there are several points, which need to be clarified

a) it is too early to say that this is a master mechanism or even to suggest it as a master mechanism, since - it is still too complex - it should be verified with couple of experiments - see also comments/criticism below b) on different layers presented in

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Figure 2. I think that you have too many layers there. Is it making the whole thing too complicated. E.g. how one can ever separate sorption layer and quasi-static surface layer for small aerosol particles or for liquid droplets. Is there never a hope to receive parameters for all those layers? c) thermal fluxes are missing d) The results of and comparison with condensation/evaporation studies are completely missing. I means studies made by Paul Wagner and myself. There is a recent paper by Winkler et al., (2004 Phys. Rev. Letters) and the other one Kulmala and Wagner, J. Aerosol Sci. 32, 833-841, 2001, which should be mentioned in page 2151 and compared somewhere. e) I started to look more carefully the accommodation coefficients and uptake coefficients defined in the paper and my own ones (Kulmala and Wagner, 2001), and I think that some more work is needed in future for comparison and clarification. f) different mechanisms like Langmuir-Hinshelwood etc. should be defined in appendix.

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