

Interactive comment on “Ternary solution of sodium chloride, succinic acid and water – surface tension and its influence on cloud droplet activation” by J. Vanhanen et al.

Anonymous Referee #1

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The authors present results regarding experimental surface tensions of ternary succinic acid/sodium chloride/water solutions and the subsequent importance for cloud activations predictions.

I think this paper helps to further demonstrate the importance of capturing surface tension in mixed systems, a property which can often be overlooked by the cloud modelling community.

I believe the paper should be published in its current format but I have some minor questions beforehand.

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Interactive Discussion

Discussion Paper



In this paper there is no review of other models presented in the literature. Unfortunately, the community at large will only have the option of using entirely predictive methods when probing the influence of organics or mixed inorganic/organic systems on droplet activation properties. It has been shown previously that such models perform poorly and that binary experimental data is indeed required to reproduce measured behaviour in mixed systems (Tooping et al 2007 Atmos. Chem. Phys., 7, 2371-2398, 2007). In essence, you have also shown that here, yet no comparison with entirely predictive models is given. Could you comment on this?

In figure 6 it would appear that model extrapolations result in surface tensions predictions approach a very high value of 160 mN/m. Does this highlight the range of applicability of the model chosen. Or, at least, does this suggest it is wrong to extrapolate this model beyond the range of concentrations for which it was fitted?

Interactive comment on Atmos. Chem. Phys. Discuss., 8, 7189, 2008.

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