Interactive comment on “Hygroscopic growth and critical supersaturations for mixed aerosol particles of inorganic and organic compounds of atmospheric relevance” by B. Svenningsson et al.

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In this paper, the authors examine the hygroscopic growth and CCN activity of mixtures containing inorganic salts (ammonium sulfate, ammonium nitrate, and sodium chloride) and three model organic compounds (levoglucosan, succinic acid and fulvic acid). Surface tension as a function of carbon concentrations were measured using a bubble tensiometer. The authors then i) use the measurements to develop a parameterization of water activity with respect to molality, ii) test the (ZSR) method for predicting water update, and, iii) predicting critical supersaturations based on the wa-
These are interesting measurements - clearly more of these kind are needed for expanding our understanding of the role of water-soluble organics on CCN activation. I recommend publication provided that the following minor comments are addressed:

1. using ZSR to predict water uptake has been used by the group of S.Pandis for mixed organic inorganic aerosol, e.g.

Cruz CN, Pandis SN Deliquescence and hygroscopic growth of mixed inorganic-organic atmospheric aerosol ENVIRONMENTAL SCIENCE & TECHNOLOGY 34 (20): 4313-4319 OCT 15 2000

Alternate approaches have also been used for water uptake calculations, e.g.,


I would have liked to see some of this explicitly mentioned in the manuscript introduction, as well as to point out why using ZSR is the method of choice.

2. Much of the paper is based on the effect of solubility on CCN activation and hygroscopic uptake. Again, there has been some experimental work published in the literature, and I would have liked to see some of these cited in the manuscript introduction. For example:


3. The figure lines need to be thicker in Figs. 2, 3, 5

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