

## ***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.***

**B. Svenningsson et al.**

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1. There are several papers using ZSR to predict water uptake that could be mentioned and we have now included a reference to a recent review article describing this. We would like to address the comment by the editor by adding the following paragraph in the introduction:

To predict water uptake of pure and mixed aerosols the so-called Zdanovski-Stokes-Robinson (ZSR) method (Stokes and Robinson, 1966) has been the method of choice in several recent studies (Kanakidou et al. 2005 and references therein). The ZSR method relies on the assumption that the individual compounds in a solution do not

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interact. Other approaches have also been used to predict water uptake (e.g. Ansari and Pandis, 2000). Since the ZSR method is relatively simple and very often used we choose to test the ZSR method on the mixtures studied herein.

2. Some references to recent experimental work on cloud droplet activation and hygroscopic uptake are now included. The manuscript already contained a list of articles on CCN activation of particles containing compounds studied in this work. We would also like to add two papers to this list (Hori et al. 2003, Broekhuizen et al. 2004, both showing CCN spectrometer data on succinic acid). The third paragraph from the end of the introduction would thus start:

During the last years several studies on water uptake of organic compounds (Kanakidou et al. 2005 and references therein) as well as of their ability to form cloud drops (e.g. Raymond and Pandis, 20022003, Henning et al. 2005, Kanakidou et al. 2005 and references therein) have been reported in the literature. Among the organic substances analyzed in this study, succinic acid (Cruz and Pandis, 1997; Corrigan and Novakov, 1999; Prenni et al., 2001; Peng et al., 2001; Hori et al. 2003; Bilde and Svenningsson, 2004; Broekhuizen et al. 2004)

3. We will discuss the figures with the ACP production office.

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