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Interactive comment on "Closure between measured and modeled cloud condensation nuclei (CCN) using size-resolved aerosol compositions in downtown Toronto" *by* K. Broekhuizen et al.

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The paper by Broekhuizen et al. presents a very interesting set of field measurement data obtained with state-of-the-art aerosol measurement technology.

With regard to the analysis, discussion, and interpretation of the measurement data, however, I would like to suggest a more comprehensive approach, taking into account other recent studies on water interactions and CCN activation of aerosol particles and the influence of organic compounds.

Among the numerous recent studies providing complementary information and insight

into related atmospheric aerosol and CCN properties, processes, and effects are the following:

Rissler, J. , Swietlicki, E., Zhou, J., Roberts, G., Andreae, M. O., Gatti, L. V. and Artaxo, P.: Physical properties of the sub-micrometer aerosol over the Amazon rain forest during the wet-to-dry season transition - comparison of modeled and measured CCN concentrations, Atmospheric Chemistry and Physics, 4, 2119-2143, 2004.

Henning, S. , Rosenørn, T., D'Anna, B., Gola, A. A., Svenningsson, B. and Bilde, M.: Cloud droplet activation and surface tension of mixtures of slightly soluble organics and inorganic salt, Atmospheric Chemistry and Physics, 5, 575-582, 2005.

Kanakidou, M. , Seinfeld, J. H., Pandis, S. N., Barnes, I., Dentener, F. J., Facchini, M. C., Van Dingenen, R., Ervens, B., Nenes, A., Nielsen, C. J., Swietlicki, E., Putaud, J. P., Balkanski, Y., Fuzzi, S., Horth, J., Moortgat, G. K., Winterhalter, R., Myhre, C. E. L., Tsigaridis, K., Vignati, E., Stephanou, E. G. and Wilson, J.: Organic aerosol and global climate modelling: a review, Atmospheric Chemistry and Physics, 5, 1053-1123, 2005.

Lohmann, U. and Feichter, J.: Global indirect aerosol effects: a review, Atmospheric Chemistry and Physics, 5, 715-737, 2005

Topping, D. O. , McFiggans, G. B. and Coe, H.: A curved multi-component aerosol hygroscopicity model framework: Part 2 - Including organic compounds, Atmospheric Chemistry and Physics, 5, 1223-1242, 2005.

Mircea, M. , Facchini, M. C., Decesari, S., Cavalli, F., Emblico, L., Fuzzi, S., Vestin, A., Rissler, J., Swietlicki, E., Frank, G., Andreae, M. O., Maenhaut, W., Rudich, Y. and Artaxo, P.: Importance of the organic aerosol fraction for modeling aerosol hygroscopic growth and activation: a case study in the Amazon Basin, Atmospheric Chemistry and Physics Discussions, 5, 5253-5298, 2005.

Svenningsson, B. , Rissler, J., Swietlicki, E., Mircea, M., Bilde, M., Facchini, M. C., Decesari, S., Fuzzi, S., Zhou, J., Mønster, J. and Rosenørn, T.: Hygroscopic growth

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and critical supersaturations for mixed aerosol particles of inorganic and organic compounds of atmospheric relevance, Atmospheric Chemistry and Physics Discussions, 5, 2833-2877, 2005.

Interactive comment on Atmos. Chem. Phys. Discuss., 5, 6263, 2005.