This paper reports hygroscopicities of ambient particles and organic component at two sizes (50 and 100 nm) derived from size resolved CCN and particle composition measurements at Ucluelet on the west coast of Vancouver Island in August 2013. These results add to our knowledge of aerosol and organic hygroscopicities as there had been relatively few measurements of aerosol droplet activation properties at coastal sites. The topic is well suited for Atmospheric Chemistry and Physics. Following are my comments and suggestions.

Please include more description (or at least some references) of the size-resolved CCN measurements, and the derivation of $\kappa_{ambient}$. For example, did SMPS step or scan through different sizes? How was the activation fraction derived? How was the multiple charged particles taken into consideration?

It took about 1.5 to 2 hours for a full scan. Did aerosol properties vary substantially during 1.5 - 2 hour periods, given the impact of frequent boat traffic (Fig 4a)? If so, how would this affect derived $\kappa_{ambient}$?

Page 12532, line 24-25: Again, please provide more details about how Sc was derived. The current approach appears to be based on the assumption that particles are internally mixed. Does the size resolved CCN measurement suggest internal mixture at DMA selected sizes?

Page 12533, Line 8-9L: Uncertainties in the particle size (10 %) and instrumental supersaturation (5 %) should lead to much greater uncertainty in $\kappa_{ambient}$ according to Eq. (1). Please include more details on how the uncertainty in $\kappa_{ambient}$ was derived.

Page 12533, Line 19- Page 12534 Line 2: Does the composition measurement in these two size range indicate enhanced sulfate concentration/fraction as suggested? Many $\kappa_{ambient}$ values during August 18-23 are greater than 0.6. Could the larger values of Kappa be due to higher NaCl contribution during this period?

Page 12536 Line 22 to Page 12537, Line 3. There have been a number of studies that derive $\kappa_{org}$ from CCN/ size resolved CCN measurements. For example, Lathem et al., 2013 and Mei et al., 2013 a,b. Please include previous studies in the discussion.

Given the large variation in $\kappa_{ambient}$ and very different backtrajectories, I would suggest derive Korg for different air mass types, instead a single average value. Including comparison and discussion of aerosol hygroscopicity, size distribution, and composition among different airmasses would also strengthen the paper.

Page 12537, Line 20, I think the range of Korg (0.3-0.5) is too high. I am struggling to find an example organic compound that has an effective Kappa in this range.

Supplementary Information, section 1: The mass concentration of organics is derived as the

difference between SMPS and MOUDI measurements. As the two measurements are based on very different principles, this might lead to substantial uncertainties in derived organics concentration. I am wondering if this approach can be validated by deriving the total organics mass concentration, which can then be compared to direct measurements from ACSM.

Supplementary Information, section 1- The derivation of particle density (Eq. S1) is based on the assumption that organics don't take up water. This appears to be inconsistent with very high Korg derived. What is the impact of water uptake by organics on derived particle density, and particle composition?

Figure 3, please consider changing the unit from cm3/m3 to μm^3/cm^3, which is equivalent to μg/m^3 when density is 1g/cm^3.

References:

Lathem, T. L., Beyersdorf, A. J., Thornhill, K. L., Winstead, E. L., Cubison, M. J., Hecobian, A., Jimenez, J. L., Weber, R. J., Anderson, B. E., and Nenes, A.: Analysis of CCN activity of Arctic aerosol and Canadian biomass burning during summer 2008, Atmos. Chem. Phys., 13, 2735-2756, 10.5194/acp-13-2735-2013, 2013.

Mei, F., Setyan, A., Zhang, Q., and Wang, J.: CCN activity of organic aerosols observed downwind of urban emissions during CARES, Atmos. Chem. Phys. Discuss., 13, 9355-9399, 2012.

Mei, F., Hayes, P. L., Ortega, A. M., Taylor, J. W., Allan, J. D., Gilman, J. B., Kuster, W. C., de Gouw, J. A., Jimenez, J. L., and Wang, J.: Droplet activation properties of organic aerosols observed at an urban site during CalNex-LA, J. Geophys. Res., 118, 2903-2917 10.1002/jgrd.50285, 2013.