In their response and in the revised paper, the authors write that larger particles in the area are more from the impinging background aerosol than local sources. They also say that these larger particles (roughly 300-500 nm) are more hygroscopic and are the preferred nuclei for the fog droplets. These statements appear to be mostly in response to my question about whether the fogs are influenced by the city's emissions. The response as in new section 4.2.1 seems mostly reasonable and interesting. The new section 4.2.2 also seems reasonable.

In their responses, the authors say that a sharp change in kappa around 300 nm is implausible, yet they state in section 4.2.1 that Laborde et al. (2013) indicate these larger particles (apparently 265 nm and greater) are more hygroscopic than the smaller particles, and later that "the dominant contribution to particle mass and bulk composition comes from larger particles, which are mainly from the background aerosol." This seems to me to be a little contradictory. If the authors agree, it should be modified accordingly.

We do agree with the referee that somewhat larger kappa values can be expected for particles with diameters above the size range covered by the CCN measurement. However, the extremely sharp change of the measured kappa value between 295 and 310 nm dry diameter is unphysical (given the fact that these are campaign median values), as argued in the previous author reply. We believe that these two aspects and corresponding implications for the data analysis are already addressed with the following discussion in the manuscript:

In Sect. 4.1:
"The abrupt change in κ between 295 and 310nm dry diameter is unreasonable and may be attributed to increased experimental uncertainty of CCN measurements at very low SS."

In Sect. 4.2:
"It is possible that particles in the dry diameter range above 300 nm have somewhat larger κ-values due to potential addition of hygroscopic material via fog processing. By assuming a higher κ-value of e.g. 0.34 instead of 0.14, the $SS_{\mathrm{peak}}^{\mathrm{upper}}$ inferred from the 2-µm- cut-off measurements would become approximately equal to $SS_{\mathrm{peak}}^{\mathrm{lower}}$ (which is virtually independent on κ, see Sect. 3.7). Therefore, using a somewhat larger value would bring the $SS_{\mathrm{peak}}^{\mathrm{upper}}$ and $SS_{\mathrm{peak}}^{\mathrm{lower}}$ (as well as $D_{\mathrm{act}}^{\mathrm{lower}}$ and $D_{\mathrm{act}}^{\mathrm{upper}}$) to closer agreement. However, in the interest of providing a conservative estimate of the likely range of the effective peak supersaturation in the fog, the lower value of 0.14 is used."

In Figure 0.1 of their responses, the authors look at variations of diameters and kappas to justify the cut points, and I think this basic approach is fine, but they should also consider the 100% RH diameter of a dry 400-600 nm particle with a larger kappa value (e.g. 0.5).

Figure 0.1 visualizes the fact that the critical supersaturation of all particles with a certain equilibrium diameter at RH=100% (2.6 µm in this example) is virtually equal, independent of their hygroscopic properties (i.e. κ-value). This figure is provided to support the following statement made in Sect. 3.7: "$SS_{\mathrm{peak}}^{\mathrm{lower}}$ is virtually independent of the κ-value used to infer it from $D_{\mathrm{thres}}^{\mathrm{wet}}$, because in this approach the κ-Köhler theory is just used to extrapolate the Köhler curve over a very small change in RH and droplet diameter". It is important to note that the dry diameter and

equilibrium diameter at RH=100% uniquely define the κ-value of the particle (i.e. the smaller the dry diameter, the larger the corresponding κ-value). A particle with a dry diameter of 500 nm and a κ-value of 0.5 has an equilibrium diameter of >5 µm at RH=100%. It would thus form a fog droplet, either truly activated or in stable equilibrium (see next comment and answer).

I am pleased that the authors have clearly given very serious consideration to this problem. I am not convinced the authors are correct in describing ALL of the fog droplets as having occurred on "activated" particles, and I strongly suggest a caveat be added that some of the largest particles that acted as nuclei for the fog droplets may not have been truly activated. It can be surprising at how long it takes for some larger particles to activate, particularly in a slowly condensing system.

We believe that this caveat is already addressed with the following discussion in Sect. 4.2:
"It is important to note that, large and very hygroscopic CCN with critical droplet diameters above ~5 µm may potentially remain in stable equilibrium even under developed fog conditions, coexisting with smaller and/or less hygroscopic CCN that got truly activated (e.g. Phinney et al., 2003). The reason for this phenomenon are kinetic limitations (Nenes et al., 2001): depending on the conditions, the CCN with smaller critical wet diameter require less time to grow across their critical size compared to the CCN with much larger critical diameter. However, this phenomenon does not invalidate data analysis approach for retrieving the $D_{\mathrm{thres}}^{\mathrm{wet}}$, which uses the minimum in the droplet size distribution between the modes from unactivated droplets in stable equilibrium and truly activated droplets, because the large CCNs would show up in the uppermost tail of the droplet size distribution."