Most of the key issues in the previous version of the MS have been addressed. The inclusion of size-resolved AMS chemical composition in particular makes the paper much more valuable. The conclusions are interesting and provide new insights. I recommend publication after the corrections below are made.

Corrections:

Page 3, Line 24: Throughout the text of the MS, the device to measure number size distributions is called Twin Differential Mobility Particle Sizer (TDMPS), but in table 1 it is called SMPS.

Page 4 Line 8: Please clarify whether this is meant to say that scans with RH between 87% and 93% (3% in either direction) were accepted, or whether the acceptable range was 88.5% – 91.5% (3% symmetrically around the setpoint).

Page 9, Line 11: "mean geometric diameter" should be "geometric mean diameter"

Page 12, Line 13: "decreased to 10 C" – This reads as if a fast decrease in T to 10C were observed. It would be better to write "decreased to an eventual nighttime minimum of around 10 C"

Page 14, Line 13: "Here we assume that the weather condition and boundary layer height were similar during two time periods (see meteorological parameters in Fig. 3). Therefore, the effect of boundary layer dynamics on the change in CCN number concentration could be ignored": The second sentence should be worded more carefully, such as "Therefore we assumed that …..could be ignored.", because there is still no guarantee that BL effects were indeed absent.

Figure 1: The contour plot still has a linear scale on the concentration, which leads to fast saturation of the plot in both the low and the high concentration range and considerable loss of information on the shape of the size distribution. A logarithmic concentration scale would work better. What is the unit and axis for H2SO4? Please note the meaning of the black dashed lines in the contour plot in the caption.

Figure 2: The axis for wind speed is labeled wrong. It would be nice if the beginning and end of the NPF events were marked in this plot, too.

Figure 3: Please mark the particle formation periods (see also comment below).

The paper should go through another English edit, as language errors sometimes interfere with the understanding of the content. The most critical error is this one:

Page 1, Line 19, page 13, line 5, and page 16, line 2: "were dominated" – this should probably read "dominated": if I understand the authors correctly from the context, they mean to say that sulfate and ammonium made up the major fraction of chemical components in those instances. "Were dominated", however, means that some other chemical species is more important ("dominated by what?"). Together with the fact that it

is not entirely obvious which time frame in Figure 3 this repeating statement refers to, this leaves the reader guessing. Moreover, based on the other plots, it is not completely clear that sulfate and ammonium were indeed the dominating species in the particle formation period.

There are multiple other language errors, including, but not limited to:

Use of the word “potential”: Page 2, Line 7: what are “potential CCN”? The insecurity in the statement is sufficiently stated by the word “possibly”; Page 13, Line 3: “were major potential contributors to the particle growth” – better: “were potentially major contributors…”

Page 5, Line 15: “The detail description about the calculation was given…”

Page 6 , Line 3: “e.g.” should be “i.e.”

Page 7, Line 19: “This reason was given as follow” – “The reason is given as follows”

Page 8, Line 13: “is referred to represent” should be “refers to”

Page 10, Line 24; “grew versus time” – “grew with time”

Page 10, line 25: “refere“

Page 11, Line 13: “cities away tens of kilometers from the station via transportation”; Line 18: “did not increased”

Page 12, Line 10: “could result in an increasing of inorganic fraction in particle phase”

Page 13, Line 7: “While, the nitrate accounted for a minor fraction, which also observed by Zhang et al. in Pittsburgh (Zhang et al., 2004a).” (This is not even a full sentence.)

Page 15, Line 9: Another confusing wrong use of the word “dominated”.

Page 17, Title: “Reference” instead of “References”