This study analyzes the ultrafine particles (UFP) and/or growth and their potential contribution to cloud properties in the eastern Canadian Arctic Archipelago. The particle size distribution and cloud condensation nuclei (CCN) concentration were measured on board the CCGS Amundsen during summertime in 2016 when UFP and growth events were frequently occurred. Low hygroscopicity parameter (κ) implies that significant proportion of particles were non-hygroscopic, like organic, mostly originated from open water within the Arctic and the κ value is comparable with other studies. The CCN concentrations increased during all UFP and/or growth events suggest that small particles in Arctic region can affect cloud radiative properties by contributing to cloud droplet number concentration (CDNC). The paper is well organized with data description, analysis and conclusions that have meaningful implications to the Arctic study. The manuscript is relevant to the readers of ACP and I recommend publication if the following comments can be addressed.

Line 23: Add reference ('summer sea ice extent that is steadily declining [ref].')
The method for deriving $D_a$ contains an important assumption that particles are internally mixed. Is an internal mixture assumption of particles reasonable in this region? What about externally mixed particles?

The author defines the background period as times when $N_T < 500 \text{ cm}^{-3}$? Is it based on the measurement (average value except for UFP and growth event? Or total average value?) or based on the reference? Add an explanation in the Section 2.4.

For three regions, particle and CCN number concentration appear to be quite different as well as $\kappa$ value. Is this difference by regional effect? Or air mass back trajectory effect during each period? It would be better to add detailed description of Figure 2 and Table 1.

In connection with the previous comment, can the author expect that all three regions give a same conclusion when the plot the same graph with Fig. 5 by dividing it into three regions, not the whole regions?

This is not a mandatory but it might be clear if the author shows the history of air mass during the campaign period.