We sincerely thank the reviewer #2 for carefully reading of our manuscript, for his review and constructive comments. We have reviewed the comments and have revised the manuscript accordingly. Our response is given in a point-by-point manner below. Reviewer comment (RC) Authors answer (AA).

There is a lot of value in these datasets and descriptions, and the robust and detailed comments from reviewer#1 are very good and improve the manuscript. My comments:

We sincerely thank the reviewer for highlighting the value in these datasets. We indeed agree that comments from reviewer 1 were significant and improved the manuscript.

Major comments:

RC1: The data are described and presented as if the data are perfect. There is no description or estimate of error or uncertainty in the data, no discussion of data processing, limited discussion of calibration, and no discussion of potential sampling artefacts aside from identifying periods where inlets are frozen. This is quite challanging to do, but if the idea is to put this dataset out into the public domain as being representative ambient data, then it needs a complete description.

AA1:

We agree with the reviewer that an extended description was needed. Thus, a discussion about possible uncertainties in the dataset, calibration and data processing was added in the revised manuscript. Table 1 of the manuscript already presented some of the uncertainties that have been found in literature. On top, the following text was added in line 150:

“ The major sources of uncertainties of the cloud spectrometers can be coincidence, dead time losses and changing velocity ratio (Guyot et al.,2015). The uncertainty of estimation of sizing at the cloud spectrometers was as 20% and of the number concentration was as 16% (Baumgardner, 1983; Dye and Baumgardner, 1984; Baumgardner et al., 2017). According to Lance (2012), it was observed that for CAS at ambient droplet concentrations of 500 cm^{-3} there was 27 % undercounting and a 20 %–30 % oversizing bias. In our case, during PaCE campaigns the droplet number concentration values we monitored were in the majority of cases less than 300 cm^{-3}. These number concentration values lead us not to take coincidence, dead-time losses, and VAR uncertainties into consideration in this analysis. LWC has a significant uncertainty of 40% (DMT manual 2011). The FSSP derived ED and LWC had an uncertainty of 3 µm and 30 % in mixed-phase clouds (Febvre et al. ,2012).”

The discussion regarding calibration was extended. The following text was added in line 129:

“Cloud spectrometers (in our case CAS and FSSP-100) are calibrated for size measurements but not for number concentration measurements. The instruments faced extreme conditions during the whole campaign, in terms of frequent changes in wind direction, windspeed and sub-zero temperatures. Despite the calibration procedures we should always keep in mind that extreme meteorological conditions could possibly lead to unexpected performance.”

The data limitation and processing were analyzed in detail in Doulgeris et al, 2020. To give more details also in the current manuscript the discussion regarding data processing and possible artifacts was extended. The following text was added in line 199:

“..or fully blocked. Partially or fully blocked probes were also visible in raw data. To detect blocked probes, Nc was carefully investigated for the whole data set. When a sudden decrease just before a sudden increase in droplet number concentration was occurring, we had a clear sign of probe inlet freezing. This behavior was observed due to the opening of the probe inlet becoming smaller (from the accumulation of snow/ ice) and resulted in a raised probe air speed. During data evaluation we considered that the probe air speed was constant. This abnormality in the Nc was happening due to the underestimation of the probe air speed.”

The following text was added in line 206: “ … the wind direction since it was not sampling isokinetically”.

Minor comments:

RC2: *It can be very difficult to obtain instrumenet manuals. Sometimes urls change and links become defunct. Is there a way in which the relavent manuals can be provided with th manuscript, or permament links established?*

AA2:

We agree with the reviewer that it is very difficult to obtain instrument manuals. The manuals were provided to us along with the instruments purchase and we don’t have the right to publish them. Their online availability is dependent on the instruments manufacturer. However, we provide all the existing manuals that are available online in our reference list (DMT Manual, 2009; DMT Manual, 2011).

RC3: *With time there can be changes to firmware used during data aquisition, and sometimes this can affect. Were there any changes in Firmware between projects? The software and firmware used for data aquisition/processing should at least be documented in some form of table.*

AA3:

We used one version of the PADS software for the CAPS and one version of PACS software for the FSSP during all PaCEs. The above info was clarified in line 142 of the manuscript “The ground-based in-situ cloud measurements provided the cloud and precipitation size distribution. On top, the PADS 2.5.6 software that was used for the data acquisition of CAPS measurements (DMT Manual, 2011), derived the number concentration (Nc, cm^{-3}), liquid water content (LWC, g cm^{-3}), median volume diameter (MVD, μm) and effective diameter, (ED, μm). For the FSSP100, Nc, LWC, MVD and ED were also derived using the same equations (Doulgeris et al., 2019), since we have used an older software for data acquisition (PACS 2.2, DMT). “

Regarding the data analysis we clarified in code availability section that “Software developed to process and display the data from the cloud ground base spectrometers are not publicly available and leverages licensed data analysis software (MATLAB). This software contains intellectual property that is not meant for public dissemination.”

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