Responses to comments posted by Referee #1

We thank the first referee for reviewing our article and providing beneficial feedback. Several unclear issues were clarified and significantly helped to improve the presentation of the campaign. We answer all comments in the following text. Our answers are in **bold**.

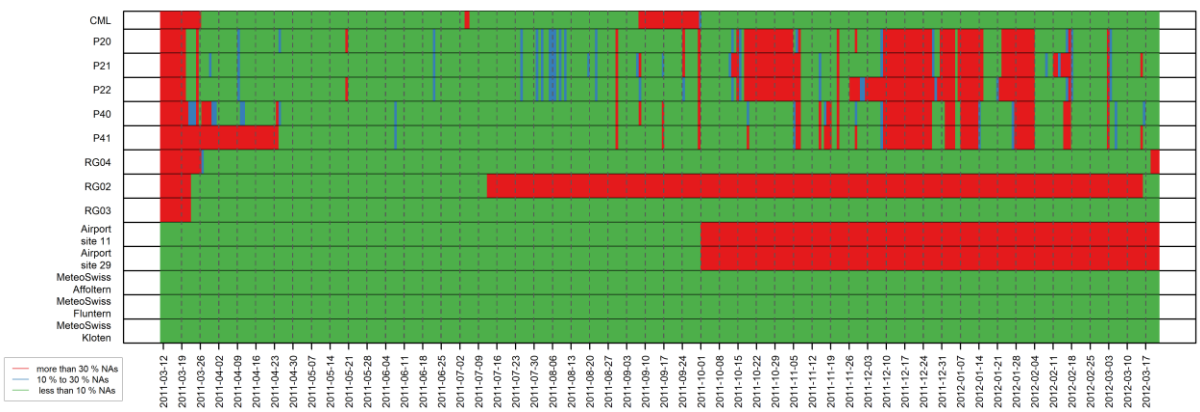
General comments

- Chapter four is not consistent in its content: While 4.1 does only give a summary of past activities on dry/wet classification with the presented data, 4.2 and 4.3 also include open issues with regard to wet antenna attenuation and DSD estimation. In 4.4 the issues from the preceding sub-sections are (partly) repeated with less structure and additional issues are presented. The whole section 4 should be improved by restructuring its content - for example in sub-sections covering the already conducted applications of the data set and the unsolved issues which could be tackled in the future - in a consistently manner.

Chapter 4 has been restructured into two main subsections. First subsection (4.1 Former application) deals with the past applications of the data set and contains three separate parts (4.1.1 Dry/wet classification and baseline estimation, 4.1.2 Wet antenna attenuation and 4.1.3 DSD retrieval and DSD related errors). The second subsection (4.2 Outlook) is devoted to the outlook.

- For quick exploration and convenience of the data user a global overview of the data availability and data issues (flags) describe in section 2.5 should be added both to the manuscript and the event calendar view in the html viewer. This would be most important for the CML data and could be done e.g. with an additional figure in the manuscript showing time vs data availability/flags and likewise or with and an additional calendar view in the html viewer. The daily data availability charts are fine, but it takes rather long time to select e.g. the “best” summer month for a certain application. (see Fig. 2 in van Leth et al., 2018)

The figure was added to the appendix of the manuscript and in the html viewer.



- An additional kml file of the observation locations in the data publication would add further convenience for the user of the data.

The kml file was added to the Zenodo repository.

Detailed comments:

p.1 l.2f.: Here you show CML use cases which are not further described in the text. I suggest to either give a short overview of the retrieval of such variables and the potential of the presented data set or to concentrate on rainfall as target variable as you did consistently in the manuscript

The second sentence was changed. Now we do not address the issue of all presented cases but focus mainly on the rainfall.

The changes in the original text are in red:

Commercial microwave links (CML) in telecommunication networks can provide relevant information for remote sensing of precipitation and other environmental variables, such as path-averaged drop size distribution, evaporation, or humidity. T~~o address this issue, t~~he CoMMon field experiment (COmmercial Microwave links for urban rainfall MONitoring) mainly focused on the rainfall observations by monitor~~ed~~ing a 38-GHz dual-polarized CML of 1.85 km path length at a high temporal resolution (4 s), as well as a collocated array of five 5 disdrometers and three rain gauges over one year.

p1. l.15: delete “also”

Deleted.

p2. l.20: Use CML attenuation rather than microwave attenuation to be more consistent (e.g. with p.2 l.25).

“microwave attenuation” was replaced by “CML attenuation” in p2. l.20

“Attenuation data of microwave links” was replaced by “Attenuation data of CMLs” in p12. l.204

“microwave attenuation” was replaced by “CML attenuation” in p14. l.216

p.2 l.25ff.: Refer to the availability of open source packages which for CML processing accompanied by small test data sets (e.g. https://github.com/overeem11/RAINLINK and https://github.com/pycomlink/pycomlink).

Sentence "Nevertheless, there are openly available tools for CML rainfall information processing and mapping (e.g., Overeem et al., 2016; Chwala et al., 2020)." was added to p.2 l.27.

Corresponding citations were added to the references.

Overeem, A., Leijnse, H., and Uijlenhoet, R.: Retrieval algorithm for rainfall mapping from microwave links in a cellular communication network, Atmos. Meas. Tech., 9, 2425–2444, https://doi.org/10.5194/amt-9-2425-2016, 2016.

Chwala, C., Keis, F., Graf, M., Sereb, D., and Boose, Y.: pycomlink software package, v0.2.5, available at: https://github.com/pycomlink/pycomlink, last access 6 March 2021, 2020.

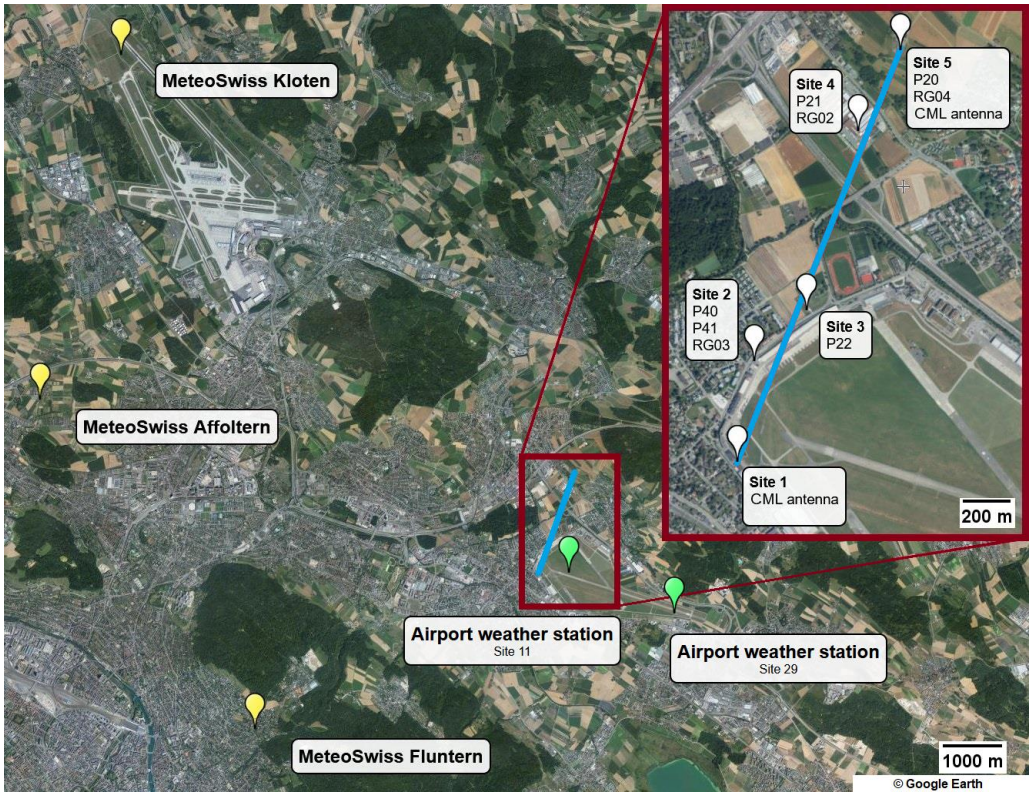
p.3 l.57f.: Add citation stating that parameter b is close to 1 for a certain frequency range (e.g from ITU).

The following citation was added in the text and the references.

ITU-R: ITU-R P.838-3, available at: http://www.itu.int/dms_pubrec/itu-r/rec/p/R-REC-P.838-3-200503-I!!PDF-E.pdf, last access: 6 March 2021, 2005.

p.4 Figure 1: Use different colors for the zooming window and the CML. You also could plot the CML in the un-zoomed map without the disdrometers etc. for a better overview.

The colour of the CML was changed to blue and the un-zoomed link path was added.



p.4 Caption Figure 1: The Figure caption states “the direction of the link” please change to “the path of the CML” and “are less than 6 to 10 km” to “are within 6 to 10 km”.

Both phrases were changed. The changes in the original caption text are in red:

… The ~~direction of the link~~ path of the CML is in ~~red~~ blue ...

… The MeteoSwiss weather stations (yellow pins) are ~~less than~~ within 6 to 10 km ~~away~~...

p.4 l.90: Be more precise about the quantization of the received signal

The changes in the original text are in red:

The resolution of the transmitted power (Tx) was 1 dBm and for received power (Rx) it was ~~approx.~~ 1/3 dBm expressed to one decimal place.

p.5 l.95: Make clear that even with a shield wet antenna attenuation can potentially be a problem due to dew

The changes in the original text are in red:

During the measurement campaign, plastic shields were installed on the antennas on 6 October 2011 to avoid water films on the antenna radomes and to eliminate wet antenna attenuation due to rainfall. However, the wet antenna attenuation due to dew cannot be prevented.

p.5 l.108ff: Use plural or singular for rain gauge(s) consistently.

The changes in the original text are in red:

Deployed 50 cm from the ground, ~~it~~ they had a sampling area of 400 cm^2. ~~Its~~ Their bucket content of 4 g corresponded to the resolution of 0.1 mm of rain. The logger~~s~~ had a time resolution 0.1 s and ~~its~~ their time drift was less than 2 min per month.

p.6 l.117: Rephrase to “CML attenuation data is available for the period between …”.

Rephrased to: “CML attenuation data is available for the period between...”

p.7 l.119: State again that the reading is instantaneous.

The changes in the original text are in red:

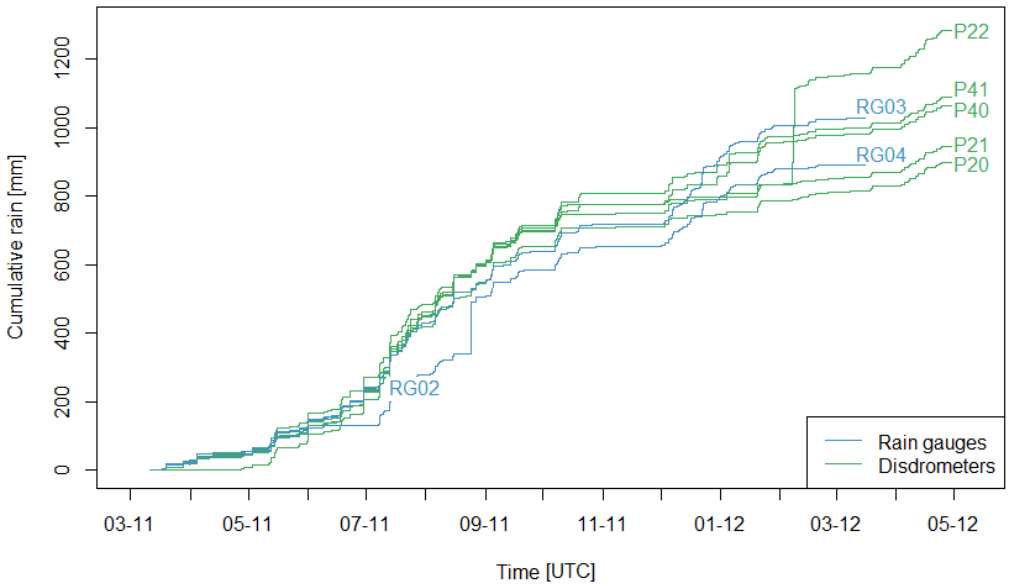
The sampling interval of the instantaneous readings was 4 s.

p.9 Figure 5: You could identify the individual rain gauges and disdrometers with small labels. For the caption you could move the data availability etc. to the running text.

The labels of individual rain gauges and disdrometers were added. The caption regarding the data availability is already covered also in the running text. The description of the device outages is a substantial part for understanding the graph, therefore a short link to that description in the running text was written

The changes in the original text are in red:

Figure 5. Comparison of cumulative rain of the three rain gauges and five disdrometers. There were recorded several outages, suspicious measurements and technical issues, such periods are further described in the Data quality and reliability chapter. ~~The operation of rain gauge was interrupted in July 2011. Another rain gauge was partially blocked from the middle of June 2011 until the 6 July 2011. The same rain gauge recorded unrealistic rainfall in August 2011. The outages of disdrometers between December and February caused an underestimation of rain amounts in this period. Disdrometer P22 recorded unrealistic rain amounts on 7 and 8 February 2012.~~ Despite this, both types of devices are, in general, in good agreement.



p.10 l. 164f: Here as well as in the html viewer it is unclear from which observation the daily cumulative rainfall depth is used. Please provide this information in the manuscript as well as in the html viewer.

The changes in the original text are in red:

The intensity of red colour in the campaign calendar describes the daily cumulative rainfall depth based on RG03, which enables the user to choose the most interesting days and explore them further.

This information was added also to the html viewer.

p 14. l.213: Delete “last, but not least”.

Deleted.