Response to RC1:

We thank the reviewer for their thorough reading of our manuscript, their appreciation of the utility of disdrodb, and their strong support for the publication of this work. Below we address the specific comments and outline the changes made to the manuscript.

Comment 1. Please use the citations as suggested by WMO for the WMO-Guide nr. 8 to meteorological instruments and measurements of observation: World Meteorological Organization (WMO). Guide to Instruments and Methods of Observation (WMO-No. 8), Volume I. Geneva, 2024. see https://library.wmo.int/records/item/68695-guide-to-instruments-and-methods-of-observation

Thank you for pointing this out. We have updated the citation for the WMO Guide in our bibliography to strictly follow the official formatting suggested by the WMO.

The WMO citations in the bibliography appear now as:

- WMO: Manual on Codes (WMO-No. 306), Volume I.1., Tech. rep., World Meteorological Organization, ISBN 978-92-63-10306-2, https://library.wmo.int/idurl/4/35713, 2019.
- WMO: Guide to Instruments and Methods of Observation (WMO-No. 8), Volume I – Measurement of Meteorological Variables, Tech. rep., World Meteorological Organization, ISBN 9789263100085, https://doi.org/10.59327/WMO/CIMO/1, 2024

Comment 2. ***I assume that you have produced Figure 4 yourself, but in the text you are mentioning that the partitioning is based on Friedrich et al. (2013). I suggest to add this information also in the figure caption.***

Figure 4 was produced by us, but the conceptual partitioning framework is indeed inspired by Friedrich et al. (2013). Following your suggestion, we have updated the caption of Figure 4 to explicitly acknowledge the source:

"Schematic illustration of particle size–velocity spectrum partitioning, inspired by Friedrich et al. 2013 and derived from theoretical fall velocity–particle size relationships (see Appendix B). The hydrometeor masks are automatically adjusted according to the station altitude."

Response to RC2:

We sincerely thank the reviewer for their valuable feedback and critical evaluation of our manuscript. We appreciate the recognition that our paper is well-organized, comprehensive, and serves as a good reference for the community. Below we address the two specific concerns raised.

Comment 1. One suggestion is to heavily pare down the text in the introduction. This is not a review article and the reader is not here to read a comparison of different rain gauge technology.

We understand the reviewer's concern regarding the length of the introduction. However, the choice to introduce and compare conventional catching gauges alongside non-catching instruments was a deliberate structural decision. As noted by Reviewer 1, our goal was to make this article a practical, "one-stop resource".

As the landscape of meteorology evolves, non-catching sensors and disdrometers have the potential to play an increasing role in operational precipitation monitoring, shifting away from being purely specialized research tools. We therefore believe it is vital to inform non-expert users of the fundamental differences between these technologies. The detailed discussion of measurement principles, limitations, and uncertainties serves to raise awareness among users regarding pitfalls that are often overlooked, or whose information is otherwise scattered across a wide body of literature.

Comment 2. I also question the authors assertion that disdrometers can measure down to 0.01mm/hr of rainfall. Please provide a citation here. 0.01mm/hr is very very light rainfall (extremely light drizzle).

We thank the reviewer for catching this. There was a typographical error in the text; we intended to state 0.01 mm/h instead of 0.001 mm/h.

We agree that 0.01 mm h^{-1} corresponds to extremely light precipitation. However, this threshold is within the theoretical detection capability of modern disdrometers, provided that sufficiently small drops are sampled over an appropriate time interval. Rees and Garrett (2021), for example, showed through sampling-statistics simulations that even a collection area as small as 2 × 2 cm^2 can be sufficient to isolate individual drops at a rainfall rate of 0.01 mm h^{-1} for 1 min sampling intervals. This area is substantially smaller than the effective sampling areas of the disdrometers evaluated in our study.

The disdrometers considered in *disdrodb* reliably detect drops larger than approximately 0.5 mm in diameter. To further support this point, we provide below an illustrative calculation (Fig. 1) showing the rainfall rate associated with the detection of a single drop as a function of sampling interval and drop diameter, assuming a PARSIVEL sampling area of 54 cm^2. This calculation demonstrates that, for detectable drop sizes and classical disdrometer sampling intervals, a single detected drop can correspond to rainfall rates at or below 0.01 mm h^{-1}.

We have revised the manuscript accordingly, corrected the typographical error, and added the citation to Rees and Garrett (2021):

"...can measure precipitation intensities below 0.01 mm/hr for 1-min measurement intervals (Rees and Garrett, 2021).

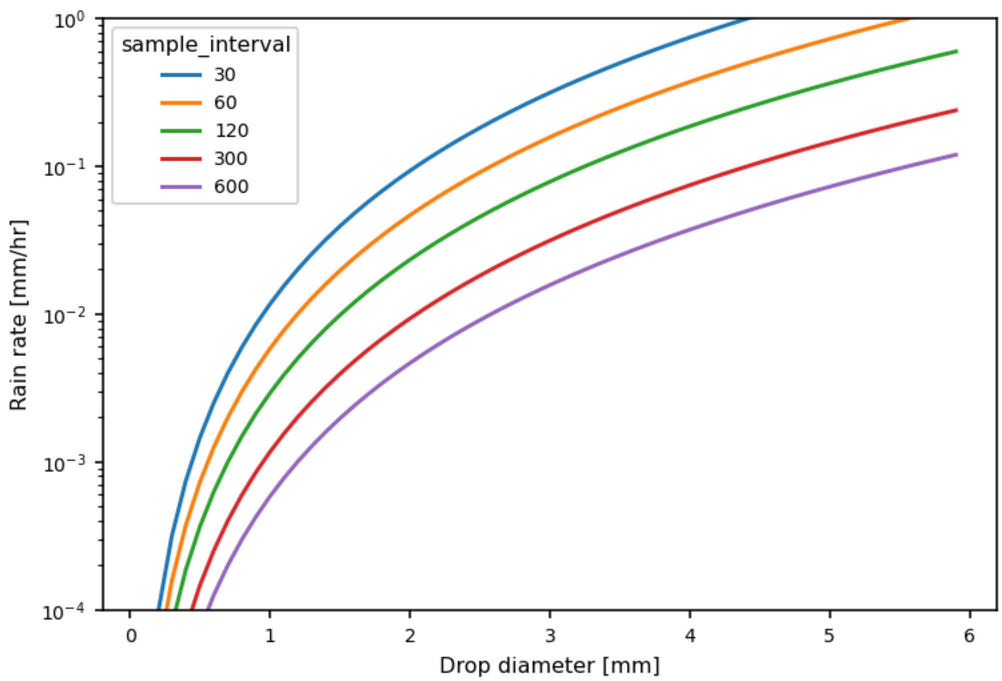

Fig. 1. Rainfall rate equivalent to the detection of a single raindrop by a PARSIVEL disdrometer. Values are shown as a function of sampling interval (in seconds) and equivalent spherical drop diameter (in millimeters), assuming an effective sampling area of 54 cm^2**.**

References

Rees, K. N., & Garrett, T. J. (2021). Idealized simulation study of the relationship of disdrometer sampling statistics with the precision of precipitation rate measurement. *Atmospheric Measurement Techniques*, *14*(11), 7681–7691. https://doi.org/10.5194/amt-14-7681-2021

Additional changes

The main additional changes implemented in the revised manuscript are summarized below:

1. **Authorship correction**
   In the first submission, we inadvertently forgot to include Prof. Remko Uijlenhoet as a co-author. He contributed to the writing and review of the manuscript throughout all stages, in addition to taking part in extensive discussions during the design of DISDRODB together with several other colleagues. He has now been included as a co-author.
2. **Stylistic and editorial revisions**
   We made several minor stylistic corrections to improve the clarity and flow of the text. These changes are visible in the track-changes version of the manuscript.
3. **Table formatting**
   We restructured the layout of Table 1 so that it fits better within an A4 page. No changes were made to the content of the table.
4. **Consistency of mathematical notation**
   We improved the consistency of the use of roman font in symbol subscripts, for example for mass, water, backscatter, extinction, forward, air, scattering, and incident abbreviations.
5. **Consistency in velocity notation**
   We standardized the notation of the diameter-dependent fall velocity as v(D) troughout the manuscript, replacing inconsistent occurrences of V(D).
6. **Additional references**
   We added two recent references: Su et al. (2026) and Chinchella et al. (2026).
7. **Consistency in cross-references**
   We made the use of “Sect.”,“Fig.”, “Eq.” consistent throughout the manuscript.
8. **Appendix C revisions**
   In Appendix C, which describes DSD integral parameters, we updated the equations so that the drop diameter (D) is expressed in millimeters instead of meters, ensuring consistency with the rest of the manuscript.
9. **Correction of Equation D10**
   We corrected exponent errors in Equation D10 of the double-moment normalization framework.

References

Chinchella, E., Cauteruccio, A., and Lanza, L. G.: On the accuracy of optical disdrometer measurements, Atmospheric Research, 336, 108 865, https://doi.org/10.1016/j.atmosres.2026.108865, 2026.

Su, J., Miao, C., Zwiers, F., Beck, H., Jones, P., Sun, Q., Slater, L. J., Berghuijs, W. R., Wada, Y., Rosenfeld, D., Gou, J., Wu, Y., Tarolli, P., Borrelli, P., Panagos, P., Alexander, L. V., Zhang, Q., Hu, J., Min, S.-K., Samaniego, L., Duan, Q., Destouni, G., Marengo, J. A., Modarres, R., and Sorooshian, S.: Precipitation observing network gaps limit climate change impact assessment, Nature, https://doi.org/10.1038/s41586-026-10300-5, 2026.