Atmospheric
Measurement
Techniques
Discussions

Interactive comment on "Calibration of the 2007–2017 record of ARM Cloud Radar Observations using CloudSat" *by* Pavlos Kollias et al.

Anonymous Referee #2

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The present manuscript describes the efforts of the Authors to calibrate a long series of ground-based radar measurements using space-borne radar measurements from CloudSat. This task is all the more important as it can affect the quality of atmospheric retrievals. Moreover, the calibration of such a long time series on a common ground helps greatly the study of the climate on such time scales The article provides in-depth information into the operation and maintenance of the ARM radar network. As such, it makes publicly available information that otherwise would be known only to the few expert users/members of the ARM program. For that alone, this manuscript is worth publishing. The Authors follow a clear path to describe their datasets, its quality control, and the methods to collocate and optimize the calibration assessment. Various

graphs provide a nice illustration of the performance of the proposed method. Before publishing this article, these are the points I would like the Authors to address: 1. The article needs a serious editorial revision to correct for grammar errors and typos. In particular, the Authors should revise the tenses of the verbs for consistency. 2. Please provide a table listing the various acronyms, and please define these acronyms in the article at their first occurrence. 3. As a general question, would the statistical method that you use (to match the mean profiles) work if you also match the envelope of the CFAD (lower and upper quantiles)? This envelope may have useful information, e.g. on the variability of the reflectivity profile over time or space... 4. Would the Authors see any merit/advantage in applying their optimal calibration method to other satellite datasets collocated with ARM radars? Could you please comment on this in you article?

Please also note the supplement to this comment:
https://www.atmos-meas-tech-discuss.net/amt-2019-34/amt-2019-34-RC2-supplement.pdf