

Dear Referee,

We would like to thank you for the very useful suggestions to improve the quality of the manuscript. Please see below our response to the comments.

In addition, we have made additional minor modifications to improve the overall readability. These include: adopting the standard terminology of Doppler spectra and Doppler moments to refer to the final G-band radar data products, using the universal date format (YYYYMMDD_HHMMSS) to name the data files, and adding new references to provide more context to the analysis performed in this work.

All the changes are highlighted in the revised manuscript.

Sincerely,
The Authors

General Comments:

This manuscript presents a new dataset containing triple-frequency, vertical-pointing radar (CloudCube) data during the EPCAPE field campaign along the California coastline. This dataset is both unique and useful in that it contains co-located G-band observations (238.8 GHz) with lower frequency channels (Ka- and W-band). Importantly, these are the first atmospheric observations at this frequency (238.8 GHz), which can detect much smaller hydrometeors (cloud and precipitation) than the Ka- and W-band radars. Though I'm unfamiliar with calibration techniques for radars, the explanation is clear and sufficient. The dataset itself is easily accessible on Zenodo and complete, with any missing data explained (Fig 3). This dataset can help inform on choosing the appropriate radar frequencies for future field campaigns or satellite missions, such as the Atmosphere Observing System (AOS) mission. I recommend the manuscript be accepted with minor revisions for clarity.

Specific Comments:

L9-10: Though it's implicit, it would be helpful to specifically call the radar "ground-based" at some point early on. The name CloudCube initially gave the impression that this could be a spaceborne instrument.

We have added "*ground-based*" when we introduce CloudCube in the abstract, the introduction, and Table 1 (lines 9, 58 and 93).

Fig. 5 caption and L211-213: "short-range horizontal streaks" and "sporadic vertical streaks": It's difficult to see what features are being pointed out. Perhaps describe where in these plots (time, height)

We have modified Fig. 7 (previously Fig. 5) caption to indicate the position of these streaks (lines 254-255):

“Visible horizontal streaks at near-zero range and close to 500 m are caused by transmitter leakage into the receiver.”

L71,140 and elsewhere: the use of “range” to describe the height above the radar is somewhat confusing. I think explicitly stating somewhere that range = distance from radar would be helpful to better understand “blind range,” “close-range,” “unambiguous range,” etc.

We have added the following sentence in Sect. 2.2. lines 101-102:

“Since the radars were pointing zenith in this configuration, we have used range and height interchangeably in this manuscript to describe the targets’ distance to the radars.”

Technical Corrections:

L38: change “this kind” to “these kinds”: “...suitable fit for these kinds of measurements...”

The recommendation has been accepted (line 38).

L287: “...blue areas respond to particle diameters below the Rayleigh limit...” should this be “blue areas correspond”?

The recommendation has been accepted (line 322).