Response to editor report

Public justification (visible to the public if the article is accepted and published):
The authors created EarthCARE-GPM (Global Precipitation Measurement core observatory) coincident data set and examined reliability of the EarthCARE CPR measured Ze and Vd values. They also derived the vertical air motion by the combined method of CPR and GPM. The retrieved vertical air motion was then compared with that in the JAXA standard CPR-CLP product and found reasonable agreement. The manuscript was revised according to the reviewers comments and the paper is now accepted with technical correction.

The authors sincerely thank the editor for carefully reading the manuscript and for evaluating our work as worthy of publication in AMT. In accordance with your comments, we have revised the manuscript as well as the short summary.

(1) The authors used Vt and vt to denote reflectivity weighted terminal velocity and fall velocity(not reflectivity weighted values), respectively. The authors are requested to use other name for reflectivity weighted terminal velocity, e.g., VTz instead of Vt to avoid misunderstanding,

Thank you for the suggestion. As you advised, we revised the entire manuscript to use V_{tz} instead of V_t, including the labels shown in Figure 10.

(2) In Short summary, please use Global Precipitation Measurement core observatory (GPM) for readers who are not familiar with GPM.

We have revised the short summary as follows:

> Using coincident observations from the EarthCARE Cloud Profiling Radar with Doppler velocity measurement capability and the Dual-Frequency Precipitation Radar on the Global Precipitation Measurement, vertical motions in stratiform and convective precipitation systems are examined, providing insights into the dynamical and microphysical processes inside deep clouds. This enables a more comprehensive understanding of hydrometeor fall speeds and vertical air motions in precipitation systems.

In addition, although these were not specifically pointed out, we made the following two updates to the manuscript:

1. The affiliation of one of the co-authors has changed as of November, so we updated it accordingly.

   Affiliation of F. Joseph Turk:
   → Joint Institute for Regional Earth System Science and Engineering, University of California, Los Angeles, CA, USA

2. The statement regarding data availability was missing, so we have added it as shown below.

   Line 671–674

Data availability

EarthCARE-GPM coincidence dataset is publicly available on the JAXA website under the Data DOI, https://doi.org/10.57746/EO.01ka7xakvwj6pcthxkvgt0vr0y. All EarthCARE products (JAXA, 2024a; JAXA, 2024b) and GPM products (JAXA, 2014) used in this study can be downloaded from the JAXA G-Portal.