

The study "*Post-processed carbon flux dataset for 34 eddy covariance flux sites across the Heihe River Basin, China*" presents a post-processed carbon flux dataset derived from 34 eddy covariance (EC) sites in the Heihe River Basin, China. This dataset is expected to be invaluable for studying carbon cycling in arid regions and Asia, where substantial data gaps exist due to limited FLUXNET observations and data sharing. I strongly support the publication of this study, pending minor revisions as outlined below:

Line 26: Please clarify the term "multi-year observation" to help readers quickly determine the applicability of the dataset to their research.

Abstract: Adding a data access portal at the end of the abstract is recommended to facilitate wider use of this dataset.

Line 191: Check the time format—before 12:00 should be labeled "AM." Alternatively, consider removing "AM" and "PM" entirely since a 24-hour format is already used.

Figure 7: It is suggested to translate the X-axis labels from DOY (Day of Year) to specific month names for better readability.

Line 243: The statement "The Reco in the HRB slightly increased for cropland and wetlands but remained relatively stable for other ecosystem types over the last decade" appears inconsistent with Figure 8c, which shows that Reco in cropland and wetlands is declining. Please clarify.

Lines 62–63: Regarding the claim, "The GPP, Reco, and NEE are significantly higher at DMS, YKe, GTa, and ZYW than at others," how do the authors explain the behavior of Reco at the Aro station?

Lines 323–325: The text states, "While previous studies have reported that MDS may systematically overestimate carbon emissions and underestimate CO₂ sequestration (Vekuri et al., 2023), we did not observe this phenomenon in the HRB." Please elaborate on how this result was derived.

Line 331: The statement "Since direct measurement of GPP and Reco are not available, assessing uncertainties in the NEE partitioning step remains challenging" should be revised as there are indeed methods for directly measuring Reco, such as the chamber technique.