

Comments for both reviewers

⇒ We thank both reviewers for their meticulous evaluation of our manuscript and for the positive assessment of the study. As evoked by reviewer 2, through this study and the open availability of the scripts used in our analysis, we hope to contribute to improving the quality of flux measurements across flux tower networks, as these data are essential for advancing our understanding of ecosystem–atmosphere interactions. Answers to their comments are provided as a separate file.

⇒ An additional modification, not requested by the reviewers, has also been made to the manuscript. Between the initial submission of the manuscript and the preparation of this response, an error was identified that affects only the air relative humidity (RH) values. These values were substantially underestimated because they were based on the outputs of the EddyPro software, which had not been run using the option to use external RH measurements through a dynamic metadata file. As a result, RH was calculated by EddyPro from the sonic temperature, which introduced a substantial bias, close to (but not exactly) a constant offset.

In the revised version, we replaced these RH values with the RH measurements available from the weather stations, which are not affected by this bias.

The consequences for the results presented in the manuscript are very minor. First, RH is used only in the implementation of the H₂O frequency correction and not for CO₂. Second, RH is used only to classify the cut-off frequencies (cof) and correction factors (CF) into RH classes, thereby accounting for their dependence on RH. The bias affecting the RH values was close to a constant offset across all half-hour periods. An offset error in RH does not affect the relative positioning of the half-hour periods within the RH classes and therefore has no impact on cof, CF, or fluxes.

Nevertheless, because the bias was not exactly constant across all half-hour periods, the classification of the observations was slightly modified after correcting the RH values. This resulted in small changes to the numerical values reported in the analysis of the H₂O-related corrections. The corresponding values and figures have therefore been updated accordingly, with no consequences on the overall results, key messages, discussion and conclusions of the manuscript. Those changes in the text and tables can be easily tracked thanks to the track-change version and figures that were updated are Figures 5, 6, 7, 8, 9, B3, B4, C2, D1, D3.

To be noted that, while updating these values, we also found a mistake for the “Half-hourly flux difference » values for “H₂O/LE” in Table 2. Combined with the previously described modification, median/interquartile range of half-hourly flux difference between the two methods changed from 2.15/4.73 Wm⁻² to 0.69/1.03 Wm⁻² for LMH and from -0.97/2.56 Wm⁻² to -0.52/0.58 Wm⁻² for HMH, again without further implications on the manuscript.