Response to Reviewers

"The MAESTRO turbulence dataset derived from the SAFIRE ATR42 aircraft"
by Jaffeux et al.

May 31, 2026

On behalf of all co-authors, we thank both reviewers for acknowledging the work done previously to improve the manuscript and dataset formatting. Their comments and suggestions have significantly contributed to the final result. Here, we address the remaining points.

Responses to Reviewer 2 (Report1)

We thank Reviewer 2 for the reading of the manuscript and for checking the consistency of the dataset.

All suggested modifications have been performed, including variable attributes, file and folder names. Uncertainties related to attack angles have also been added to the instrumentation Table 2. The dataset is now entirely consistent with Table 3.

Responses to Reviewer 1 (Report2)

We thank Reviewer 1 for the detailed reading and appreciate their interest in the discussion related to the computation of dissipation rates. Figure 1 has been improved with respect to readability of the legend, as well as identification of individual flights.

We apologize for the incorrect axis labeling in the spectrum shown in our previous response. The corrected spectrum is provided in the folowing Figure 1, with the x-axis now properly showing frequency in Hz up to the Nyquist frequency of the desired LiCor signal (12.5 Hz). The reviewer is correct that the LiCor-7500 was operated with a 20 Hz internal bandwidth setting during MAESTRO, corresponding to a Nyquist frequency of 10 Hz. The humidity signal was acquired at 20 Hz and subsequently interpolated to 25 Hz to align with the common dataset frequency, this interpolation does not add any physical information above 10 Hz. The spectral artifact observed beyond $\approx$ 6 Hz therefore falls at the very edge of, and partially beyond, the instrument's usable frequency range. As stated in the manuscript, we suspect it reflects a vibration-induced mechanical resonance in the antenna mount under airborne conditions, rather than an electronic bandwidth effect. The MAESTRO turbulence dataset is distributed at 25 Hz, applying a sharp low-pass filter at 5 Hz would remove precisely the small-scale fluctuations that a fast sensor is designed to capture.

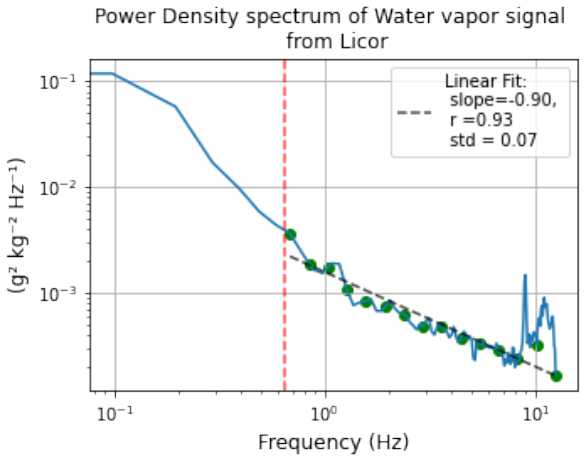


Figure 1: Typical power spectrum of the LI-7500 signal during the MAESTRO campaign.

Regarding the more general question of why discarded instruments are listed in the instrumentation table: we believe transparency requires reporting all instruments operated during the campaign, including those that were excluded, along with the reasons for their exclusion. This ensures that users are aware of the measurement context and that the dataset documentation accurately reflects the actual payload.

We hope that the revisions and the responses above fully address the comments of both reviewers.

Sincerely,
Louis Jaffeux, on behalf of all co-authors.