

We are grateful for both reviewer's minor comments that help us to improve the clarity of the manuscript.

In addition to the point-by-point responses, we have carried out the following minor changes:

- have updated the uncertainties of the secondary laboratory standards (Line 5, Page 5; Line 5, Page 6).
- have updated the long-term reproducibility of liquid sample analysis at FARLAB (Line 6, Page 6).
- have acknowledged to the editor and two anonymous referees (Line 17, Page 32).
- corrected the spelling "distrometer" to "disdrometer" (Line 11, 17, Page 4; Line 4, Page 29), "paried" to "paired" (Line 13, Page 28).

The detailed point-by-point responses to all referee comments are provided below.

Anonymous Referee #1

The paper is greatly improved, and I appreciate the authors' effort. I now have few minor comments.

1. p2, line 9: S -> "South"

Implemented.

2. p2, line 9: *"However, an observational confirmation ... remains elusive." Did you address this issue in this paper? If not, I would remove this sentence.*

Yes, we address this issue with the moisture source analysis. We think it is important to bring this up here as part of the research gap. We have slightly rephrased this sentence to "However, such model-derived estimates currently lack observational confirmation."

3. p2, line 19: *There is a recent paper by Toride et al (2021), which showed the potential of water isotope to improve weather forecasting. I think this paper should be cited in this context.*

Toride, K., Yoshimura, K., Tada, M., Diekmann, C., Ertl, B., Khosrawi, F., & Schneider, M. (2021). Potential of mid-tropospheric water vapor isotopes to improve large-scale circulation and weather predictability. Geophysical Research Letters, 48, e2020GL091698. <https://doi.org/10.1029/2020GL091698>

Have now cited the mentioned paper.

Anonymous Referee #2

This new, improved version of manuscript by Weng et al. addresses all comments made by reviewers so far. The manuscript is now easier to read, with more clarified sections of the text as well as with improved figures. Only change that should be done is no to use acronyms for references which introduces confusion.

Have now replaced the acronyms for references (i.e. C08, Y10 and C15) with the full citations (i.e. Coplen et al., 2008; Yoshimura et al., 2010 and Coplen et al., 2015). This required minor rephrasing of several sentences.