

The revised manuscript is much more logical and easier to follow and the figures easier to interpret. There remain just a few places where I feel the wording is somewhat inaccurate, and I have flagged these below. Otherwise, my only remaining suggestion of significance is that the paper synthesize its main findings in a way that highlights the value of the deuterium excess measurements. Why should we as a community make d-excess measurements in addition to more traditional meteorological ones? What value is gained in having not just the individual isotope ratios but d-excess as well? The conclusions might, for example, touch upon the following points:

- D-excess appears to do a better job distinguishing mixing from Rayleigh processes in the FT on the CLR day.
- Only d-excess identifies the potential role of cloud in moistening the inversion layer during the STC day.
- In comparison, both d-excess and the individual isotope ratios are able to distinguish which air masses are mixing (interacting) on the DBL day.

P1, L27: It is not obvious to me what “moist processing” and “transport mixing” imply. Should this read “water phase changes, transport, and mixing?”

P2, L4: I suggest removing “dynamic, mesoscale” as climate feedbacks are usually regional/global.

P2, L29: Possible typo? “Variability in...co-vary?”

P3, L7: Satellite retrievals do provide HDO/H₂O profiles outside the middle troposphere. The challenge with using them is the low spatial resolution in the vertical and lack of signal when clouds are present. Also, without H₂18O/H₂O, there is no way to estimate d-excess.

P4, L33: Should LGR be the low-pass filtered timeseries if it has longer residence time (thus lower bandwidth) than Picarro?

Eqn 1: Should H₂O, in numerator also have a “Ray” subscript?

P 7, L18-19: Consider removing the last sentence. I’m not sure this is sufficiently substantiated.

P9, L32: It’s not clear to me why mixing plots don’t provide insight into the Z_{rt} minimum. It seems they indicate mixing of FT and BL each with a distinct third end member (cloud influenced air?). Consider rephrasing/removing.

P10, L40: It is not clear to me that turbulent conditions are expected during formation of shallow stratocumulus. Some of the discussion in this section seems rather speculative.

P12, L25: Perhaps clarify that the mixing line connects with “lower altitude” delta values also observed during VP3.

Figs 3-4: Captions should note that isotope values from profiles are shown as a function of water vapor concentration.

Fig 6: Measurements in BL, INV, and FT are not indicated for reference but are the main point of the figure. This line can be deleted.