

Dear editor:

We have uploaded the manuscript and a track-changes file from last version of the manuscript.

These changes are as follows:

Suggested change for the closing sentence of Section 1:

"In Section 6 we make some final comments."

Sections 5 and 6 have been modified, and the end of Section 1 has been modified accordingly.

Above Eq 3:

"these magnitudes"

Replace by " the first two quantities"

We agree. It has been modified.

Below Eq. 7, you say:

"the four terms U, P, K, and L are known (Peixoto and Oort, 1992), so we know E"

Suggest that you replace this with: "the four terms U, P, K, L, and hence E are well approximated (Peixoto and Oort, 1992)"

We agree. It has been changed.

l.61, "The so called ‘Trenberth diagrams’" - "so-called"; also, can you please provide a reference?

We have included as reference the original paper from Trenberth, and also, the name “Trenberth diagram” appears in the title of the paper from Read et al. (2016) where the data from fluxes come from.

l.67, "160Wm⁻², of longwave radiation" - delete comma

We agree. Clearly a misprint.

l.71: change "can be neglected" to "is small". For Venus, for example, the uncertainty is +/- 7%, not negligible.

We agree. Changed.

.73-84 - Can you please shorten this paragraph by paraphrasing key points from the Reid et al quote? The long quotation is unusual and not really necessary.

We agree. The quote has been reduced to a sentence.

The revised title for Section 3 is somewhat awkward. "Absorbed and emitted energy fluxes and residence time in planetary atmospheres" would read better, if it expresses what you intend to say?

We agree. The title of the Section has been changed.

Sections 5 and 6 - This comment is somewhat related to Rev. 1's criticism about Sections 4 and 5. While you did a good job connecting Section 4 to the rest of the study, I find Sections 5 and 6 lacking. It could be possibly valuable to relate your energy residence time to relaxation timescale. However, I find the outcome of the discussion, the final sentence of Section 5, not convincing. The link between energy residence time and relaxation time is not clarified or motivated well enough. There are three options: you drop references to relaxation time; mention relaxation time, but admit a clear link with energy residence time is not obvious at this time; or offer a more convincing explanation how the two are related. In any case, I would suggest you consider combining Sections 5 and 6, perhaps with a title "Discussion" or something similar? Section 6 as it is now does not constitute a section of its own. Incorporate l.145-149 into the part discussing relaxation time.

First sentence of Section 6 - this is a subjective statement that, without additional supportive argument or facts, is redundant. The readers can confidently assume that you believe energy residence time is a new concept, otherwise you would not publish about it. A point like this is fine in arguments with Referees but would be better avoided in a published paper.

Sections 5 and 6 have been merged and transformed into "Final discussion" in order to connect and compare energy residence time, τ , with the often found radiative relaxation time, τ_R .