Comment on amt-2021-31
Simone Ceccherini

I make my congratulations to the authors for this very interesting paper that presents a way to combine L2 products of different co-located measurements of the same species.

This comment is just to suggest them to cite Warner et al. (2014) that, from what I can understand, used the same method proposed by the authors of this paper to combine CO products of AIRS and TES as well of AIRS and MLS.

Then, as another method that uses the output of the individual retrievals to combine different co-located measurements, I suggest to cite the Complete Data Fusion method (Ceccherini et al., 2015).

I have demonstrated that the method used by the authors of this paper is equivalent to the Complete Data Fusion method in the sense that starting from the formula of one method we can obtain, using algebraic operations, the formula of the other method.

I have submitted the proof of this equivalence as a peer-reviewed comment to this paper to AMT in order that others can verify the proof as well. I hope that this peer-reviewed comment will be published in AMT Discussions as soon as possible, so that it is available also to the authors of this paper.

References:

Warner, J. X., Yang, R., Wei, Z., Carminati, F., Tangborn, A., Sun, Z., Lahoz, W., Attié, J.-L., El Amraoui, L., and Duncan, B.:

Global carbon monoxide products from combined AIRS, TES and MLS measurements on A-train satellites, Atmos. Chem. Phys., 14, 103–114,

https://doi.org/10.5194/acp-14-103-2014, 2014.