

Atmos. Meas. Tech. Discuss., editor comment EC1
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Editor Comment on amt-2021-121

Gabriele Stiller (Editor)

Editor comment on "Introduction to the ringing effect in satellite hyperspectral atmospheric spectrometry" by Pierre Dussarrat et al., Atmos. Meas. Tech. Discuss., <https://doi.org/10.5194/amt-2021-121-EC1>, 2021

With this comment, my intention is to inform the authors about my concerns regarding a re-submission of their paper.

Two of three reviewers have found that the manuscript does not provide enough new material or insights to be published in AMT. While I am not an expert of the respective field, I have some knowledge on Fourier Transform spectroscopy, and I concur with the opinion of the two reviewers. In particular, the presentation in the manuscript made it hard to me to sort out what was basic textbook knowledge and what (if any) is the new contribution to the field. Any reference to previous work and the state of the art is actually not provided. The reference list is very short; it has only one peer-reviewed paper which is from 1988, while there are five references to conference presentations or private communications. While it is not the task of the reviewers to point to the relevant literature as asked by the authors, I will do so: (rather old) publications by J. Brault or L. Delbouille will provide the basics of FTS and data processing. Recent papers on FTS can be found when looking for papers on NDACC FTIR observations, or MIPAS, IASI, MkIV, GLORIA, ACE-FTS, TES, calibration or level-1b processing papers. The effect of ringing, either in the recorded scene spectra or the blackbody spectra taken for calibration, is a well-known phenomenon that has been taken into account (and not ignored as the authors state) in all recent systems.

A revised version of their manuscript needs to:

- make reference to the state of the art of Fourier Transform spectroscopy including the handling of the ringing effect;
- describe clearly where the presented approach goes beyond the state of the art, and what the theoretical basis for this approach is; it would be helpful for the reader if the description could be adapted to the usual "vocabulary";
- how this approach has been implemented in the processing of measured (if not available, then simulated) interferograms;
- and finally, quantify what the improvement of the new approach in contrast to the previously described state-of-the art is.

Only if the authors feel that these requirements can be met, I recommend resubmission of a revised paper. An attractive alternative could be to use part of this manuscript as introductory section for the announced forthcoming paper, as suggested by two referees.

