

As I mentioned in my previous review, the paper presents an extensive and highly usable data record of FTIR-NH₃. Without any doubt it will be very helpful for future air quality evaluation and model and satellite validations. There are not many locations in the world with such an extensive and long term NH₃ record, and only a few with instruments with the capability to measure the total column of NH₃ at high temporal resolution. The revised paper shows a lot of improvement and I only have a few minor comments and suggestions.

Minor comments

1. Page 6, line 16, as you mention the fits are pretty good with a stdev of 2%. The green arrows point out the main absorption features of ammonia. These however also show that at those line positions the fit is the worst. While partially a result of the lower resolution, a similar thing was seen in Dammers et al., 2015, Fig.3. Potentially add a small discussion point about the uncertainty in the line parameters. The authors already sort of remark this on Page 11 Line 9.
2. Page 6, Line 29-33. If I understand correctly the fit improves by 60%! (Or do the authors mean that the fit mismatch increase by 60 %?) When using the sloped apriori profiles, and shows an increase in the NH₃ abundances. What is the reason for not switching to these aprioris? Even though the seasonal/temporal patterns do not change, this offset/ratio will change the comparison with IASI.
3. Page 8, Line 5-6, maybe remove the "possible" as it's well-known that temperature increases volatility and in many cases seems the reason for higher NH₃ temperatures in summer.
4. Page 9, line 11-12. Excluding negative values will bias the IASI "mean" high, especially in the lower range of the concentrations where the sensitivity is a strong factor. As it's a statistical retrieval, negative values are somewhat to be expected when sensitivity is low, and should average out towards zero (in case of no ammonia).
5. Page 9, Lines 19-24. What are the matching mean total columns and relative differences? Most of the values (Fig 6.) seem to be in the range of 0-1.5x10¹⁶ molecules cm⁻². So 0.78 would be around 50%. Considering IASI's and the FTIR products uncertainty that's about the range we expect for this lower range of total columns. Add some discussion on how these values compare to the uncertainties of the products. Similarly add a short reflection to the conclusions/perspectives.
6. Page 12, line 6-7. The manuscript already describes the use/test of a different (sloped) a-priori. Shortly reflect on those results?

Minor edits

1. Page 2, Line 5, remove "potentially" as its well established what the sources are.
2. Page 2, line 6, add a reference for the sources.
3. Page 2, Line 21, potentially add a reference to the recent paper by Dammers et al which includes lifetime estimates for NH₃ point sources.
4. Page 2, line 26, add a reference for the 50% PM_{2.5} statement.
5. Page 2, line 26-31, while it's interesting to point out uncertainties in the emissions in the Paris regions, the paper no longer discusses the PM_{2.5} concentrations, and this part can potentially be shorted or removed from the manuscript.
6. Page 3, line 19: "current or until very recent space-based NH₃ data... etc. add a short line as an introduction how the satellites measure (also Infrared based), and link to the first to show that it's possible: Beer et al., 2008.
7. Page 4, Line 2, add some references of studies that used FTIR to validate satellite measurements.
8. Page 4, Line 20-21: The part about section 3.3 needs to be rewritten as it still point to the previous version of the paper.
9. Page 5, Line 27, mention the green arrows in the figure.

10. Page 11 Line 2, add "a" between "FTIR instruments" and "moderate spectral resolution".

References

Dammers, E., McLinden, C. A., Griffin, D., Shephard, M. W., Van Der Graaf, S., Lutsch, E., Schaap, M., Gainairu-Matz, Y., Fioletov, V., Van Damme, M., Whitburn, S., Clarisse, L., Cady-Pereira, K., Clerbaux, C., Coheur, P. F., and Erisman, J. W.: NH₃ emissions from large point sources derived from CrIS and IASI satellite observations, *Atmos. Chem. Phys.*, 19, 12261–12293, <https://doi.org/10.5194/acp-19-12261-2019>, 2019.

Beer, R., Shephard M. W., Kulawik, S. S., Clough, S. A., Eldering, A., Bowman, K. W., Sander, S. P., Fisher, B. M., Payne, V.H., Luo, M., Osterman, G. B., and Worden, J. R.: First satellite observations of lower tropospheric ammonia and methanol, *Geophys. Res. Lett.*, 35, L09801, doi:10.1029/2008GL033642, 2008.