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Atmospheric Measurement Techniques Discussions

Interactive comment on "An open platform for Aerosol InfraRed Spectroscopy analysis – AIRSpec" *by* Matteo Reggente et al.

Anonymous Referee #1

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General comments:

This paper reported an open platform for aerosol FTIR (Fourier Transform Infrared) spectra analysis. It is potentially interesting to the community who uses FTIR method to identify organic aerosol sources. As the methods and the data used for demonstration have been already published, I think this paper is an integration of authors' previous works, and I will not comment on the technique of these methods have been used. However, in general, the quantification of the ambient aerosols by using FTIR depends on the functional group (FG) of each component; I encourage the authors to give more discussion of the FG, or give some introduction of the database that readers can access.

Following is some suggestions may improve the paper.

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Discussion paper

Specific comments:

1, Mid-infrared spectra can be acquired with different methods, such as absorption, reflection, or solvent extraction of filters. Is the authors' platform suitable for all of these spectral methods or only valid for absorption spectra? If it is the last, I suggest the author focuses their title and discussion on absorption spectra.

2, A lot of screenshot of the platform makes the paper looks like a user manual. I suggest the authors to keep only one or two important figures in the paper.

3, In the baseline correction section, figure 5. Is it absolute absorption? What is the method the authors used to get the absorption spectra? In absorption method, the baseline should be treated with careful. Otherwise, it will cause wrong absorption.

4, Fig. 4, it is not clear about segment 1 and segment 2, also there is a misspelling in the figure.

5, Fig. 5, it is not clear about the corresponding functional group of each peak in the figure.

6, Fig. 7, the peaking-fitting package using the decomposed Gaussian peaks for the fitting, how to treat the unknown absorption and overlapping absorption bands?

7, Page 23, the first sentence. "FTIR spectroscopy is a useful tool for obtaining chemical composition of atmospheric PM." It better gives some definition of the chemical composition. Furthermore, an introduction of the potential users is important. What is the progress made with the new platform with the community? It only simplified the data analysis. Is there any improvement on the accuracy?

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