

## ***Interactive comment on “Identification of Gas-phase Pyrolysis Products in a Prescribed Fire: Seminal Detections Using Infrared Spectroscopy for Naphthalene, Methyl Nitrite, Allene, Acrolein and Acetaldehyde” by Nicole K. Scharko et al.***

**Anonymous Referee #1**

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I found the paper to be both interesting and insightful. The evidence for the presence of the five gases reported on is convincing and clearly presented. Not only will this paper be useful for those interested in emissions from wildfire, but it will also be useful to those looking to model emissions from other sources utilizing infrared spectroscopy. Two matters that could be addressed that would add to the paper's usefulness are given below.

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-One part of the discussion that was missing is related to the comparison of the field spectra with database spectra. The PNNL database spectra are typically recorded at 5, 25 and 50 degrees Celsius whereas the spectra collected here are at 70 degrees Celsius. I would assume that the 50 C PNNL spectra would be used for comparison, but this was not mentioned. Also, do you have a metric of how the PNNL reference spectral profiles change from 5 to 25 to 50 C such that it could be said that using 50 C reference spectra to measure 70 C experimental spectra would result in an error less than 'give number'. This would also be important to mention for the pathlength calibration process since this parameter is used in the measurement of the mixing ratios of the five gases discussed.

-Also, the authors may be in a unique position to comment on whether the analysis techniques used here (i.e. MALT5) could be also used in active or passive remote infrared sensing for these gases.

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C2