

We respond to the comments made by the referee below with our responses highlighted in red.

Referee 1

This manuscript focuses on the improvement of the calibration methodology of photoacoustic spectrometers (PAS). The paper settled some issues demonstrated by some previous studies when O<sub>3</sub> is used as a calibrant, e.g., the uncertainty on the validity at a wavelength of 405 nm, and developed a model to describe the variation in PAS sensitivity with both wavelength and bath gas composition. The data presented in the manuscript is in general of good quality. The conclusions are sound and very useful for the researchers to better calibrate their PAS. The manuscript is very well written and organized and certainly meets the criteria of AMT. There is no more suggestions that I can provide.

Response:

We thank the reviewer for reading our manuscript and for their supportive comments.