Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2018-443-RC3, 2019 © Author(s) 2019. This work is distributed under the Creative Commons Attribution 4.0 License.





Interactive comment

## Interactive comment on "A new laser-based and ultra-portable gas sensor for indoor and outdoor formaldehyde (HCHO) monitoring" by Joshua D. Shutter et al.

## Anonymous Referee #2

Received and published: 3 February 2019

General comments: This paper reports the characterization of a new commercial formaldehyde sensor for monitor grade purpose. The detection limit of the instrument  $(3\sigma)$  was 690 pptv and 420 pptv for 15 and 60 minutes integration time, respectively. The sensor was compared to research grade Laser Induced Fluorescence instruments, which showed agreement within 10% in accuracy with up to  $\pm$  0.5 ppbv absolute difference. The sensor is useful for indoor monitor and outdoor network setup and such a paper would help to address the fundamental and technical concerns of this sensor. The authors should consider adding more discussion on how to perform a data processing method. Also, a discussion on the accuracy determination from a theoretical aspect instead of comparing with other state-of-art instruments would be helpful.

Printer-friendly version

Discussion paper



Nevertheless, this paper is well written and structured and meets the scope of AMT. Therefore, I recommend publication after minor revision.

Specific comments: Line 15 Page 1 'good agreement with LIF instruments from Harvard and NASA Goddard' Please be quantitative on the 'good agreement'.

Line 2 Page 3. Please define HITRAN. The authors should describe all the abbreviation when presented in the paper for the first time.

Line 5 Page 6. It is like a mismatch in the reference.

Figure 7a. The author could consider adding error bars on each data point to show the variability.

A schematic plot of the instrument is helpful to explain the measurement principle.

Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2018-443, 2019.

## AMTD

Interactive comment

Printer-friendly version

Discussion paper

