

The authors have taken into account all of my previous comments in a thoughtful way. I would recommend publication after reflecting minor comments below.

Minor Comments:

- Line 43-47: Divergence–integral method is an alternative to the IME method for quantification. Do you mean some other retrieval method?
- Line 64: replace DoP with PoD
- Line 79-80: “The methane absorption spectrum is convolved with the instrument spectral line shape and then multiplied with reference spectrum, providing the target signature.” is a more correct description of matched-filter method.
- Figure 1: I suggest using solid line and dashed line along with the different colors for easier separation of downwelling and upwelling path that is described in Line 105.
- Line 139: I believe k is derived assuming standard temperature and pressure. Please provide the details.
- Line 152: I would suggest describing L as defined during emission quantification instead of retrieval.
- Line 204: Do you mean Equation 10?
- Use “Ueff calibration” instead of “calibration” throughout the manuscript.