

Interactive comment on “Monthly trends of methane emissions in Los Angeles from 2011 to 2015 inferred by CLARS-FTS observations” by Kam W. Wong et al.

Anonymous Referee #1

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General Comments:

Wong et al. report measurements of CO₂ and CH₄ between 2011 and 2015 from a remote sensing instrument located on Mt. Wilson near Los Angeles, California, USA. Column CO₂ and CH₄ measurements above the instrument are subtracted from measurements from 28 points around the Los Angeles Basin in order to obtain an excess column enhancement below the instrument. These enhancements are fit linearly to provide excess CH₄ to CO₂ ratios, which are compared on a monthly basis to the other monthly measurements, and to previous studies. The ratios are also multiplied by CO₂ emission estimates from the basin to provide a monthly CH₄ emission. CH₄ emissions generally peaked in the late summer/early fall and wintertime in the Los

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Angeles Basin.

Overall, this paper is well-written and needs only minor revisions. However, the conclusions are seemingly at odds with another recent ACPD submission, Wunch et al. Whereas Wong et al. find Los Angeles Basin CH₄ emissions decreasing over the 2011 to 2015 time period, Wunch et al. report increasing CH₄ emissions from 2012 to 2015. I therefore suggest some discussion of the Wunch et al. results.

Specific Comments:

Although there are many references to Wong et al. (2015), an example correlation plot of XCH₄:XCO₂ would be useful in the current work.

p.14, line 7, the authors state Hsu et al. or Wennberg et al. showed wastewater treatment was responsible for the emissions stated. Both reported inventory values for wastewater treatment, but could not verify those inventories were correct. Since the definition of “showed” could be either “proved” or just simply “presented”, the authors should clarify this statement.

Figure 5, I am curious what it would look like if average daily emissions were shown per month. As presented, the months with 31 days always seem to have small peaks compared to the surrounding months with less than 31 days.

Technical Comments:

p.4, line 4, capitalize Transform Spectrometer p.4, line 6, remove comma between “to address” p.4, line 26, change to “molecules” p.7, line 18, change ratio to MWCO₂/MWCH₄ to match equation p.8, is there a peer-reviewed citation for Hestia? p.9, line 21, move comma to read “calculations, and (3) ...” References, add Peischl et al. Figure 6, line 5, suggest changing dash to colon for CH₄:CO₂ ratio

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