

***Interactive comment on “Carbon monoxide mixing ratios over Oklahoma between 2002 and 2009 retrieved from Atmospheric Emitted Radiance Interferometer spectra” by L. Yurganov et al.***

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We thank the reviewer for a helpful discussion.

Final Reply to Reviewer #2

1. A reference to Sussmann & Borsdorff (2007) will be added. 2. Thank you for a valuable suggestion. This might improve the current version of the retrieval. Moreover, in a future work an option to avoid using MWR should be investigated. There are lots of H<sub>2</sub>O lines close to CO that could be used for minimizing H<sub>2</sub>O error. We will mention this option in the revised MS. 3. We agree. This sentence will be re-formulated and corrected. 4. This is an important point. Now we re-evaluate averaging kernels and  
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a comparison between aircraft data and AERI will be verified. If this bias would be confirmed, then an explanation for this will be given. Preliminary, we believe that the local time for aircraft profiles (between noon and 2 pm) corresponds to maximum of solar scattering effect, that generally results in underestimation of CO. See also our reply to the Reviewer #1 in respect of this uncertainty. 5. The typo will be corrected 6. The label for averaging kernel is inside the plot. For consistency it will be merged with other labels and moved to the right-top corner. 7. It was a technical difficulty; we will try to fix it. 8. It may be done if the Journal's space permits.

In conclusion, we bring our apology to our co-author, Dr. Colm Sweeney (NOAA/GMD), his name turned out to be missing in the authors list; this will be corrected in the revised manuscript.

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