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Comment

## ***Interactive comment on “Mapping spectroscopic uncertainties into prospective methane retrieval errors from Sentinel-5 and its precursor” by R. Checa-Garcia et al.***

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Comments to Mapping spectroscopic uncertainties into prospective methane retrieval errors from S5 and its precursor, by Checa-Garcia et al.

Ilse Aben 25 March 2015

I think this is a very useful study.

But I have a few questions/suggestions :

1. In Galli et al., AMT, 2012 we did not find a dependence of the CH<sub>4</sub> error on the

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amount of H<sub>2</sub>O (see fig. 8 top). This study however concludes that there is a significant correlation in the CH<sub>4</sub> error with the amount of H<sub>2</sub>O. It would be good if some words are spent on the possible reasons for this apparent contradiction.

2. One of the possible reasons for the differences observed between Galli et al. and this manuscript lies in the use of the H<sub>2</sub>O spectroscopic database. It would be very useful to know if and to what extent switching to the Scheepmaker et al, AMT, 2013 database affects the errors on CH<sub>4</sub> as presented here.

3. This study only uses two FTS measurements, one under dry conditions and one under wet conditions, to establish the effect of the amount of H<sub>2</sub>O on the error in CH<sub>4</sub> column (In Galli et al. we used ~40 measurements with varying H<sub>2</sub>O). Only using two measurements is very tricky as we have no idea of how accurate the established relation is. I would advice to use (much) more measurements to make the results (more) reliable.

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