Atmos. Meas. Tech. Discuss., 7, C1706–C1707, 2014
www.atmos-meas-tech-discuss.net/7/C1706/2014/

Atmospheric Measurement Techniques Discussions

Interactive comment on "Aerosol profile information from high resolution oxygen A-Band measurements from space" *by* A. Geddes and H. Bösch

Anonymous Referee #1

Received and published: 14 July 2014

General comments:

The paper is clearly written and provides a good range of conditions for simulations within the O2-A band. The simulations shown go beyond what has been previously published. The main problem I have with the paper is a lack of explanation about why the results come out as they do since they are not always intuitive. It is not necessary or useful to rehash the results presented in figures and tables with words in the text, so the manuscript could be substantially shortened in this respect; however, more interpretation and explanation of the results is needed.

Just one example: p. 6033, L24: Can you please provide some insight as to why S-5P behaves this way.

I am confused about Table 1: I am looking at Table 1 from Veefkind et al. (2012) and accompanying text that states that S-5P has “a spectral resolution to sampling ratio of at least 2.5–3”, but their table 1 is indicating a spectral sampling of 0.1 nm or a sampling per FWHM of 5 for the relevant O2-A band channel which is double what is listed in your table 1. Further, the spectral range listed in Veefkind et al. (2012) is larger than what is listed in your Table 1. I believe this warrants recalculation of results at least for S-5P.

When I calculate the number of pixels based on the range and sampling, I get about the same number for GOSAT and OCO-2, but not for CarbonSat and S5-P (unless I am not understanding or have made a mistake). Please check this.

Technical points:

Table 1: The ESA web page has listed the S-5P launch date as in 2016, so this should be updated.

p. 6043, L2: Did you mean “low” here or high?

p. 6043, L28, Did you mean S5P or OCO-2?

p. 6022, L13 abstract: Accurate retrievals -> accurate retrieval

p. 6027, OCO-2 is now launched so this can be updated.

Interactive comment on Atmos. Meas. Tech. Discuss., 7, 6021, 2014.