Atmos. Meas. Tech. Discuss.,
doi:10.5194/amt-2016-175-AC1, 2016

Atmospheric Measurement Techniques Discussions
Open Access
EGU

Interactive comment on "Evaluation And Attribution Of OCO-2 XCO_2 Uncertainties" *by* John Worden et al.

John Worden et al.

john.worden@jpl.nasa.gov

Received and published: 14 November 2016

We would like to thank the reviewers for their comments, especially reviewer 1 for their analysis on modeled XCO2 variations at very fine length scales.

We have repeated reviewer 1's analysis and while we get different numbers for the distribution of slopes (we get $\sim$1 ppm) versus their $\sim$ 2ppm over land), we do get similar distributions for the STD within a small area.

As Reviewer 1 indicates this means that one of our primary assumptions, that XCO2 varies less than the uncertainties no longer applies.

On the one hand this means that the observed XCO2 variability is likely due to real XCO2 variations. This is a good result for OCO-2! Furthermore, our result about the

Printer-friendly version

Discussion paper

measurement error (from noise and natural variability) is still valid.

On the other hand, it is much more challenging to bound the role of interference error within a small neighborhood.

We are therefore looking at two approaches 1) Evaluating the correlation length scales of potential interferences by using the OCO-2 retrieved and a priori and asking at what point they are de-correlated from XCO2 variations and 2) Asking if we can provide an upper bound on the role of interferences within a small neighborhood.

We therefore request more time (until after the holidays) to re-evaluate these uncertainties and furthermore request the same reviewers given that they are already vested in the analysis.

Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2016-175, 2016.

Printer-friendly version

Discussion paper