**Atmospheric
Measurement
Techniques
Discussions**

Interactive comment on "Retrieval of tropospheric CO column from hyperspectral infrared sounders – application to four years of Aqua/AIRS and MetOp-A/IASI" *by* T. Thonat et al.

Anonymous Referee #2

Received and published: 25 July 2012

General

The paper describes the retrieval, (limited) evaluation, and description of CO columns from AIRS and IASI. The resulting data products should, if properly packaged (see below), will complement existing CO data. The paper is worth publishing in AMT after the authors have addressed my comments outlined below.

Specifics

Abstract, line 9: do the authors mean FWHM?

Abstract: I believe it should be colocated not collocated.

Abstract and throughout the paper: I'm not sure why so many decimal places have been used, e.g., 3.42%? At the very least the authors should be consistent.

Abstract, line 18: would be good to show some metrics that exemplify the statement about "good agreement."

Abstract, line 20: this is to be expected? If yes, the authors should say so.

Introduction: While the history behind measuring CO from space is interesting I'm not sure it is strictly necessary in this paper. I suggest the authors consider shortening the introduction, staying focused on the subject matter.

Introduction, line 18: the authors should state the most important trace gases.

Introduction, line 25: The authors should clarify whether the method presented works outside the tropics.

How does IASI/AIRS compare with MOPITT, a very different instrument? I'm sure the authors have done this work but it's worth briefly summarizing the findings.

If these data are to be adopted by the wider atmospheric community to estimate CO sources from biomass burning, for example, they would have to be accompanied by averaging kernels, single measurement uncertainties, etc. Are these data available?

Section 5.2: the authors should explicitly state how they have sampled the satellite data in the vertical to match with the aircraft data. Is the aircraft altitude reasonably constant?

Section 5.2: What method have the authors used to estimate the slope? They should not have used a simple linear regression that assumes a causal relation between the two variables.

Section 5.3, page 3880, line 22: I don't see this sharp increase in CO. I didn't find the

data shown in Figure 10 very useful as it is plotted. I strongly suggest the authors find another way to reduce their data.

Interactive comment on Atmos. Meas. Tech. Discuss., 5, 3861, 2012.

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper