

Interactive comment on “Measurements of Pollution In The Troposphere (MOPITT) validation through 2006” by L. K. Emmons et al.

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In response to the comment by Referee #2 on Oct 22 we would like to take the opportunity to emphasize the importance of validation for the quantitative use of satellite retrievals.

There is a precedent of publishing scientific papers on the validation of satellite observations (e.g., Clerbaux et al., 2007; Warner et al., 2007; Livesey et al., 2008). There are even journal special issues on validation, such as the JGR-Atmospheres Special Collection "Aura Validation" (JGR, 112(D24), 2007; 113 (D15) and 113(D16), 2008; <http://www.agu.org/contents/sc/ViewCollection.do?collectionCode=AURA1>) and the ACP special issue "Validation results for the Atmospheric Chemistry Experiment (ACE)" (http://www.atmos-chem-phys.net/special_issue114.html). In addition, many of the papers of the ACP Special Issue "Probing the atmosphere in three dimensions for

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SCIAMACHY" are validation papers (e.g., Heue et al., 2005; Sussmann and Buchwitz, 2005; Sussmann et al., 2005).

Validation papers do not necessarily contain new scientific results. The goal is to compare measurements in the most scientifically rigorous manner possible, often across spatial and temporal scales, and account for representativeness in each dataset. In addition, taking into account differences in vertical sensitivity is non-trivial. This paper covers a wide variety of validation exercises covering diverse geographical and seasonal cases including both monitoring and intensive field campaigns. The MOPITT observations are the longest global record of tropospheric CO and are used widely by the scientific community, therefore communicating this information to the community is essential.

While the techniques of satellite validation are well understood, and the validation of MOPITT CO retrievals for short time periods has been published previously, the results presented here are new in that they show the MOPITT validation for the full time record. The cause of the trend in the MOPITT bias is not completely known at this time and is the subject of continuing investigation. However, the fact that papers reporting CO trends based on MOPITT data are already finding their way into the literature makes publication of these new validation results imperative.

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