

Atmos. Meas. Tech. Discuss., 3, C1778–C1780, 2010

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AMTD

3, C1778–C1780, 2010

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Interactive comment on “An overview of measurement comparisons from the INTEX-B/MILAGRO airborne field campaign” by M. M. Kleb et al.

M. M. Kleb et al.

mary.m.kleb@nasa.gov

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Response to M. Evans

Comment: The paper contains no conclusions about instrument performance. It would be nice to make some statements about performance so that there can be some conclusions. In general it seems to me that those species which we would expect to work well (slopes of 1 ± 0.1) do (O₃, H₂O, NO, Hydrocarbons), some species have moderate performance (slopes of 1 ± 0.25) (NO₂, H₂O₂, HNO₃) and some species have some significant issues (SO₂, PAN, Oxygenates). I think it would be very useful for the

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community to have some sense of where we are with making observations. Grant applications could point to some statement in this paper to help obtain funding for future instrument improvements. I realise that there are 'political' issues with regard to making these statements but an objective definition of success based on slope (calibration) and R (noise) could help identify those species for which we have confidence of the observations and those species we do not. If the paper could do this I feel it would do service to the community.

Response: We are grateful and appreciate the thoughtful comments! In fact, two important issues raised by the referee have been extensively discussed among the authors since work on this paper began. We finally agreed upon that this paper will serve as a grand overview of the intercomparison results so that the readers can readily find out the level of agreement between the measurements for a given species/parameter as well as a record of the measurement consistency demonstrated during the INTEX-B measurement comparison exercises. It was also agreed that detailed instrument issues would not be addressed here. In light of this, we believe that it is rather difficult establish a set of objective criteria for quantitative ranking of the measurements as the referee suggested. Without a set of objective criteria, the conclusion may be viewed as somewhat arbitrary or subjective.

Comment: There are no comments about whether the PI assessed uncertainties (when available) match with the differences observed between the observation. Is there closure between the different methods of assessing uncertainties?

Response: We tend to agree with the reviewer that it will be useful for the readers to understand if the PI-reported uncertainties would be adequately explained the measurement difference found in intercomparison. As a result, we intend to make some general statements indicating whether or not there are systematic differences in a group of measurements.

Comment: For completeness the formula for the R2 value should be given.

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Response: We will add the equation as suggested by the referee.

Comment: There are a couple of issues with the tables. Table 2: sulfate and nitrate. No units in the uncertainty.

Response: Units will be added.

Comment: Table 3. NMHC should be species with only H and C atoms. There are other species in here. Another term should be used.

Response: We agree with the referee. Additional groups will be added to accommodate these misplaced species.

Comment: The Range column and contents does have any units.

Response: We will add a column for units.

Comment: Is the uncertainty quoted 1 sigma?

Response: The uncertainty quoted is the same as that reported by the PI in the data files. Most PIs report 1 sigma, some report 2 sigma, and others report irregular. We will indicate whether the uncertainty is 1 or 2 sigma or something else. When not listed in the PI data file, we will contact the PI via email and request the information within 2 weeks. If the PI does not respond, we will indicate the reader should contact the PI for that information.

Comment: Why are Toluene, 3-ethyltoluene etc in the particle number section.

Response: These species were not intended to be in the particle number section. It appears to be a typesetting error and will be fixed.

Comment: Table 5 SO₂ isn't really a photochemical precursor... DMS, CHCl₃ aren't really NMHC

Response: We will change the heading from "Photochemical Precursors" to "Tracers" in Table 5.

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