Atmos. Meas. Tech. Discuss., 3, C543–C544, 2010
www.atmos-meas-tech-discuss.net/3/C543/2010/

Atmospheric Measurement Techniques Discussions

Interactive comment on "Continuous low-maintenance CO_2/CH_4/H_2O measurements at the Zotino Tall Tower Observatory (ZOTTO) in Central Siberia" *by* J. Winderlich et al.

Anonymous Referee #2

Received and published: 26 May 2010

Review of the manuscript AMT-2010-40: "Continuous low-maintenance CO2/CH4/H2O measurements at the Zotino Tall Tower Observatory (ZOTTO) in Central Siberia" by Jan Winderlich et al.

The paper described the testing, installation, and preliminary evaluation of a CO2/CH4/H2O analyzer at Zotino, Siberia. The tall tower is a very interesting new observing station for atmospheric composition, in a region which is clearly under sampled. The paper is fully relevant for publication in AMT with some minor revisions.

Calibration: you are planning a recalibration of the tanks once every 10 years (page 7/8). How do you ensure the link with the WMO scale during this long period ?

Data quality assessment: I think this part needs to be more elaborated. It would be interesting to have a figure showing the whole time series of the target gas or residuals from the calibration fit. Also comparison with flask data is mentioned but there is no indication about the precision of the flask analyzer. I guess there is a long delay between the sampling and the analysis. Is there a drift correction applied to the flask data ? How many flasks have been compared to the in-situ measurements ?

The paragraph 3.8 describing the meteorological measurements is not relevant for this publication dedicated to the CO2/CH4 analyzer. It should be removed.

Some minor remarks:

Introduction: references for the Northern Hemisphere carbon sink need to be updated

Line 32: In the past...: Most of the stations are still located on coastal, mountain or remote sites, but I agree that during the last two decades we have seen emerging new continental stations with more local footprints.

Figure 1: I guess this is the footprint corresponding to the top of the ZOTTO tower, but this is not clear from the legend.

Interactive comment on Atmos. Meas. Tech. Discuss., 3, 1399, 2010.