Atmos. Meas. Tech. Discuss., 5, C3306–C3307, 2012
www.atmos-meas-tech-discuss.net/5/C3306/2012/

Atmospheric Measurement Techniques Discussions

Interactive comment on "Quantification of methane emission rates from coal mine ventilation shafts using airborne remote sensing data" *by* T. Krings et al.

Anonymous Referee #2

Received and published: 18 December 2012

This work builds upon the authors' previous work in monitoring XCO2 from power plants via airborne remote sensing and extends it to monitoring emissions of XCH4, this time from coal mine ventilation shafts.

This paper is extremely well written with the data presented in a detailed but well-structured manner. There are only a few minor points of clarification (see below) that I suggest are included before this paper is accepted for publication.

Suggested minor revisions:

P7388L11: The author refers to in-situ measurements at the surface. Is this in refer-

ence to the aircraft CH4 in-situ analyser or are there additional instruements located on the ground, present for this campaign? Clarification on this would be useful as well as perhaps a comment on how crucial this additional data is to the analysis (i.e. does MAMAP require the additional intrumentation to be present?).

P7389L25: The author utilises the CO2 proxy method but doesn't introduce it in enough detail. I would recommend a few additional sentences explaining the reasons for it's use as well as the inclusion of at least one appropriate reference describing it's use in satellite remote sensing (e.g. Frankenberg/SCIAMACHY, Parker/GOSAT, Schepers/GOSAT, etc).

Additionally, it's unclear what is taken as the model XCO2 used to re-normalise the XCH4/XCO2 ratio. If this is a constant value, some discussion on how appropriate this value is should be included.

Some justification has been given in ruling out features in the observed proxy XCH4 being due to the XCH4 or XCO2 (e.g. P7390L16) but the author only briefly touches on whether surface reflectance may be an issue here. Some further analysis/discussion may be appropriate here.

Interactive comment on Atmos. Meas. Tech. Discuss., 5, 7383, 2012.