

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

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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-

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ence to the aircraft CH₄ in-situ analyser or are there additional instruments 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 instrumentation 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 its use as well as the inclusion of at least one appropriate reference describing its 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.

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