

Interactive comment on “Estimating the size of a methane emission point-source at different scales: from local to landscape” by Stuart N. Riddick et al.

Stuart N. Riddick et al.

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Please see attached pdf (acp-2016-963_Reviewer1) for our detailed response.

Please also note the supplement to this comment:

<http://www.atmos-chem-phys-discuss.net/acp-2016-963/acp-2016-963-AC1-supplement.pdf>

Interactive comment on *Atmos. Chem. Phys. Discuss.*, doi:10.5194/acp-2016-963, 2016.

C1

Ms. Ref. No.: acp-2016-963

Title: Estimating the size of a methane emission point-source at different scales: from local to landscape

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Dear Editor,

We would like to thank the referee #1 for their comments. As suggested, we have addressed the claims made by the paper regarding the power of the inversion model to calculate point sources and have provided details of a new publication that provides more detail on the InTEM modeling.

Please find our detailed responses below.

Yours sincerely,

Stuart Riddick (corresponding author)

and co-authors: Sarah Connors, Andrew Robinson, Alistair Manning, Pippa Jones, David Lowry, Euan Nisbet, Robert Skelton, Grant Allen, Joseph Pitt and Neil Harris

Fig. 1. Response

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Supplementary Material Section 1

The standard deviation of the lateral (σ_x , m) and vertical (σ_y , m) mixing ratio distribution calculated from the stability class of the air (Pasquill, 1974).

Stability Class	Day			Night		
	Wind Speed (m s ⁻¹)	Strong	Mod	Light	Overcast	Clear
2		a	a	b		
3		b	b	c	e	f
4		b	c	c	d	e
5		c	c	d	d	d
6		c	d	d	d	d

Stability Class	sigz	
	a	b
A	0.0002539	2.089
B	0.04936	1.114
C	0.1154	0.9109
DD	0.7368	0.5642
DN	1.297	0.4421
E	0.9204	0.4805
F	1.505	0.3662

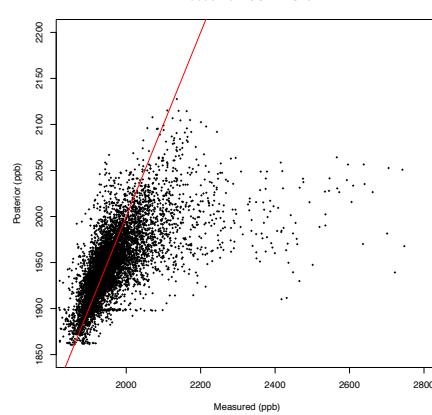
Stability Class	sigy	
	c	d
A	0.495	0.873
B	0.31	0.897
C	0.197	0.908
DD	0.122	0.916
DN	0.122	0.916
E	0.0934	0.912
F	0.0625	0.911

Fig. 2. Supplementary Material Section 1

C3

Supplementary Material Section 2

Haddenham GC-FID Site



Scatterplot of posterior enhancements vs. observed enhancements.

Fig. 3. Supplementary Material Section 2

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