S10 Appendix: Individual RCM experiment data and modeling plots
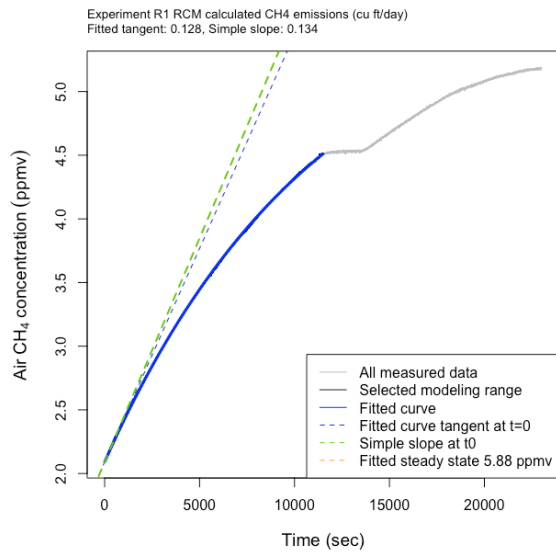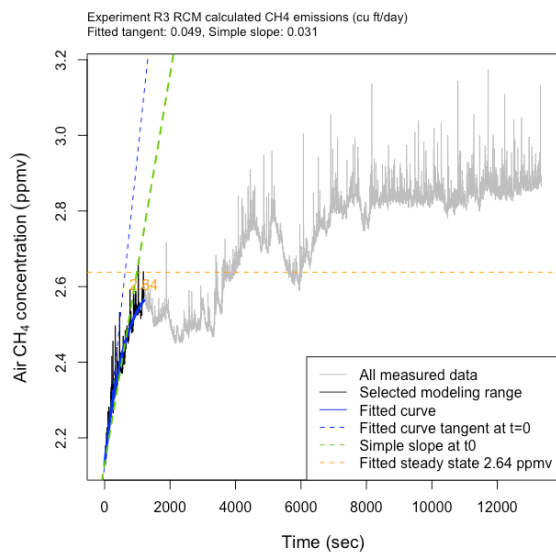
Experiment R1 RCM calculated CH4 emissions (cu ft/day)
Fitted tangent: 0.128, Simple slope: 0.134

R1 note: fitted tangent using first 24000 sec was 0.132 ft^3 day^{-1}.

Experiment R2 RCM calculated CH4 emissions (cu ft/day)
Fitted tangent: 0.052, Simple slope: 0.056

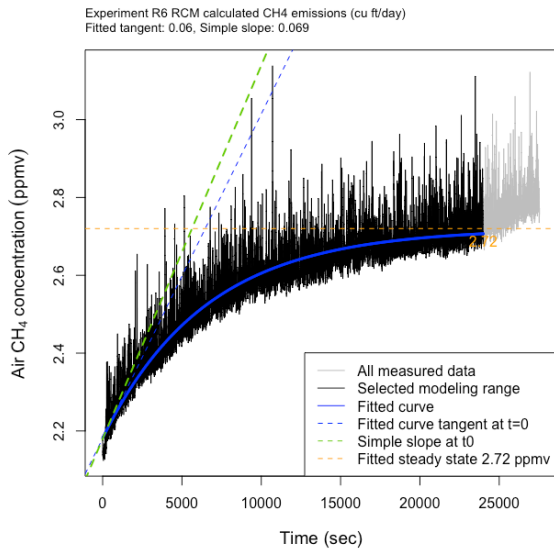Experiment R3 RCM calculated CH4 emissions (cu ft/day)
Fitted tangent: 0.049, Simple slope: 0.031
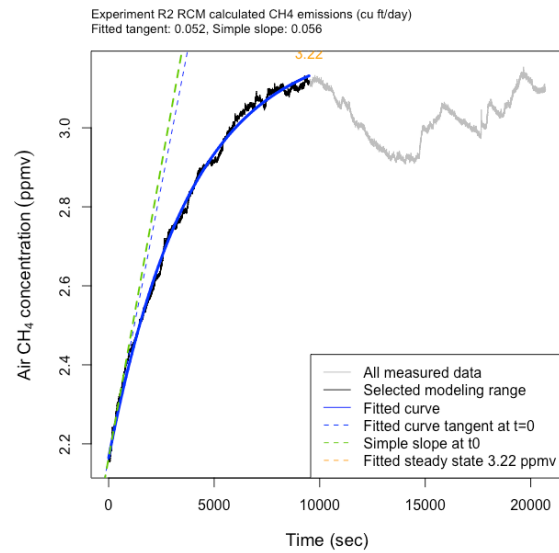
R3 note: fitting with 13000 sec results in a fitted tangent flux of 0.015 ft^3 day^{-1}

Experiment R4 RCM calculated CH4 emissions (cu ft/day)
Fitted tangent: 0.02, Simple slope: 0.022
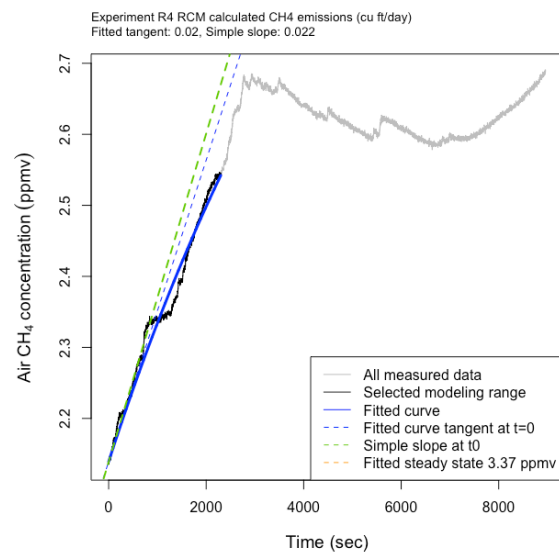
R4 note: fitting with 9000 sec results in a fitted tangent flux of 0.033 ft^3 day^{-1}.

Experiment R6 RCM calculated CH4 emissions (cu ft/day)
Fitted tangent: 0.06, Simple slope: 0.069

R6 note: this experiment was repeated - see SI 4.8 for more details.

Experiment R7 RCM calculated CH4 emissions (cu ft/day)
Fitted tangent: 0.019, Simple slope: 0.038
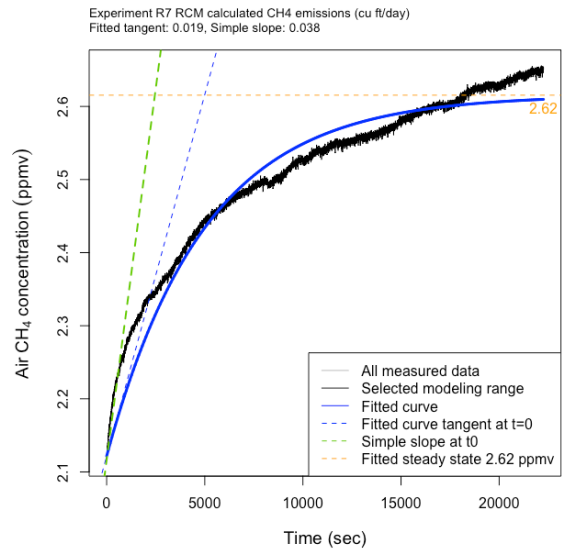
R7 note: this experiment was a repeat of R6 - see SI 4.8 for more details.

Experiment R8 RCM calculated CH4 emissions (cu ft/day)
Fitted tangent: 0.113, Simple slope: 0.118

Experiment R9 RCM calculated CH4 emissions (cu ft/day)
Fitted tangent: 0.108, Simple slope: 0.142
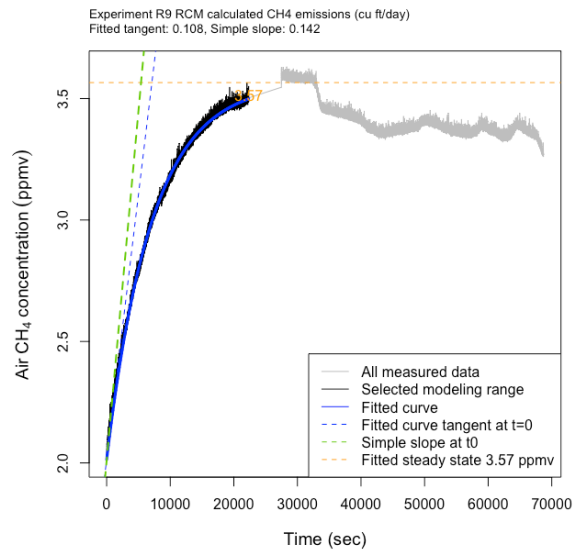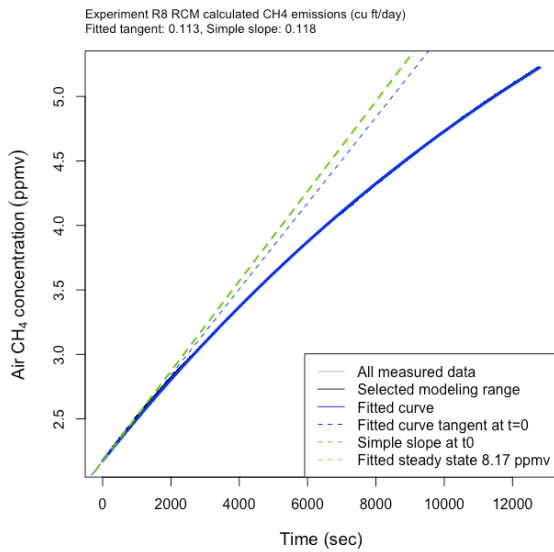
R9 note: a power outage resulted in no data between approximately 22000 to 26000 sec

Experiment R10 RCM calculated CH4 emissions (cu ft/day)
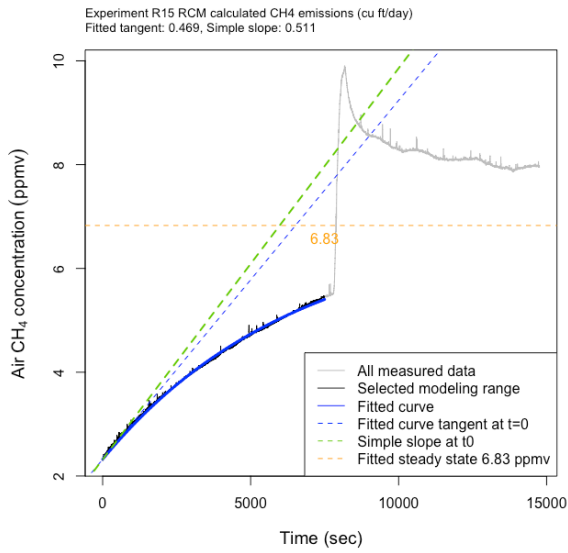Fitted tangent: 0.042, Simple slope: 0.03
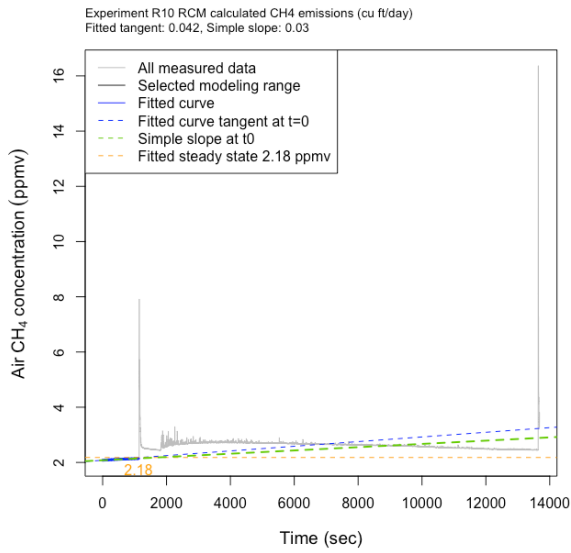
R10 notes: (i) spikes were caused by unburned methane emanating from domestic water NG boiler injectors upwind of the GasScouter sensor. See also section SI 4.6. (ii) fitted tangent using first 4000 sec was 0.19 ft^3 day^{-1}

Experiment R11 RCM calculated CH4 emissions (cu ft/day)
Fitted tangent: 0.213, Simple slope: 0.247
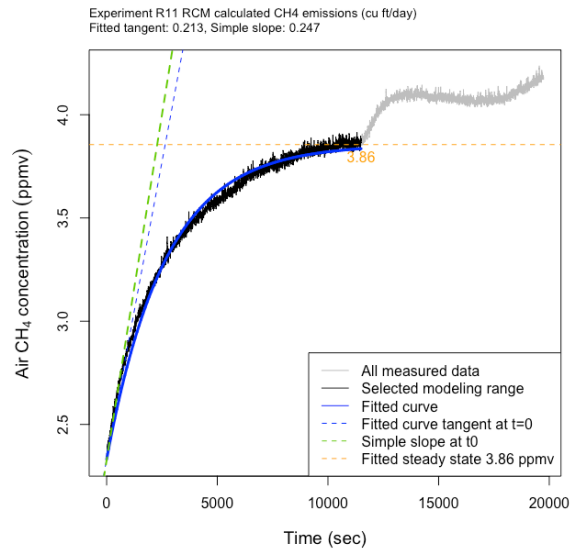
R11 note: fitting with 20000 sec results in a fitted tangent flux of 0.17 ft^3 day^{-1}.

Experiment R12 RCM calculated CH4 emissions (cu ft/day)
Fitted tangent: 0.026, Simple slope: 0.027

Experiment R13 RCM calculated CH4 emissions (cu ft/day)
Fitted tangent: 0.083, Simple slope: 0.094

3

Experiment R15 RCM calculated CH4 emissions (cu ft/day)
Fitted tangent: 0.469, Simple slope: 0.511
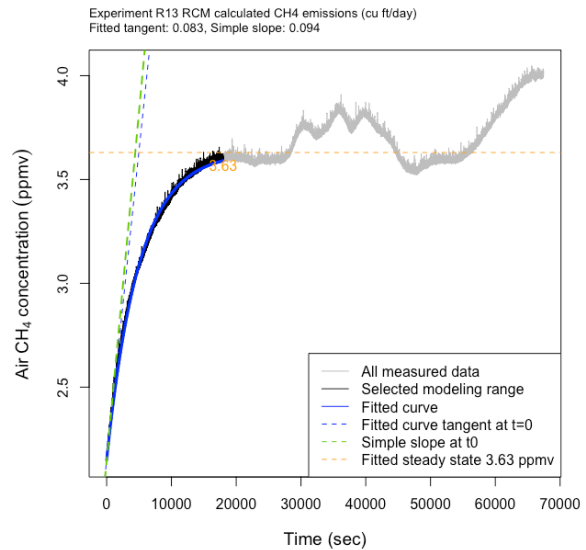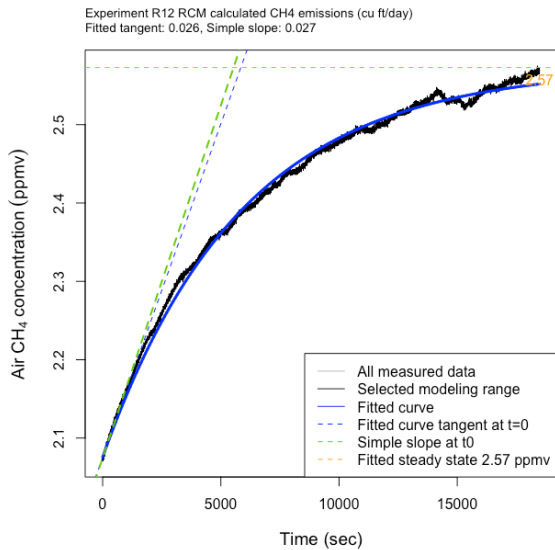
R15 notes: (i) spike example - see section SI 4.6 (ii) fitted tangent using first 15000 sec was 0.49 ft^3 day^{-1}

Experiment R16 RCM calculated CH4 emissions (cu ft/day)
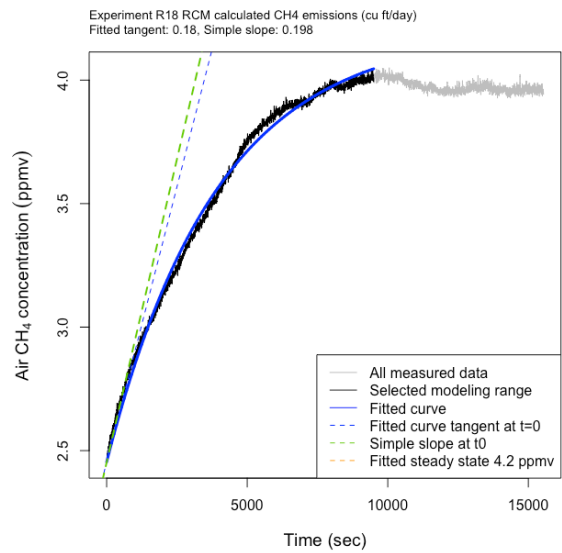Fitted tangent: 0.171, Simple slope: 0.172
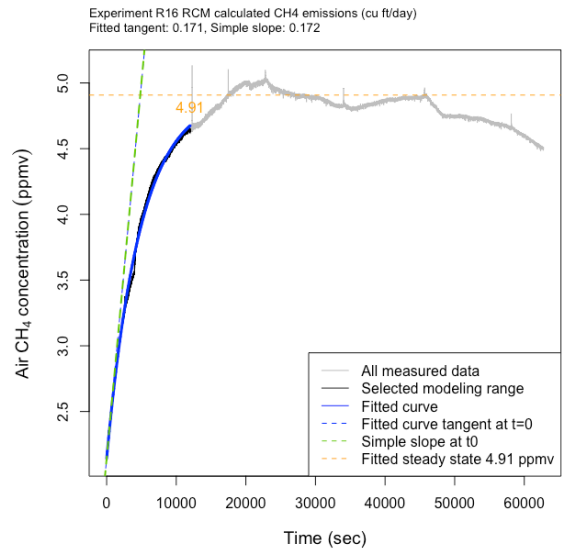
R16 notes: (i) spike example - see section SI 4.6 (ii) fitted tangent using first 25000 sec was 0.16 ft^3 day^{-1}

Experiment R17 RCM calculated CH4 emissions (cu ft/day)
Fitted tangent: 0.087, Simple slope: 0.091

Experiment R18 RCM calculated CH4 emissions (cu ft/day)
Fitted tangent: 0.18, Simple slope: 0.198

4

Experiment R19 RCM calculated CH4 emissions (cu ft/day)
Fitted tangent: 0.101, Simple slope: 0.082

Experiment R20 RCM calculated CH4 emissions (cu ft/day)
Fitted tangent: 0.008, Simple slope: 0.001

R20 note: using data between
1600 and 4250 sec results in a fitted tangent
flux of 0.01 ft^3 day^{-1}

Experiment R21 RCM calculated CH4 emissions (cu ft/day)
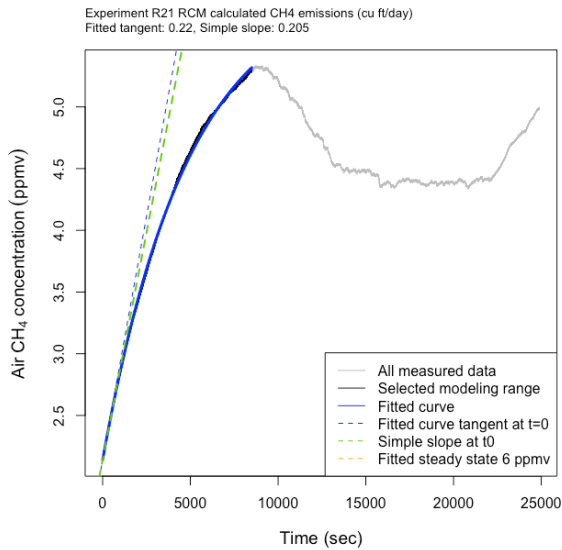Fitted tangent: 0.22, Simple slope: 0.205

Figure 23. Room chamber method (RCM) data and modeling plots