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**ESDD** 

3, C791–C792, 2013

Interactive Comment

## *Interactive comment on* "Quantifying drivers of chemical disequilibrium in the Earth's atmosphere" by E. Simoncini et al.

## Anonymous Referee #1

Received and published: 10 January 2013

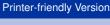
Methane and oxygen should be added to the title.

The  $\sim 50\%$  uncertainty in the methane flux needs more detailed discussion. For example, what observations are needed to reduce this

uncertainty. With a 50% uncertainty, carrying two digits in the final result

is unwarranted. Thus 0.67 should be 0.7 +/- 0.4.

The claim in the abstract that the "biotically-generated portion of the power" is 0.67 TW seems to be misleading, given the statements on page 1308 (lines 12-17) regarding the role of sunshine, precipitation and condensation (abiotic) in maintaining the H2O partial pressure disequilibrium.



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Interactive Discussion

**Discussion Paper** 



I am skeptical about the statement on p1291 (line 16) that the thermal disequilibrium of the Earth is "primarily the result of left-over heat from the Earth's formation" This needs a reference or two.

Typos

p1296, line22, "s given" should be "is given"

- p1297, line 2,"this figure" should be this equation?
- p1299,line 20, change "now"to "no"
- p1301, line 23, subscript the "2" in "H2O"
- p1303, line 4, is "Tg" "Tera grams"?
- p1306, line 12 change "at rate"to "at a rate"

p1311,line14, change "of planet's atmospheric chemistry" to "of the planets' ... "

Interactive comment on Earth Syst. Dynam. Discuss., 3, 1287, 2012.

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