

Interactive comment on “Quantifying drivers of chemical disequilibrium in the Earth’s atmosphere” by E. Simoncini et al.

Anonymous Referee #1

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Methane and oxygen should be added to the title.

The ~ 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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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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