

## **Reply to the Editor's comments**

We thank the Editor for taking the time to review our revised manuscript and to provide useful suggestions for further improvement. We have now carefully edited the manuscript to remove outstanding errors. We address the Editor's specific comments below.

### **Comment 1:**

Page 3: “Avnery et al. (2011a) with losses from three major crops estimated to be 11–18 billion USD2000 annually in the year 2000 (Avnery et al., 2011a) and”

Sentence is not correct (adding found..) and you can according to me leave out the second-time reference to Avnery et al., 2011a

### **Author's reply**

We have now corrected this sentence.

### **Comment 2:**

Page 3: “at the biosphere–atmosphere and ocean–atmosphere interfaces”

Suggestion to change this to “Earth’s surface-atmosphere interface” since in the current sentence you actually exclude the role of cryosphere-atmosphere exchange (and bare soil-atmosphere interface unless we see the desert areas also as a part of the biosphere).

### **Author's reply:**

We have now changed the text as suggested by the Editor.

### **Comment 3:**

Page 4: “with some modifications (e.g., Ganzeveld and Lelieveld, 1995; Wang et al., 1998; ValMartin et al., 2014)”. Check if the references should be listed according to increasing/decreasing reference year. This comment is not restricted to these specific references here but to all references in the ms.

### **Author's reply:**

We understand that although there are no specific rules regarding the order of the citations, the citations should be in order of scientific precedence/importance; but if all else is equal, the older papers deserve more credit and should come first. We have reviewed our citations and applied this guide as consistently as possible throughout.

### **Comment 4:**

Page 5; “...CTMs and CCMs. While dry deposition has been studied in detail in individual models (e.g., Ganzeveld et al., 1995; Tuovinen et al., 2004, 2009; Zhang et al., 2002)”.

You included these examples of studies on the evaluation of individual model analysis of ozone dry deposition where the examples you included are, if I am correct, referring to studies with CTMS where the Ganzeveld et al. 1995 study was done with an CGM.

**Author's reply:**

We have removed the Ganzeveld et al. 1995 reference.

**Comment 5:**

Page 6; suggest to change to "...O<sub>3</sub> surface layer concentration respectively"

**Author's reply:**

We have now changed the text as suggested by the Editor.

**Comment 6:**

Page 7: "...monthly average flux"

**Author's reply:**

We have now corrected this sentence.

**Comment 7:**

Page 7: "that reported an average O<sub>3</sub> dry deposition flux or where long term measurement data was independently made available for this study." I would anyhow suggest to change this to: "that reported long-term average O<sub>3</sub> dry deposition fluxes"

**Author's reply:**

We have now corrected this sentence. We note the Editor's suggestion, but we have not changed the sentence, in light of the following:

1. We used measured O<sub>3</sub> dry deposition fluxes from short term measurements, but only where an average flux was reported.
2. Not all of the long term measurement data was reported in the literature, but was kindly donated for use in this study.

**Comment 8:**

Page 8: "As CASTNET deposition fluxes are derived using modelled deposition

velocities rather than directly measured fluxes, we discuss the results separately from our comparison with fluxes measured at European and North American sites.". As you can see there is some typos in this sentence. I would also suggest to move this sentence to directly after the first sentence of this paragraph, lines 7-8, followed by some more of these details on the CASTNEX O<sub>3</sub> flux inversion.

**Author's reply:**

We have now corrected this sentence and modified it according to the Editor's suggestion.

**Comment 9:**

Page 8: “2004 (Wild, 2007; )() (Stevenson...

**Author's reply:**

We have now corrected this sentence.

**Comment 10:**

Page 8: “From global ozone budgets in 33 CTM (9 models similar to those used in this study),  $1003 \pm 200$  Tg yr<sup>-1</sup> from 21 models contributing tot he ACCENT model intercomparison Stevenson et al. (2006) (9” This is another example where the sentence is apparently all mixed up.

**Author's reply:**

We have now corrected this sentence.