Author's Response

Comments to the author:

Dear Authors,

I am pleased to inform you that the revised version of your manuscript is accepted for publication after some technical correction. Your response to the referees' comments and your efforts to address the raised criticism are very much appreciated.

As you can see from the reviewer comment below, there is still some disagreement regarding the impact of the simulation length, but as mentioned in the comment it is up to you whether you want to soften your statements in this respect or not.

We would like to thank Andrea Stenke a lot for editing our manuscript!

In the response we use 4 different colors. The blue colored text is the general answer to the reviewer's comments. Additionally, we show how the text is changed in the manuscript: The original text is colored grey, removed text is colored red, and new text is colored green.

We softened our statement:

L512)

Comparing the inversion results for doubled (Fig. 14a) and halved (Fig. 14b) a priori emissions clearly shows that the corresponding biases in the global a posteriori emissions are reduced substantially with increasing backward simulation period and converge towards the rather well known global SF6 emission from the box model. However, it is clear that a substantial bias remains even with a backward simulation period of 50 days. It seems likely that an extension of the backward simulation period beyond 50 days would further reduce the bias. - >

It seems a further extension of the backward simulation period beyond 50 days would be required in order to reduce the remaining bias.

Technical correction: In line 549 it says "the AGAGE 8-box model". This should be changed to 12-box model. Please correct also other instances, which I might have overlooked.

L549)

AGAGE 8-box model -> AGAGE 12-box model