Interactive comment on "Importance of transboundary transport of biomass burning emissions to regional air quality in Southeast Asia" *by* B. Aouizerats et al.

B. Aouizerats et al.

benaouizerats@yahoo.fr

Received and published: 7 November 2014

Atmospheric chemistry and physics,

To Reviewer#2,

The authors appreciate the constructive and helpful comments provided by Reviewer#2 which helped to improve our manuscript. The paper has thus been modified to take into account the recommendations given. Below, we have copied the referee comments in italics and inserted our responses in standard font where appropriate.

Regards,

Dr. Benjamin Aouizerats

Reviewer #2 (Comments to Author):
"Interesting, useful and timely study. Especially in light of the current efforts to develop and improve biomass burning (BB) emission estimates. Such regional and local studies are necessary to complement the global-model approach, to refine the methodology, challenge assumptions, and enhance our understanding of the complex processes contributing to the picture, which (processes) are often difficult to discern from the coarse global-scale approach to correcting the whole global emission datasets. Distinction between anthropogenic and BB contributions to general smoke pollution is also valuable in this study. The paper is well structured and the study uses appropriate analysis methods. However, backing up the analysis claims more thoroughly with a few more references or explanations would benefit the conclusions. The manuscript is recommended for publication in ACP with some revisions:"

1. *"P11223-L23 Indonesia has the highest concentration of emissions (concentration is expected per some unit: time, person, unit area. . .) - not well communicated"*

   We thank Reviewer #2 for this comment and have modified this sentence to "highest density of fire emissions (up to 2000 $gCm^{-2}year^{-1}$) due to frequent fires and high fuel loads".

2. *"P11226 Section 2.2.   Changing the structure of the section will improve readability.   Currently the first part of the section leaves me wondering what observations were used (which network/instruments/satellites, where to get the data, references etc. . .) until they are briefly described on P11227-L7. Better familiarity with the dataset earlier in the section, before presenting the result of the comparison could set the stage for better understanding the comparison."*

We agree with Reviewer #2 and have therefore introduced the various datasets in introduction of section 2.2.

3. *"P11227-L17 Why 2-weeks average? Could you compare instantaneous AOD but more frequently, or 2 weeks was the best signal you get for whatever reason?"*

It was necessary to perform a moving average over a 2-week period of the satellite observations in order to present a consistent comparison of the various sensor measurements and minimize the error and noise due to the different satellite overpass time and large number of the cloud contaminated pixels. We have added a sentence in the manuscript to clarify this point.

4. *"P11228-L8 CO observational dataset introduction would be helpful, even if only named and described in 1-2 sentences. If I am familiar with the dataset " I can relate, if not and I'd like to know more, I'll pull up the paper that is appropriately referenced."*

We have added a descriptive sentence of the dataset as well as the related link to access data and further information.

5. *"Technical corrections: P11223-L22 ...is neither well understood nor quantified. P11231-L18 . . . as the number of day*s* for which . . P11233-L20-21 . . . the impact of biomass burning *on* (?) aerosol pollution levels . . Table 2 please provide the units of mass concentration numbers"*

We have modified the manuscript in order to take into account the corrections.
Again, we would like to thank Reviewer #2 for his/her useful comments.