

## ***Interactive comment on “Isoprene emissions over Asia 1979–2012: impact of climate and land use changes” by T. Stavrakou et al.***

### **Anonymous Referee #2**

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The paper shows the impact of the weaker emissions from a rain tropical forest, expanding oil palm with the higher emissions, and more realistic downward solar radiation, on estimations of isoprene emissions in Asia. The estimated bottom-up emissions were also verified by satellite-based emissions. The methods seem sound and the most up-to-date. The results are very useful for the related researchers.

The paper is well-organized and the interpretation seems so clear that a reader can easily understand the contents. In the text, the reviewer could almost find the reasons for some questions, which he/she would like to ask about the methods and the estimations/results.

But he/she still has one question: Why are isoprene emissions larger in S2 than in

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S3 in Malaysia (Fig. 9)? The results are different from those in Indonesia, although the reasons are found in Page 29564, L28 – Page29565, 29565. This means original standard emission factor and/or fraction of oil palm are in S2 more than that in S3?

Minor comments: Page 29555, Lines 17-20: There is a similar report of weaker isoprene emission from a rain tropical forest canopy in the Malay Peninsula: Saito, T., Yokouchi, Y., Yoshiko Kosugi, Y., Tani, M., Philip, E., Okuda, T.:Methyl chloride and isoprene emissions from tropical rain forest in Southeast Asia, Geophys. Res. Lett., 35, L19812, doi: 10.1029/2008GL035241, 2008. This also supports your results.

Page 29563, Lines 8-21: The content (i.e., the relationship between Isoprene emission in Asia and ONI) seems a little bit abrupt, and it should also be stated in the introduction's last paragraph, in advance.

Page 29566, Line 6-8, "negative trend": Here, it is better to state that the negative trend is due to replacement of cropland with tree plantations, as mentioned in page 29554, lines 14-16.

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Interactive comment on Atmos. Chem. Phys. Discuss., 13, 29551, 2013.

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