

Interactive comment on “Mapping Asian anthropogenic emissions of non-methane volatile organic compounds to multiple chemical mechanisms” by M. Li et al.

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The paper titled, “Mapping Asian anthropogenic emissions of non-methane volatile organic compounds to multiple chemical mechanisms” provides a useful summary and details of a method of creating model ready speciated emissions for air quality models. The authors propose a framework for creating chemical mechanism specific model ready files. The paper overall is well written. Hopefully emission inventory and emission processing for other parts of the world can use this paper as a guide when developing speciated emissions. Just a couple of notes and comments that hopefully the authors can address.

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Response: We thank Referee #2 for the encouraging comments.

(1) Please indicate the version of SPECIATE used for this paper, since many versions have been released by EPA.

Response: The version of SPECIATE database used in this work is 4.2, which is added in the main text and Table S1 of the revised paper.

(2) The abstract discusses an “improved” speciation framework for Asian emissions. The information used to create the model ready emissions (tables, cross-reference information, etc) should be made available in addition to the model ready data. The availability of the entire framework should be indicated in the abstract.

Response: The framework and data are now available from the following website: <http://mic.greenresource.cn/intex-b2006>. We also indicated this in the revised abstract.

(3) Page 32653, line 8. The discussion of SMOKE should note that the SMOKE can process emissions for any chemical mechanism for which the user provides the appropriate input. The user is not constrained by the input files provided with SMOKE and it is the user’s responsibility to ensure correct chemical mechanism SMOKE inputs.

Response: Corrected in the revised manuscript.

(4) Page 32657, lines 2-5. Sentence beginning “For of the entire..” is awkwardly worded. Recommend: “For all of Asia . . .” or “For the entirety of Asia. . .”.

Response: Changed.

(5) Page 32659, Line 23: The process of grouping and averaging profiles to make a composite can sometimes introduce additional error or uncertainty.

Response: We agree. We indicated this potential uncertainty in the revised manuscript.

(6) Page 32662, line 24-28; Include a table with the cross referencing of source sectors

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to spatial proxies (surrogates) even though it is very small. Contrast this with other countries that have a detailed cross referencing of proxies to source categories.

Response: We added a cross-referencing table of sectors to spatial surrogates in the revised manuscript (Table 4).

(7) Page 32662, line 7: Change Cater(2013) to Carter (2013).

Response: Corrected.

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