

## Review of revision of Hansen et al. for Atmospheric Chemistry and Physics

### ***General Comments***

In the revised submission of “Haze in Singapore - Source Attribution of Biomass Burning from Southeast Asia”, Hansen et al. have responded to some of the concerns expressed in the first round of reviews. The manuscript is strengthened somewhat, but conflicting and unclear statements remain. Additionally, the grammar still needs to be refined though the duplication of the Discussion and Conclusions has been somewhat mitigated.

To the concerns expressed that the degree of agreement between the observations and model do not constitute a case for “source apportionment”, the authors only replied in agreement that the model performance was worse than they desired. If the authors think that a comparison of NAME results with observations is worth sharing with the community, they need to consider another title for the paper that does not involve “source apportionment”. They have not modeled any other sources of PM10 nor have they made an effort to determine a statistically reasonable background concentration across the years. If I understand p. 7, l. 25-7 correctly, they are simply comparing a single back trajectory model convolved with satellite-based fire emissions estimate to observations at two distinct sites, which it would be a misrepresentation to call source apportionment.

Since the authors did not address the major issue raised in the first round of reviews nor all of the specific comments that were made, it is not clear that they are willing or able to do so. Accordingly, I will not recommend publication in Atmospheric Chemistry and Physics unless they are able to revisit the original comments, some of which are repeated here, and address them thoroughly.

### ***Specific Comments***

The third sentence of the introduction is a run-on sentence. Additionally, the second sentence of the second paragraph in the introduction is a run-on sentence. I will not note other grammatical errors, but someone must correct these and others before this article is suitable for publication.

Acronyms including but not limited to NAME, GFAS, and CAMS are introduced after being used previously. Please ensure that every acronym is introduced upon first usage.

“Sec” is not an appropriate abbreviation for “Section”. Please replace all occurrences.

“Air history” is an inaccurate term to refer to the convolution of emissions and back trajectory information. Please revise throughout.

<b><i>Line</i></b>	<b><i>Comment</i></b>
p. 4, l. 16	“validated” should be “evaluated” here and elsewhere (e.g., p.7, l. 4). Please change all occurrences when speaking of a comparison of measurements and models. Both have errors, which indicates that neither is sufficient for validating the other.
p. 7, l. 25-7	This statement conflicts with the last sentence of the abstract, which states that “variation in local meteorology can impact concentrations of particulate matter significantly”. If that were true, it would not be sufficient to use a central

meteorological site. Please resolve by removing one of the statements. If the abstract statement is not changed, then the entire study needs to be presented for only one Singapore site. If a single receptor site was used for the back trajectories, it is not clear how the modeled concentrations in Figure 4 would be distinct as they appear to be or how these distinctions were investigated as indicated on p. 21, l. 1-3.