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Atmospheric Chemistry and Physics Discussions

Interactive comment on "MIX: a mosaic Asian anthropogenic emission inventory for the MICS-Asia and the HTAP projects" *by* M. Li et al.

Anonymous Referee #1

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This paper presented a mosaic emission inventory of air pollutants for Asia, which is a combination of existing studies or progress in emission estimates by country and sector. Moreover the work made a comparison between selected inventories particularly for given countries and sectors. It is good to have such kind of results to support MICS-Asia and HTAP studies, as suggested by the authors. In general, the paper is well organized and clearly written. Some more explanations and discussions might be added to improve the work as follows.

1. Methodology section. The reasons of inventory choice should be discussed. There are obviouis overlaps in regions and species between current inventories, while the strategy of inventory choice was not sufficiently described. The readers would then question why the emissions of some species/regions were from a given inventory while

the rest were from another. It would be clearer if the authors could present their preference when developing the mosaic MIX inventory.

2. Section 3.2. It would be more interesting if the inter-annual trends in emissions could be anlyzed by sector and species for countries other than China or India. It is well known that China started to conduct more and more stringent measures to control emissions since 2005, while such information is lacking or not well provided for other Asian countries. Moreover, the driving forces or reasons for the inter-annual trends should also be provided.

3. For comparison section (Section 4), I understand it might be difficult to compare the detailed emission factors between MIX and EDGAR, but is it possible to make a more detailed comparison between MIX and REAS 2, for sectors/regions with different estimates in the two inventories?

4. Small issue: lines 22-24, P34833. Besides penetration, the removal efficiency that is also crucial for SO2 estimates was assumed poorer than expected before 2010. Would that weaken the discussion here? I suggest a detailed quantitative comparison and analysis here for SO2 emission estimate.

In general I recommend the paper accepted with the issues stressed.

Interactive comment on Atmos. Chem. Phys. Discuss., 15, 34813, 2015.