

Interactive comment on “Air quality and acid deposition impacts of local emissions and transboundary air pollution in Japan and South Korea” by Steve Hung Lam Yim et al.

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Received and published: 24 March 2019

Dear authors,

I have some short questions here:

1. When you refer to the emission inventory, you cited Gu and Yim et al. (2016). There are two pieces of literature in the reference: Gu Y. and Yim, S. H. L.: The air quality and health impacts of domestic trans-boundary pollution in various regions of China, *Environ. Int.*, 97, 117–124, doi:10.1016/j.envint.2016.08.004, 2016a. Gu, Y. and Yim, S. H. L.: The air quality and health impacts of domestic trans-boundary pollution in

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various regions of China, , 97, 117–124, doi:10.1016/j.envint.2016.08.004, 2016b.

Actually, the inventory and its limitation were very briefly described in Gu and Yim et al. (2016), and the reviewer's comments were not shown. So would you please explain in detail the inventory and its limitation? I believe this is also very important and fundamental for the manuscript.

And what about the natural dust part of the PM_{2.5} if it is not included in the inventory at all?

2. Can you get the components of the PM_{2.5}? I think there are more elements other than SO₄²⁻/NO₃⁻ in the PM_{2.5} and the components of the PM_{2.5} may partly help to explain the seasonal variations.

3. Would you please also explain in greater detail the chemistry process regarding the PM_{2.5} and its wet deposition which was claimed to be the significant part of the deposition?

4. Have you ever traced the PM_{2.5} backward to see the trajectories and the origin from a Lagrangian perspective? If you did so, do the results agree with your current conclusions?

Thank you.

Regards, Xue

Interactive comment on Atmos. Chem. Phys. Discuss., https://doi.org/10.5194/acp-2019-175, 2019.

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