

## ***Interactive comment on “Assessing water vapor tomography in Hong Kong with improved vertical and horizontal constraints” by Pengfei Xia et al.***

### **Anonymous Referee #1**

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This paper focus on the optimizing of tomography technique in three aspects, 1) establishing a new  $T_m$  model; 2) determining the scale height of water vapor, which used to construct the vertical constraint; 3) Obtaining the smoothing factor in the horizontal constraint. This paper has plenty of merit and is fairly well written. Therefore, I would recommend it for publication after the following corrections.

General comments:

P254 Figure 3 only give three kinds of result while five kinds of result presented in the caption. Please correct.

If possible, please added some comments about the reasons why the improved result is not evident, as it can be seen from the comparison of tomographic result with ra-

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diosonde data, the improved performance of the optimized tomographic result (Figure 5) seems not so good.

Minor revision:

P38, please revise “Flores et al., 2001” to “Flores et al., 2000” and cite the reference “Bevis et al., 1992”.

P113 please revise “Flores et al., 2001” to “Flores et al., 2000”.

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Interactive comment on Ann. Geophys. Discuss., <https://doi.org/10.5194/angeo-2018-37>, 2018.

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