

Interactive comment on “Are precipitation anomalies associated with aerosol variations over Eastern China?” by Xiangde Xu et al.

Xiangde Xu et al.

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We are grateful to the referee for the encouraging comments and careful revisions which helped to improve the quality of our paper. In the following we quoted each review question in the square brackets and added our response after each paragraph.

[The manuscript is thorough, clear, compelling, very well written, and presents the results with good figures and tables. I recommend publication after attending to the following detailed comments.]

Reply 1: the referee's encouraging comments are great appreciated. We have revised our manuscript following the detailed \ comments of referee.

[Line 71: Please give references for the previous investigations of this issue primarily

C1

focused on limited cases (references).]

Reply 2: Thanks for the suggestion. Accordingly, we have given the following references in the revised manuscript:

Li, Z., Niu, F., Fan, J., Liu, Y., Rosenfeld, D. and Ding, Y.: Long-term impacts of aerosols on the vertical development of clouds and precipitation, *Nat. Geosci.* 4, 888–894, 2011.

Rosenfeld, D., Dai, J., Yu, X., Yao, Z., Xu, X., Yang, X. and Du, C.: Inverse relations between amounts of air pollution and orographic precipitation, *Science* 315, 1396–1398, 2007.

Zhao, T. Liu, D., Zheng, X., Yang, L., Gu, X., Hu, J., Shu, Z., Chang, J., Wu, X.: Revealed variations of air quality in industrial development over a remote plateau of Southwest China: an application of atmospheric visibility data, *Meteorol Atmos Phys*, doi:10.1007/s00703-016-0492-7, 2016.

[Please give a website or reference for MODIS data.]

Reply 3: because the MODIS aerosol products are not used in the result analysis of revised manuscript, we have deleted the sentence “annual average AOD data in 2001–2010 from Moderate Resolution Imaging Spectroradiometer (MODIS)” at the beginning of Section 2. Data. Therefore, we have not given any information on MODIS data in the revised manuscript..

[For all of Chinese map, if the author can use LambertEqualArea projection (<http://ncl.ucar.edu/Applications/maponly.shtml>), that would be nice.]

Reply 4: Thanks for the suggestion, In order to more clearly present the regional distributions of our results over mainland of China, we have used cylindrical map projection for all of Chinese map..

[Fig. 10: Please restrict the four panels in the same size.]

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Reply 5: Following the referee's suggestion, we have restricted the four panels of Fig. 10 in the same size. Please see the modified Fig. 10 in the revised manuscript.

Interactive comment on Atmos. Chem. Phys. Discuss., doi:10.5194/acp-2016-1034, 2017.