Interactive comment on "A high-resolution inventory of air pollutant emissions from crop residue burning in China" by Zhang et al.

Zhang et al.

Responses to the comments by Dr. Chen (referee)

First of all, we would like to thank Dr. Chen for the valuable comments, which will be of great help for improving our paper. In order to facilitate reading, the original comments from the referee are listed in italics and answered one by one.

General comment and response:

Zhang et al. reported an emission inventory of major air pollutants from crop residue burning for the year of 2014. The monthly and 1-km spatial variation were obtained based on the farming practice in 296 prefecture-level cities. The work is interesting, and suitable for the ACP readers. Some important papers should be referred to overview the updated research on this field:

Chen, J., C. Li, Z. Ristovski, A. Milic, Y. Gu, M. S. Islam, S. Wang, J. Hao, H. Zhang, C. He, H. Guo, H. Fu, B. Miljevic, L. Morawska, T. Phong, Y. L. A. M. Fat, G. Pereira, A. Ding, X. Huang & U. C. Dumka (2017) A review of biomass burning: Emissions and impacts on air quality, health and climate in China. Science of the Total Environment, 579, 1000-1034.

Zhou, Y., X. F. Xing, J. L. Lang, D. S. Chen, S. Y. Cheng, L. Wei, X. Wei & C. Liu (2017) A comprehensive biomass burning emission inventory with high spatial and temporal resolution in China. Atmospheric Chemistry and Physics, 17, 2839-2864.

We appreciate the referee for the positive comments on our paper and suggestion for additional references. Besides the two papers listed above, more literature review will be made and current research in this field will be updated in revised manuscript.

Specific comments & responses:

(1) Line 27, P1, "with most (85 %) being corn, wheat and rice straw"could delete "(85%)";

We accept this suggestion and will delete this expression.

(2) From Lin33 P2 to Line 7 P3, the paragraph should be shorten.

We will shorten this paragraph, and improve the writing of the whole manuscript.

(3) Line 22 P5, about "For NH_3 and SO_2, contributions were relatively small." I suggest authors should give the data how much they? As the importance of NH_3 and SO_2 as precusors for ammonium and sulfate, it should conclude.

Yes, the two gases are important precursors of the secondary aerosol. The detailed

data of their contributions will be given in the revised version.

(4) In table 3, what does it mean, for example, "-55–105"?
It means the lower and upper limits of the intervals with 95% confidence, from -55% to 105% of the mean emission. We are regret that it was not described clear in table 3 and will revise it later.

(5) Figure 2 P16, does it can be divided from regions ïij ´ L6 regionsïijL'ïij§
Because of the misprints in this comment, we are not quite sure about what the referee meant exactly. However, we understand that it would be interesting if the provinces shown in figure 2 were divided into different regions, as mentioned in Line 15-20 P6, and in table S6 of the supplement. We will consider to do it in the revision of the manuscript.