

Interactive comment on “Increased inorganic aerosol fraction contributes to air pollution and haze in China” by Yonghong Wang et al.

Anonymous Referee #2

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The authors analyzed the trends of visibility using the dataset of 262 surface observation sites in China, the trends of SO₂ and NO₂ using the satellite data. They also conducted an intensive campaign during the winter of 2010, and drew a conclusion that increased inorganic fractions in the aerosol particles are the key component in haze events. In general, this study do provide useful information. But I have several key comments that need to be addressed before can be published in ACP.

1. Increase of the inorganic species control the aerosol pollution episodes in east China is not new. Plenty previous studies have provide similar results. In addition, an intensive campaign but not a long term measurement dataset was deployed here to reach the above-mentioned conclusion. This make the conclusion not reliable enough. For example, is there some cases that the PM_{2.5} increase was dominated by organics?

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More deeply and detailed analysis is needed.

2. Since strong control measures were conducted by Chinese government from around 2007-2010, the trends analysis here, which was stopped at 2010, is a bit tricky. The trend after 2010 would be more interesting.

3. The trends showed in Figure 2 was in recent years e.g. after 2007, was decrease but not increase. This should be correlated to the emission reduction I mentioned above.

4. In Figure 5, the increase of organics was large although its fraction decreased. Even in the lowest visibility bin, the contribution of organics was comparable to inorganic speices.

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