

## ***Supplementary information***

### **Extreme haze pollution over northern China in January, 2013: chemical characteristics, formation mechanism and role of fog processing**

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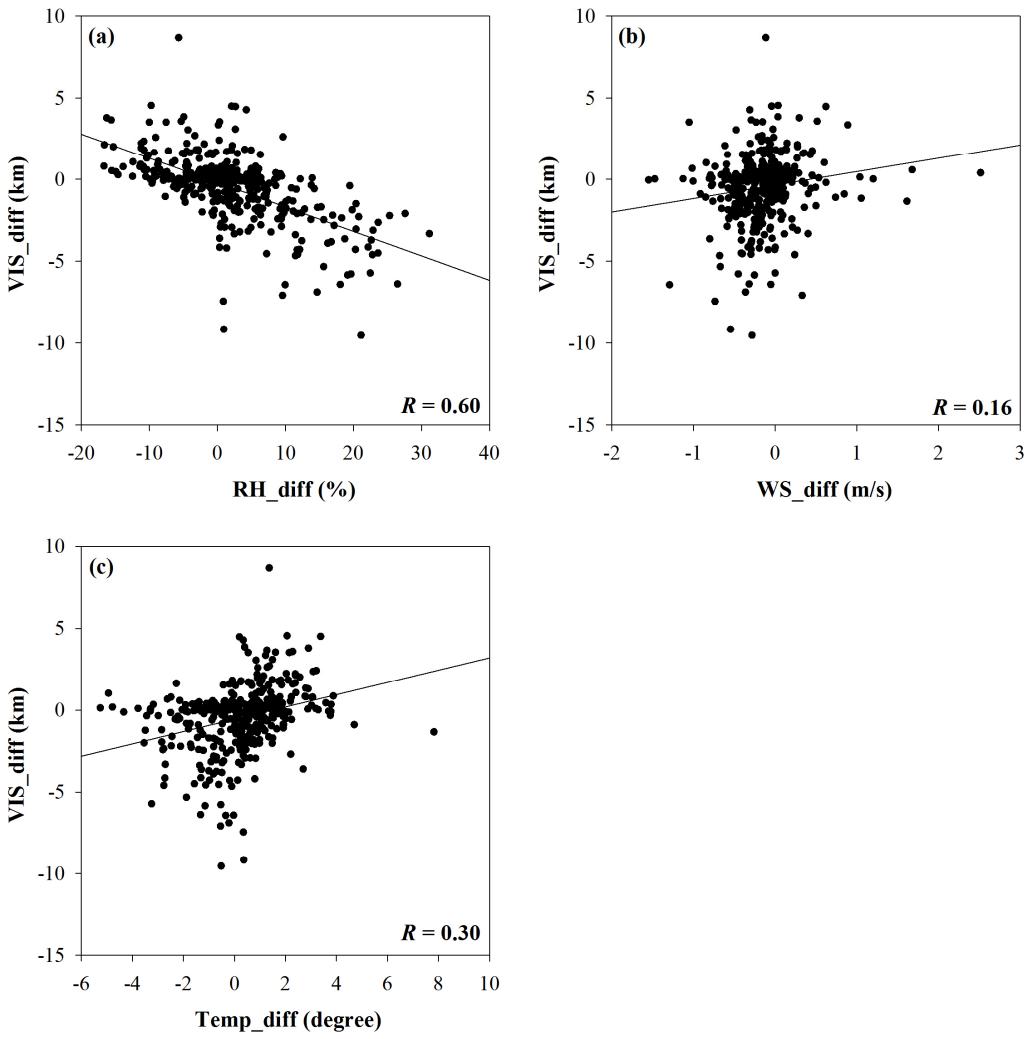


Fig. S1. The correlations between  $\triangle$ Vis (the visibility difference between 2013 and the average values during 2006 – 2012 in January) and (a)  $\triangle$ RH, (b)  $\triangle$ WS, and (c)  $\triangle$ Temp. Correlation coefficients are shown on the bottom of each plot. Each scatter represents one NCDC site.

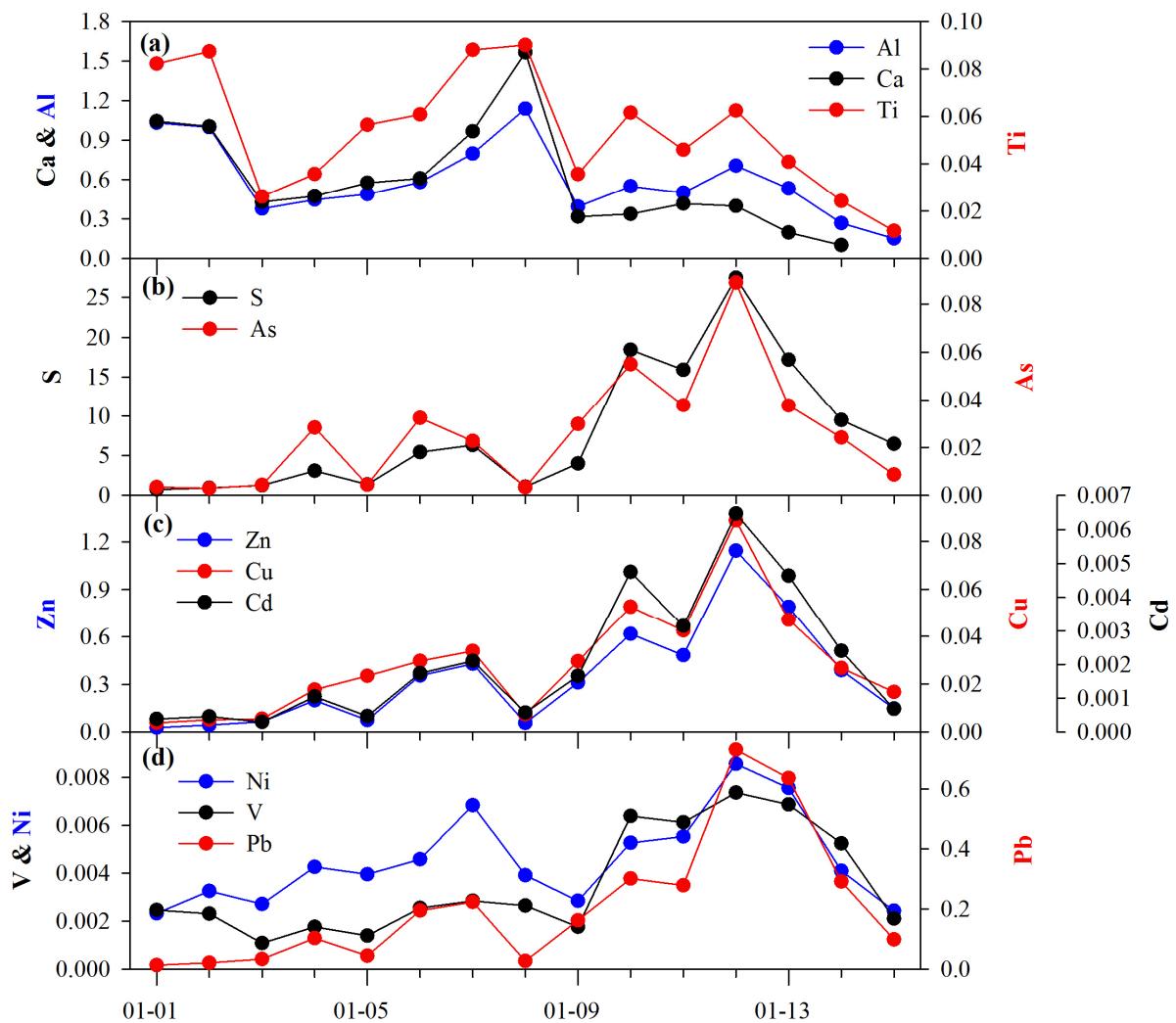


Fig. S2. Temporal variations of trace elements in  $\text{PM}_{2.5}$ , all units are in  $\mu\text{g}/\text{m}^3$ .

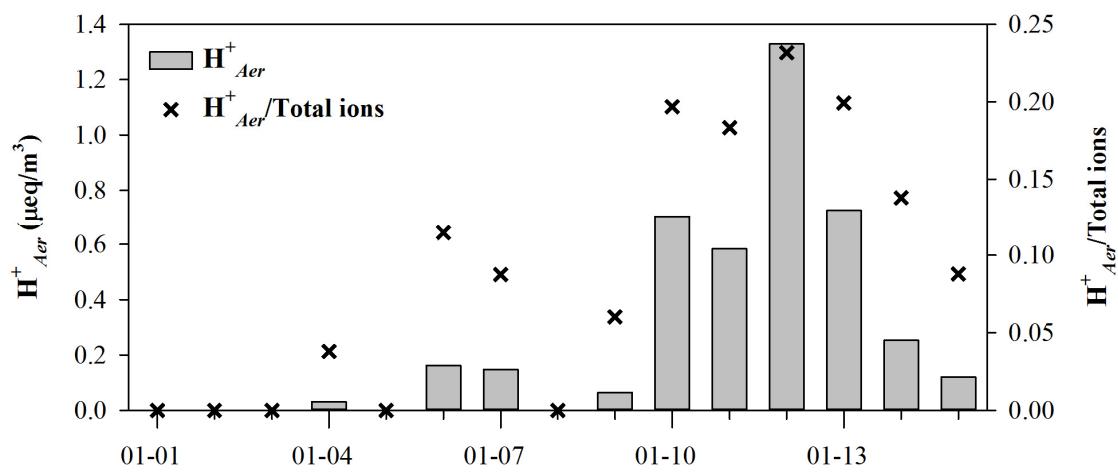


Fig. S3. The temporal variations of the calculated  $\text{H}^+_{\text{Aer}}$  concentration and the ratio of  $\text{H}^+_{\text{Aer}}$  in the total inorganic ions.