



## Supplement of

## Sensitivity analysis of the surface ozone and fine particulate matter to meteorological parameters in China

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## **Supplemental Materials**



Fig. S1 Observed and predicted relationships between surface MDA8  $O_3$  (ppb) and daily  $T_{max}$  (K) in the 5 cities in July 2013.



**Fig.S2** Changes in monthly average O<sub>3</sub>-8h (ppb) in January and July, 2013 due to (a) T+1.5K, (b) WS-20%, (c) AH+20%, (d) PBLH-30%, (e) CLW+20%, (f) PCP+20%.



Fig.S3 Changes in monthly average O<sub>3</sub>-8h (ppb) in January and July, 2013 due to (a) T+0.5K, (b) WS+5%, (c) AH+5%, (d) PBLH+10%, (e) CLW+5%, (f) PCP+5%.



**Fig. S4** Changes in monthly average O<sub>3</sub>-8h (ppb) in January and July, 2013 due to (a) T-0.5K, (b) WS-5%, (c) AH-5%, (d) PBLH-10%, (e) CLW-5%, (f) PCP-5%.



Fig.S5 Changes in monthly average  $PM_{2.5}$  concentration (µg m<sup>-3</sup>) in January and July, 2013 due to (a) T+1.5K, (b) WS-20%, (c) AH+20%, (d) PBLH-30%, (e) CLW+20%, (f) PCP+20%.



**Fig.S6** Changes in monthly average  $PM_{2.5}$  concentration (µg m<sup>-3</sup>) in January and July, 2013 due to (a) T+0.5K, (b) WS+5%, (c) AH+5%, (d) PBLH +10%, (e) CLW+5%, (f) PCP+5%.



**Fig.S7** Changes in monthly average  $PM_{2.5}$  concentration (µg m<sup>-3</sup>) in January and July, 2013 due to (a) T-0.5K, (b) WS-5%, (c) AH-5%, (d) PBLH-10%, (e) CLW-5%, (f) PCP-5%.



**Fig. S8** The combined-change simulation of monthly average  $O_3$ -8 h (ppb) in (a) January and (b) July, and monthly average PM<sub>2.5</sub> (µg m<sup>-3</sup>) in (c) January and (d) July 2013. These perturbations include T+1.0K, WS-10%, AH+10%, PBLH-20%, CLW+10%, and PCP+10%.



Fig.S9 The monthly average fraction of different components in PM<sub>2.5</sub> in (a) January and (b) July.



**Fig.S10** Changes of O<sub>3</sub>-8h concentration (ppb) in January and July 2013 caused by temperature perturbation: (a) is Beijing; (b) is Shanghai; (c) is Guangzhou; (d) is Chongqing; (e) is Xi'an



Fig.S11 Same as Fig. S10, but meteorological perturbation is wind speed.



Fig.S12 Same as Fig. S10, but meteorological perturbation is absolute humidity.



**Fig.S13** Change of total  $PM_{2.5}$  concentration (µg m<sup>-3</sup>) in January and July 2013 caused by temperature perturbation: (a) is Beijing; (b) is Shanghai; (c) is Guangzhou; (d) is Chongqing; (e) is Xi'an.



Fig.S14 Same as Fig.S13, but meteorological perturbation is wind speed.



Fig.S15 Same as Fig. S13, but meteorological perturbation is absolute humidity.