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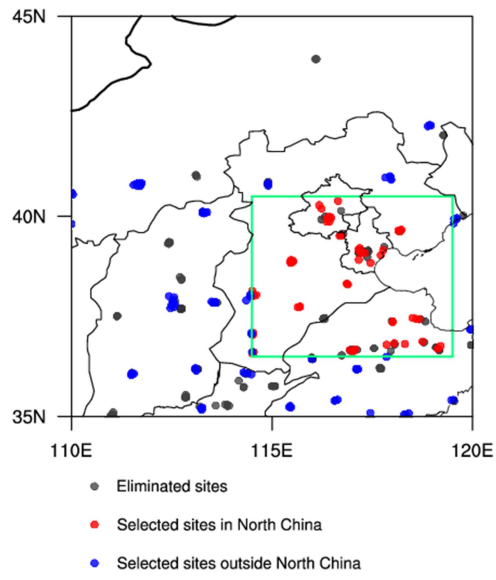
*Supplement of*

## **A typical weather pattern for ozone pollution events in North China**

**Cheng Gong and Hong Liao**

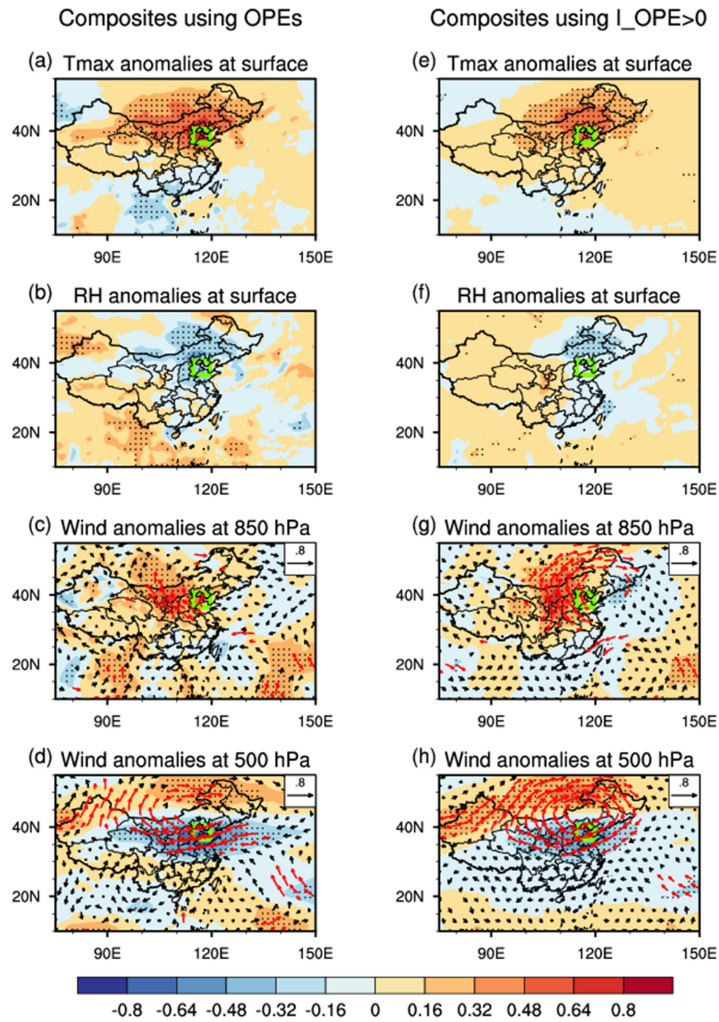
*Correspondence to:* Hong Liao ([hongliao@nuist.edu.cn](mailto:hongliao@nuist.edu.cn))

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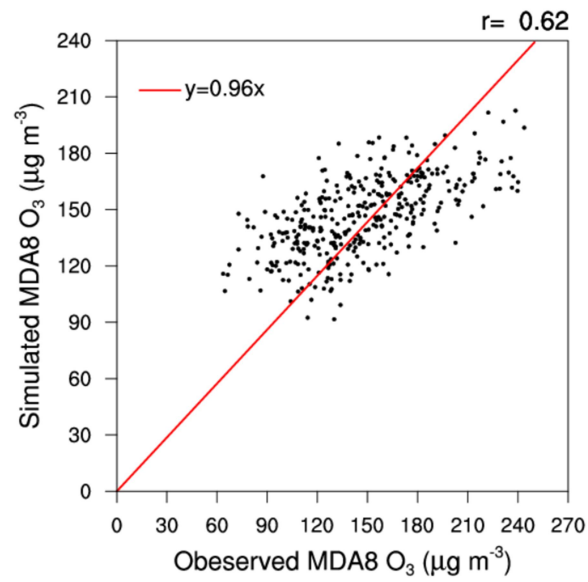


**Figure S1.** Distribution of the observational sites in North China. The gray dots indicate sites eliminated by the data quality control (see Sect. 2.1 for details). The red and blue dots indicate the selected sites inside and outside North China, respectively. The green rectangle encloses North China.

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5 **Figure S2:** Weather conditions for OPEs in North China. Left column shows composites of weather conditions for observed OPEs (on the basis of observed O<sub>3</sub> concentrations) for (a) anomalous Tmax, (b) anomalous RH, (c) anomalous wind vectors at 850 hPa (shades indicate meridional flow) and (d) anomalous wind vectors at 500 hPa (shades indicate zonal flow). (e)-(h), the same as (a)-(d), respectively, but show composites of weather conditions for days with I<sub>OPE</sub>>0. The data shown are composited over the standardized time series during May-July of 2014-2017 (see Sect. 2.2). The green solid lines enclose North China. The red vectors in (c), (d), (g) and (h) and black dots in (a)-(h) are significant winds and parameters at 95 % confidence.



5 **Figure S3.** The linear regression through the origin between observed and simulated MDA8 O<sub>3</sub> concentrations (μg m<sup>-3</sup>). The black dots indicate the daily observed and simulated MDA8 O<sub>3</sub> concentrations averaged over North China from May to July in 2014-2017, and the correlation coefficient between them are given at the top-right corner. The red line indicates the regression line through the origin calculated by the least square method.