

Supplement for Meteorological normalization of surface ozone variability across warm and cold seasons in China during 2015–2024

Zhenying Ye¹, Run Liu¹, Tingting Hu^{2,3}, Guoxin Chen¹, Min Wu¹

5 ¹College of Environment and Climate, Institute for Environmental and Climate Research, Jinan University, Guangzhou, 511443, China

²Fujian Academy of Environmental Sciences, Fuzhou, 350013, China

³Fujian Key Laboratory of Environmental Engineering, Fuzhou, 350013, China

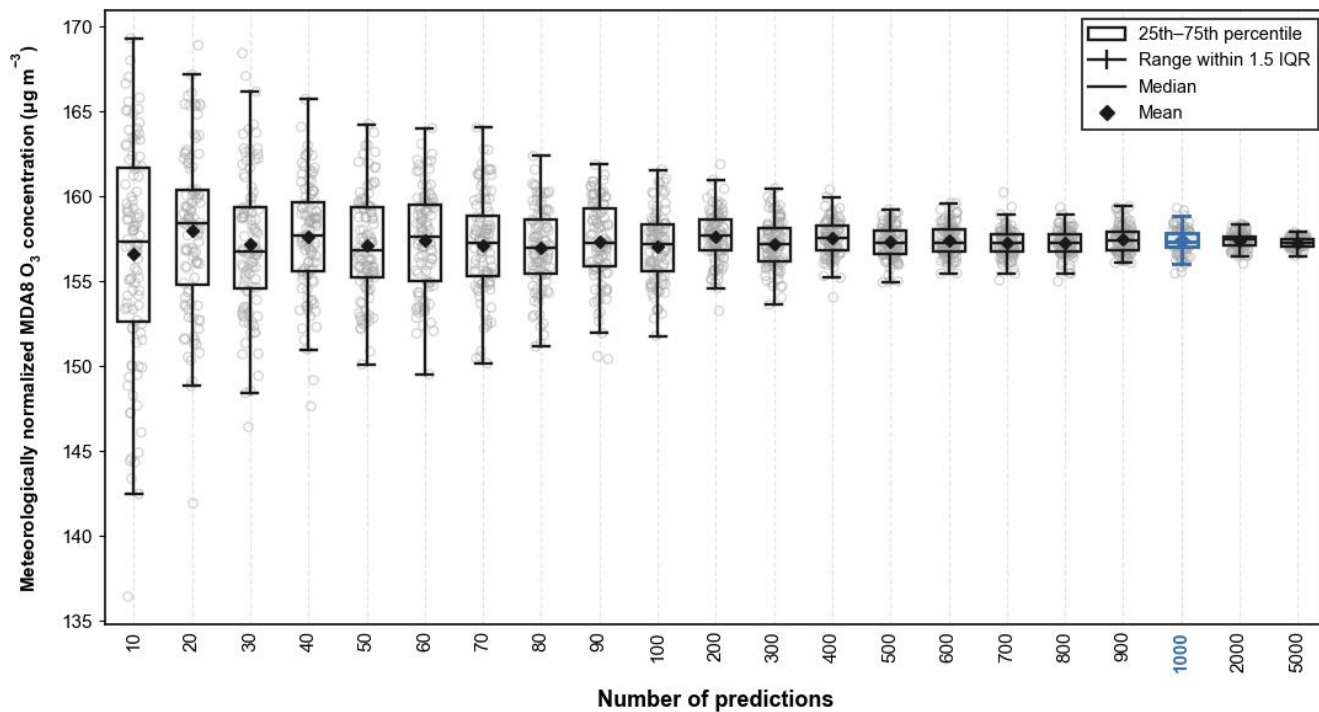
Correspondence to: Run Liu (liurun@jnu.edu.cn)

10 **Table S1: Classification of major polluted regions and representative cities used in this study**

Region	Cities
NCP	Beijing, Tianjin, Shijiazhuang, Tangshan, Qinhuangdao, Handan, Xingtai, Baoding, Zhangjiakou, Chengde, Cangzhou, Langfang, Hengshui, Taiyuan, Datong, Shuozhou, Xinzhou, Yangquan, Changzhi, Jincheng, Jinan, Qingdao, Zibo, Zaozhuang, Dongying, Weifang, Jining, Taian, Rizhao, Linyi, Dezhou, Liaocheng, Binzhou, Heze, Zhengzhou, Kaifeng, Pingdingshan, Anyang, Hebi, Xinxiang, Jiaozuo, Puyang, Xuchang, Luohe, Nanyang, Shangqiu, Xinyang, Zhoukou, Zhumadian, Hohhot, Baotou, Chaoyang, Jinzhou, Huludao
YRD	Shanghai, Nanjing, Wuxi, Xuzhou, Changzhou, Suzhou, Nantong, Lianyungang, Huai'an, Yancheng, Yangzhou, Zhenjiang, Taizhou, Suqian, Hangzhou, Ningbo, Jiaxing, Huzhou, Shaoxing, Zhoushan, Hefei, Wuhu, Bengbu, Huainan, Ma'anshan, Huaibei, Chuzhou, Fuyang, Suzhou, Lu'an, Bozhou
PRD	Guangzhou, Shenzhen, Zhuhai, Foshan, Jiangmen, Zhaoqing, Huizhou, Dongguan, Zhongshan
FWP	Lvliang, Jinzhong, Linfen, Yuncheng, Luoyang, Sanmenxia, Xi'an, Tongchuan, Baoji, Xianyang, Weinan
SCB	Chongqing, Chengdu, Zigong, Luzhou, Deyang, Mianyang, Suining, Neijiang, Leshan, Meishan, Yibin, Ya'an, Ziyang, Nanchong, Guang'an, Dazhou

Table S2: ERA5 meteorological variables and daily aggregation periods used in this study

Variable	Description	Averaging Period
T2M	2 meter temperature (K)	06:00-18:00
SSRD	Surface solar radiation downwards (J m^{-2})	06:00-18:00
TCC	Total cloud cover (dimensionless)	06:00-18:00
BLH	Boundary layer height (m)	00:00-12:00
SP	Surface pressure (Pa)	06:00-18:00
V10	10 meter wind v component (m s^{-1})	06:00-12:00
U10	10 meter wind u component (m s^{-1})	06:00-12:00
RH	Relative humidity (%)	06:00-18:00
TP	Total precipitation (m)	06:00-18:00 (sum)



15 Figure S1: Sensitivity of meteorologically normalized MDA8 O₃ concentrations to the number of predictions. Boxplots represent the results from 100 repeated meteorological-normalization calculations for site 1001A in Beijing on 1 July 2021, with the number of predictions varying from 10 to 5000.

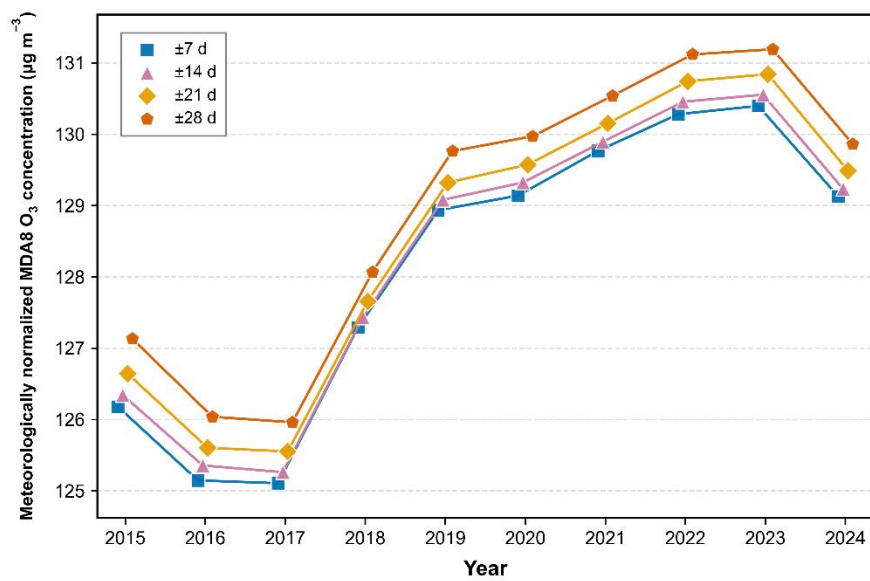


Figure S2: Sensitivity of meteorologically normalized MDA8 O₃ concentrations to the sliding-window width. Coloured markers represent the meteorologically normalized concentrations obtained using ±7, ±14, ±21, and ±28 d sampling windows.

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