

1 **1 SUPPLEMENTARY INFORMATION**

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Site name	Site abbreviation (eng)	Longitude	Latitude
东四	DS	116.417	39.929
天坛	TT	116.407	39.886
官园	GY	116.339	39.929
万寿西宫	WSXG	116.352	39.878
奥体中心	ATZX	116.397	39.982
农展馆	NZG	116.461	39.937
万柳	WL	116.287	39.987
古城	GC	116.184	39.914
顺义	SY	116.655	40.127
昌平	CP	116.23	40.217
怀柔	HR	116.628	40.328
定陵	DL	116.22	40.292

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4 **Table S1:** List of the 12 MEP (Ministry of Environmental Protection) sites in the Beijing  
5 metropolitan area, their abbreviations in English, and their geographic locations.

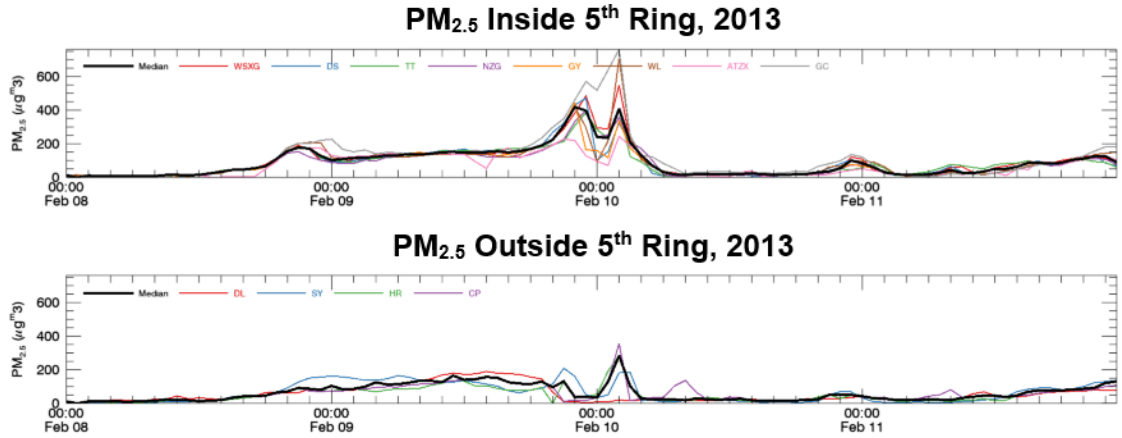
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8 Figures S1-S12 show PM<sub>2.5</sub> inside and outside of the 5<sup>th</sup> Ring road, which was the  
9 firework/firecracker prohibition area beginning in 2018 (Liu et al. 2019), and a comparison  
10 between the two in each respective year. From these figures, we can infer that there is more  
11 pollution inside this area than outside up through 2018. This can be expected because the  
12 population is much denser closer to the center of the city. In 2019, however, there was less  
13 PM<sub>2.5</sub> pollution inside this area than outside, which is presumably because of the prohibition.  
14 2017 is not included in this set of figures because data was missing after the CNY midnight  
15 during that year, for an unknown reason. 2017 is omitted from these figures because data after  
16 00:00 is missing, for an unknown reason.

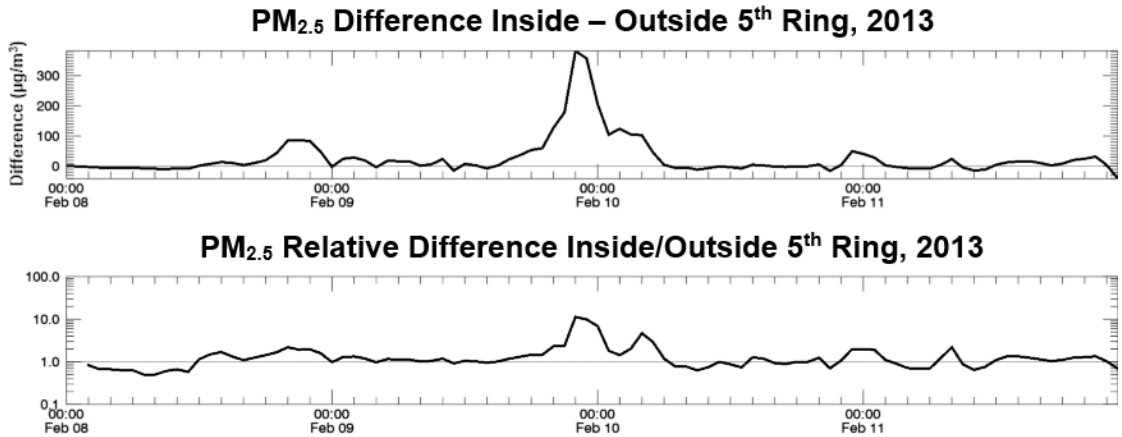
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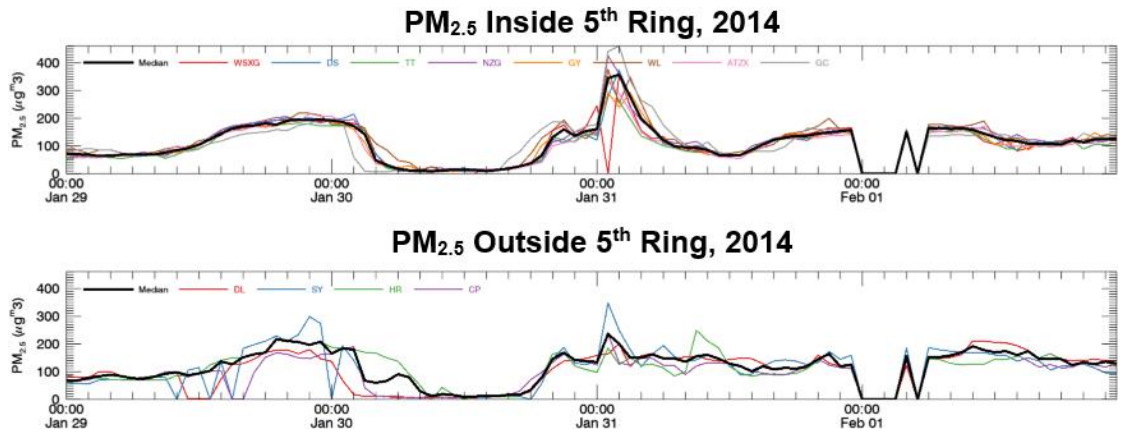
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20 **Figure S1:** Timeseries of PM<sub>2.5</sub> measured at the 12 MEP stations 48 hours before through 48  
21 hours after the CNY in 2013, inside the 5<sup>th</sup> Ring Road (top) and outside (bottom).  
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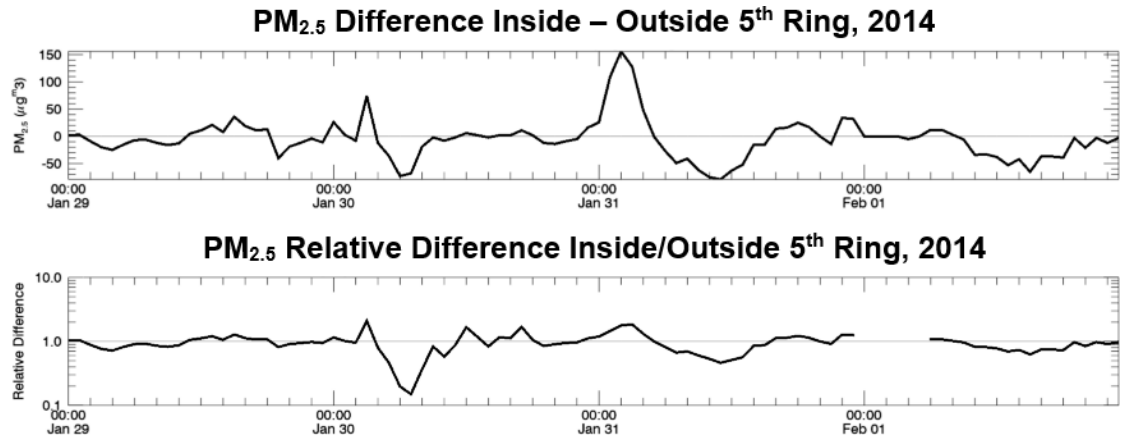
25 **Figure S2:** Timeseries of the PM<sub>2.5</sub> differences between the average of 8 MEP sites inside the  
26 5<sup>th</sup> Ring Road and the average of the 4 stations outside the 5<sup>th</sup> Ring Road (top), and the  
27 respective relative differences (bottom), 48 hours before through 48 hours after the 2013  
28 CNY.  
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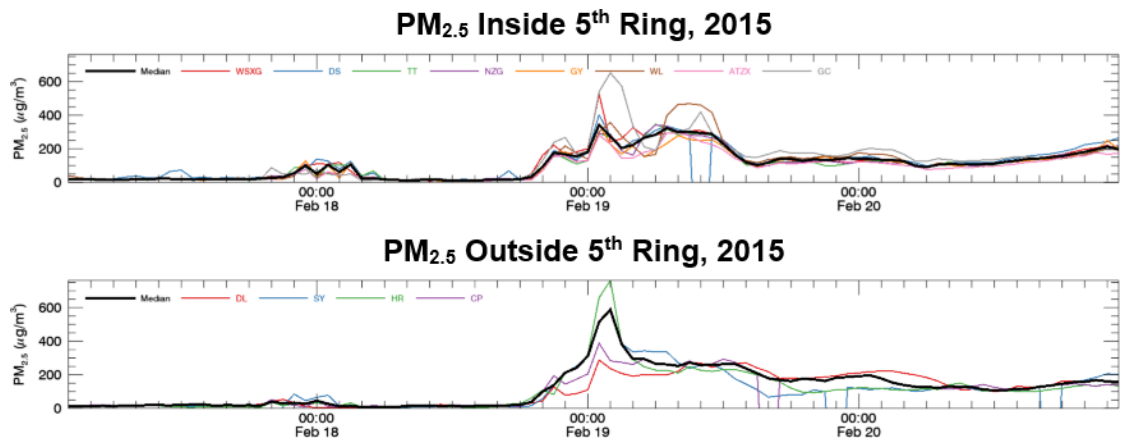
32 **Figure S3:** Timeseries of PM<sub>2.5</sub> measured at the 12 MEP stations 48 hours before through 48  
33 hours after the CNY in 2014, inside the 5<sup>th</sup> Ring Road (top) and outside (bottom).

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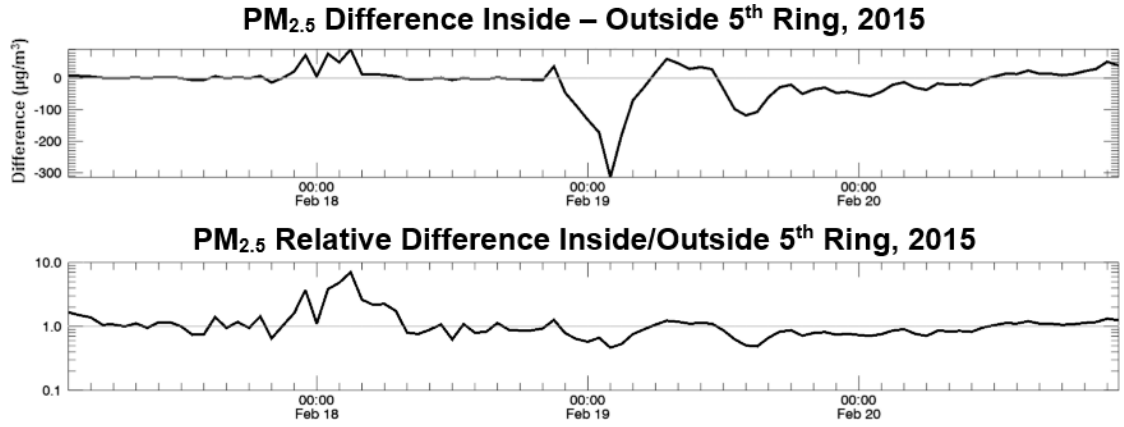
**Figure S4:** Timeseries of the PM<sub>2.5</sub> differences between the average of 8 MEP sites inside the 5<sup>th</sup> Ring Road and the average of the 4 stations outside the 5<sup>th</sup> Ring Road (top), and the respective relative differences (bottom), 48 hours before through 48 hours after the 2013 CNY.



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**Figure S5:** Timeseries of PM<sub>2.5</sub> measured at the 12 MEP stations 48 hours before through 48 hours after the CNY in 2015, inside the 5<sup>th</sup> Ring Road (top) and outside (bottom).

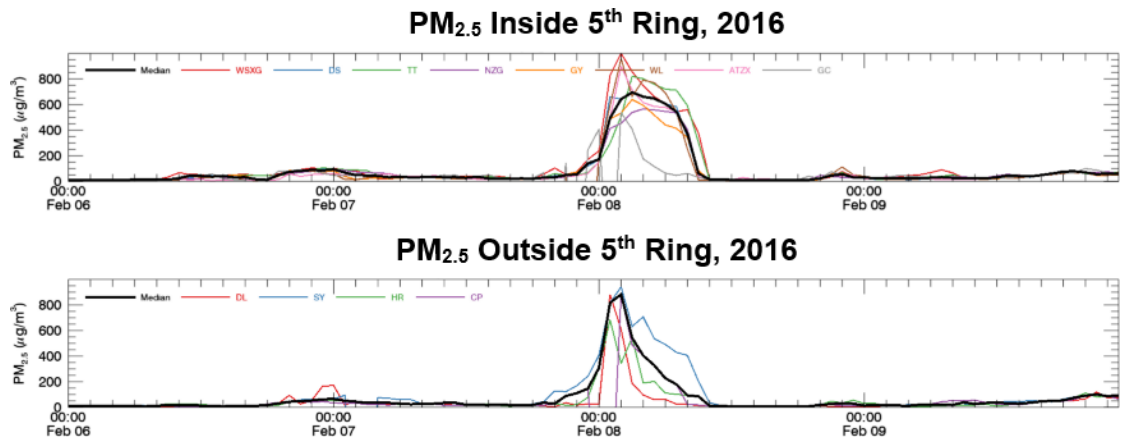
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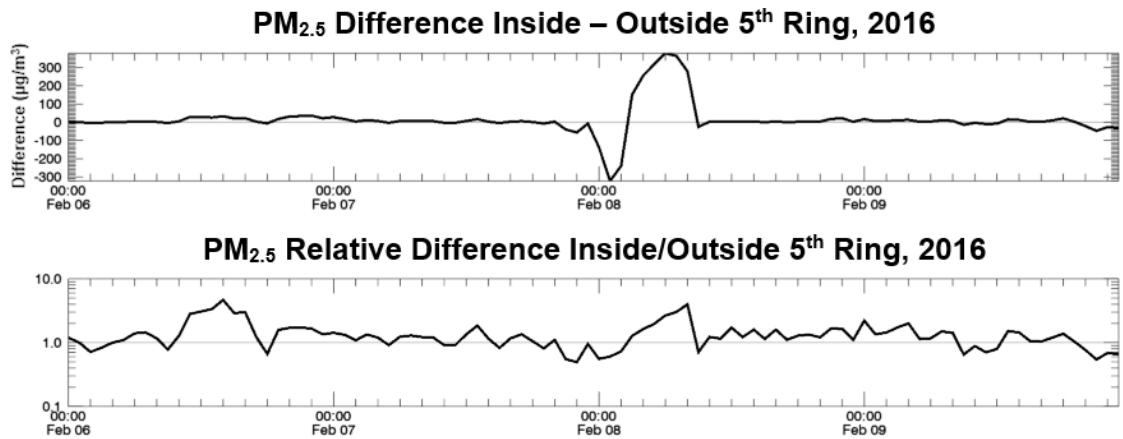
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51 **Figure S6:** Timeseries of the PM<sub>2.5</sub> differences between the average of 8 MEP sites inside the  
52 5<sup>th</sup> Ring Road and the average of the 4 stations outside the 5<sup>th</sup> Ring Road (top), and the  
53 respective relative differences (bottom), 48 hours before through 48 hours after the 2015  
54 CNY.  
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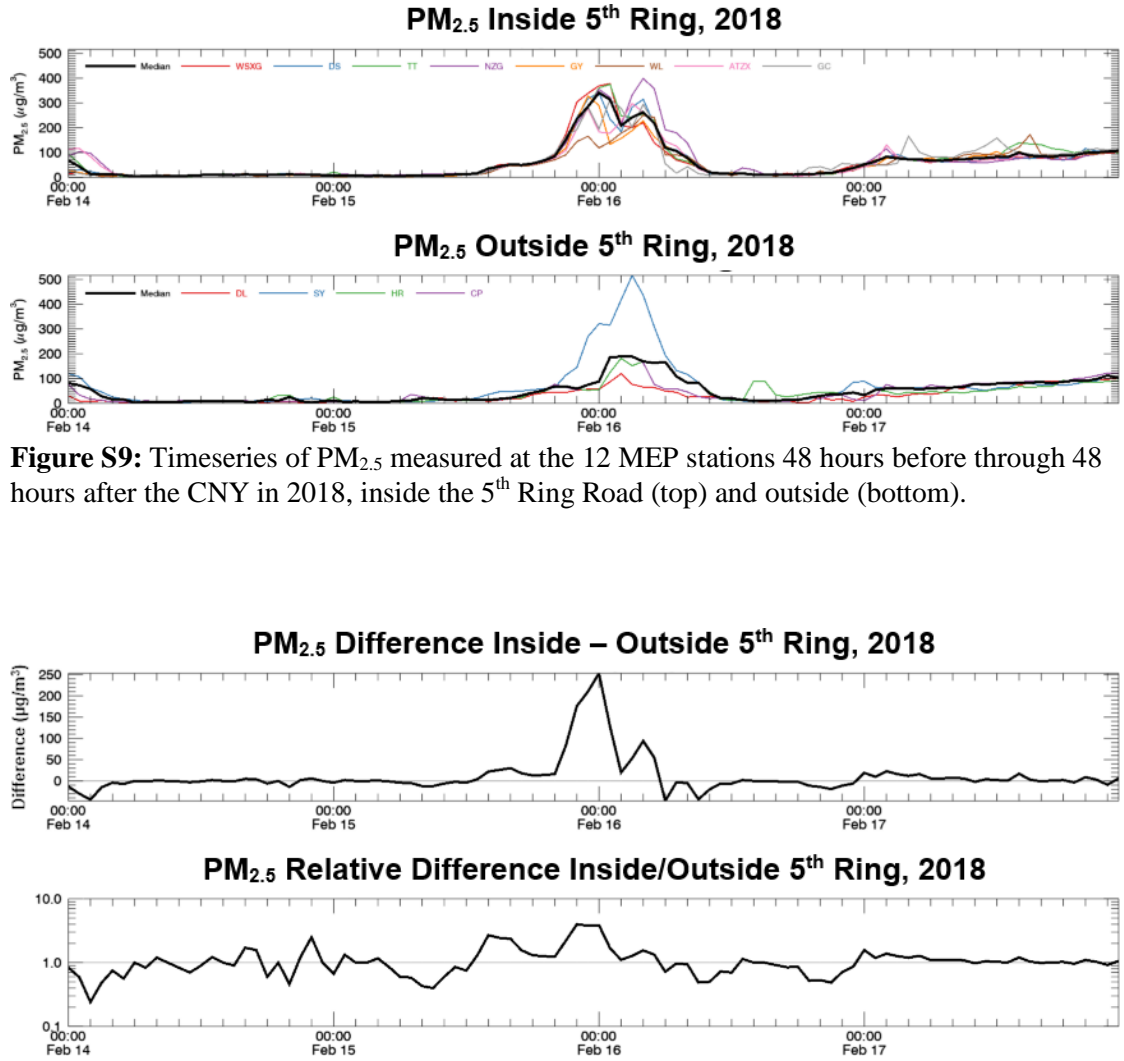
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59 **Figure S7:** Timeseries of  $PM_{2.5}$  measured at the 12 MEP stations 48 hours before through 48  
60 hours after the CNY in 2016, inside the 5<sup>th</sup> Ring Road (top) and outside (bottom).  
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64 **Figure S8:** Timeseries of the  $PM_{2.5}$  differences between the average of 8 MEP sites inside the  
65 5<sup>th</sup> Ring Road and the average of the 4 stations outside the 5<sup>th</sup> Ring Road (top), and the  
66 respective relative differences (bottom), 48 hours before through 48 hours after the 2016  
67 CNY.  
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**Figure S9:** Timeseries of PM<sub>2.5</sub> measured at the 12 MEP stations 48 hours before through 48 hours after the CNY in 2018, inside the 5<sup>th</sup> Ring Road (top) and outside (bottom).

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**Figure S10:** Timeseries of the PM<sub>2.5</sub> differences between the average of 8 MEP sites inside the 5<sup>th</sup> Ring Road and the average of the 4 stations outside the 5<sup>th</sup> Ring Road (top), and the respective relative differences (bottom), 48 hours before through 48 hours after the 2018 CNY.

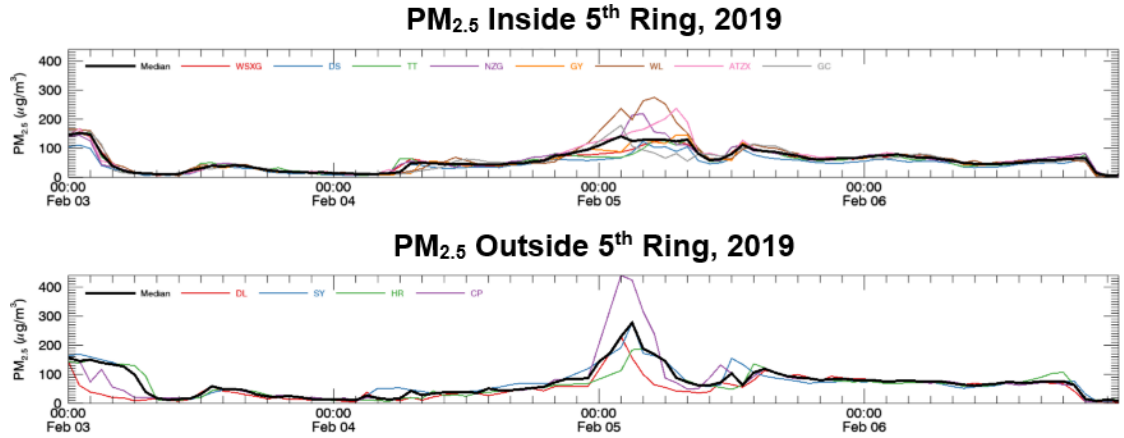
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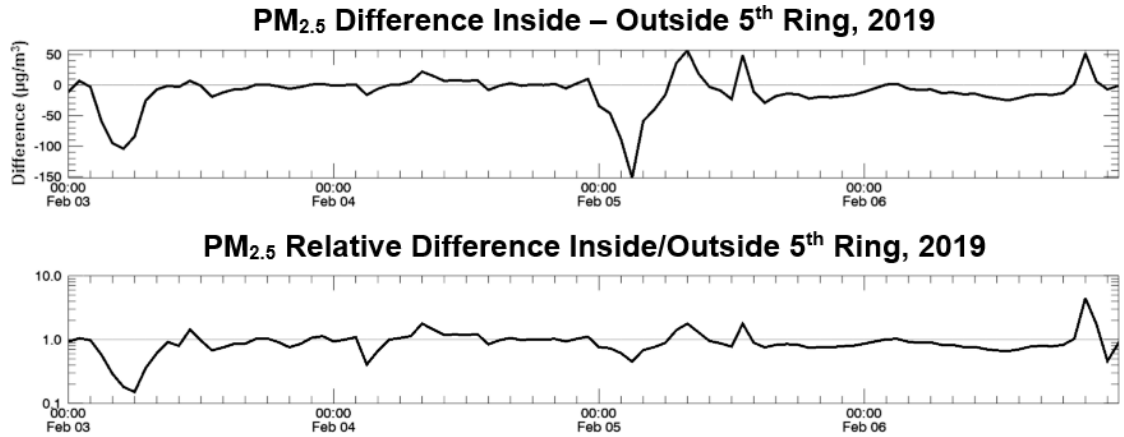
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84 **Figure S11:** Timeseries of  $PM_{2.5}$  measured at the 12 MEP stations 48 hours before through 48  
85 hours after the CNY in 2019, inside the 5<sup>th</sup> Ring Road (top) and outside (bottom).  
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90 **Figure S12:** Timeseries of the  $PM_{2.5}$  differences between the average of 8 MEP sites inside  
91 the 5<sup>th</sup> Ring Road and the average of the 4 stations outside the 5<sup>th</sup> Ring Road (top), and the  
92 respective relative differences (bottom), 48 hours before through 48 hours after the 2019  
93 CNY.