

# **Supplement: Space borne tropospheric nitrogen dioxide (NO<sub>2</sub>) observations from 2005-2020 over the Yangtze River Delta (YRD), China: variabilities, implications, and drivers**

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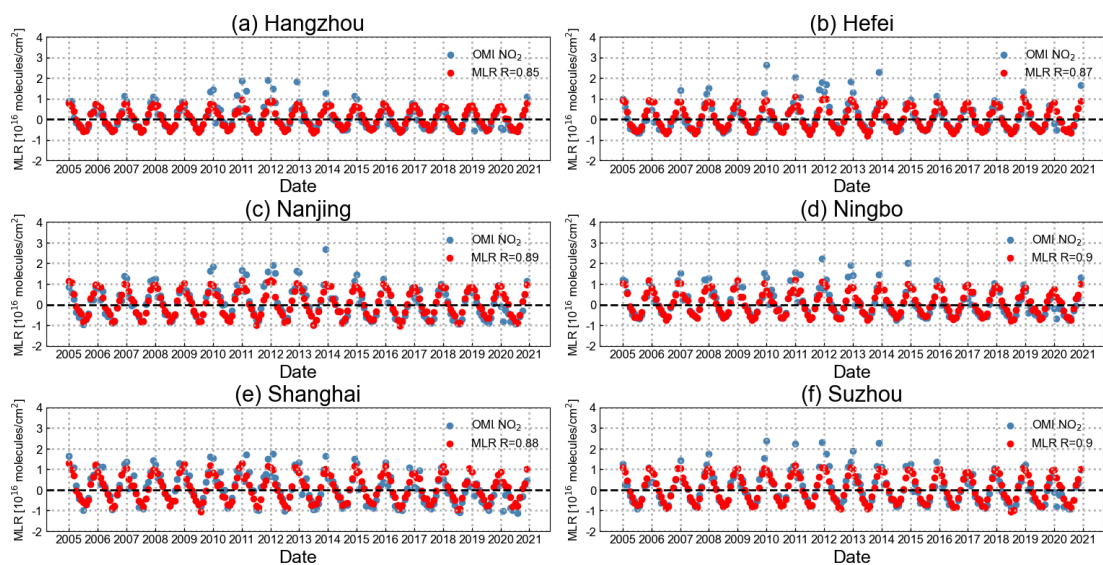
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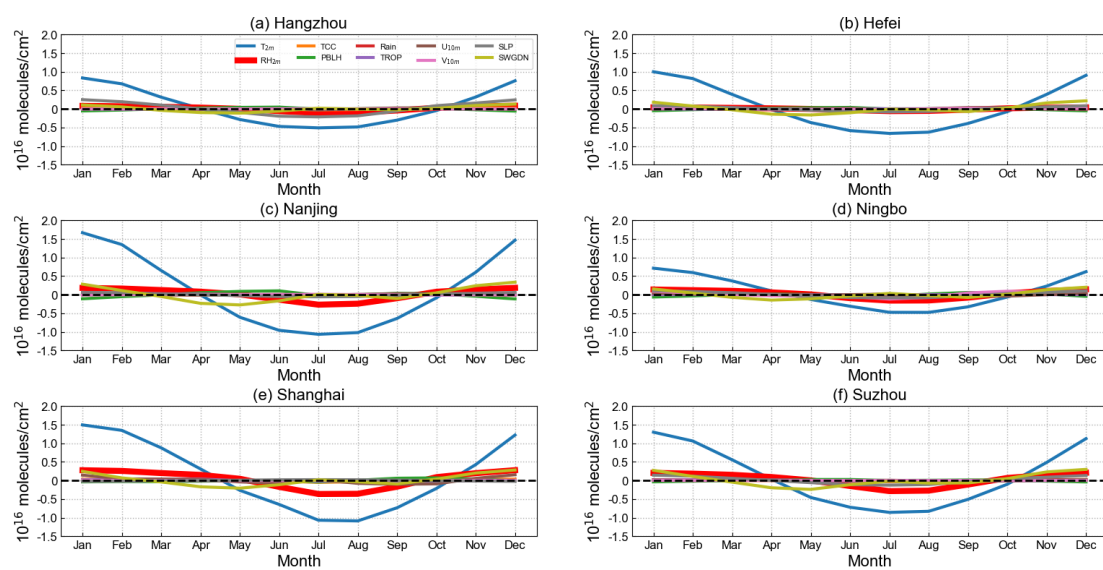
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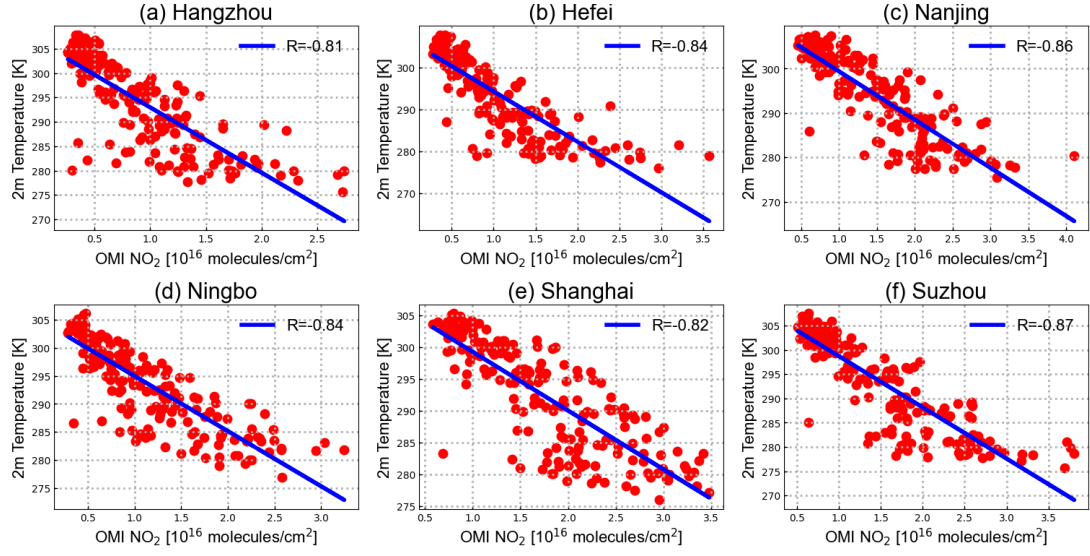
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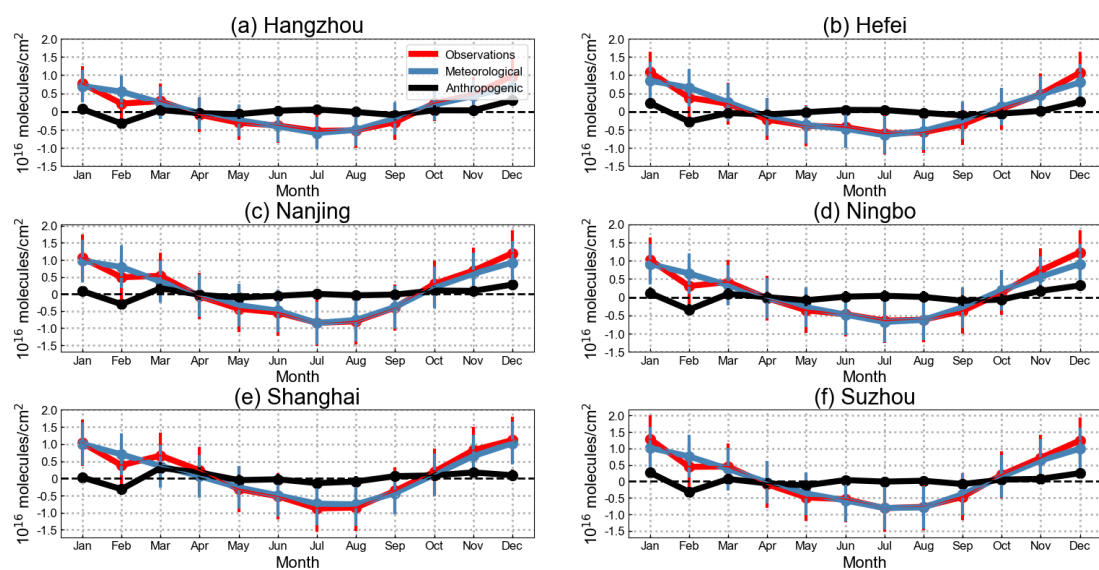
**Figure S1.** The comparisons of time series of monthly averaged OMI tropospheric NO<sub>2</sub> VCDs (blue dots) and the MLR model (red dots) from 2005 to 2020 over the 6 megacities within the YRD.



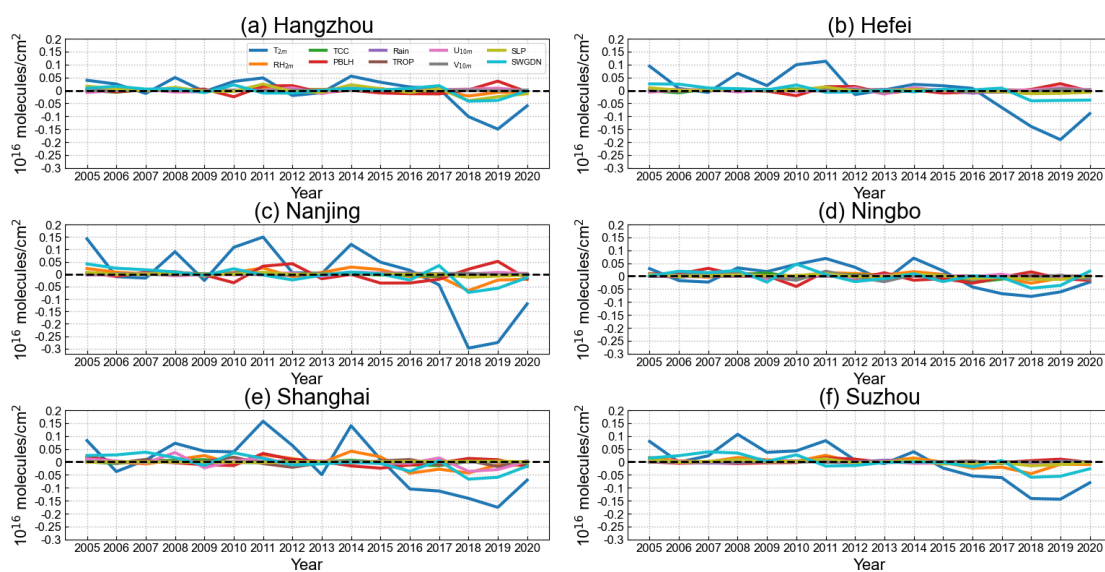
**Figure S2.** The contributions of each meteorological parameter to the month variations of tropospheric NO<sub>2</sub> VCDs over each YRD city.



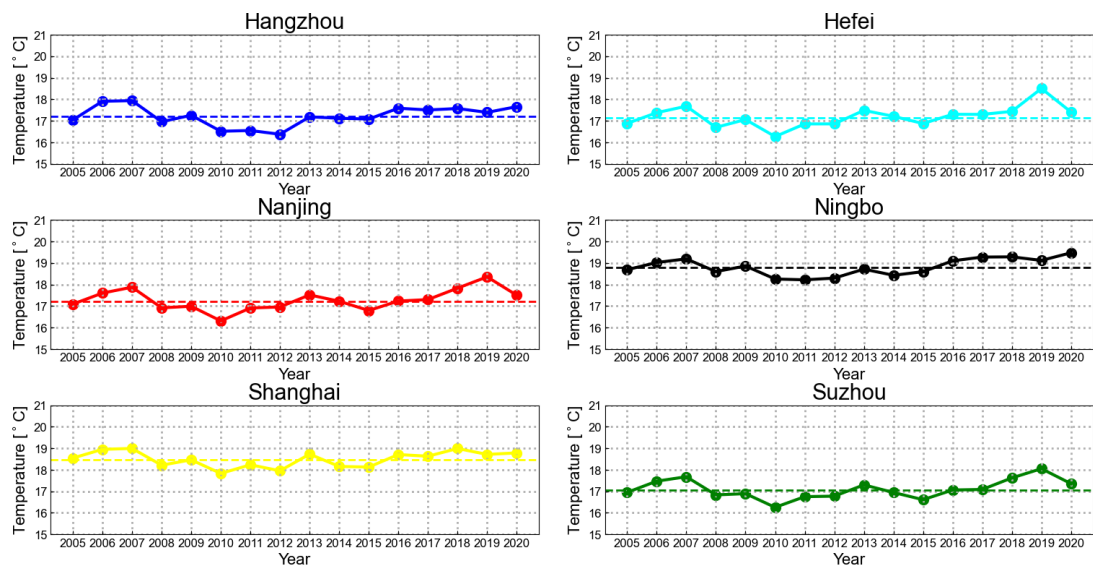
**Figure S3.** The correlations between monthly average of temperature and tropospheric NO<sub>2</sub> VCDs.



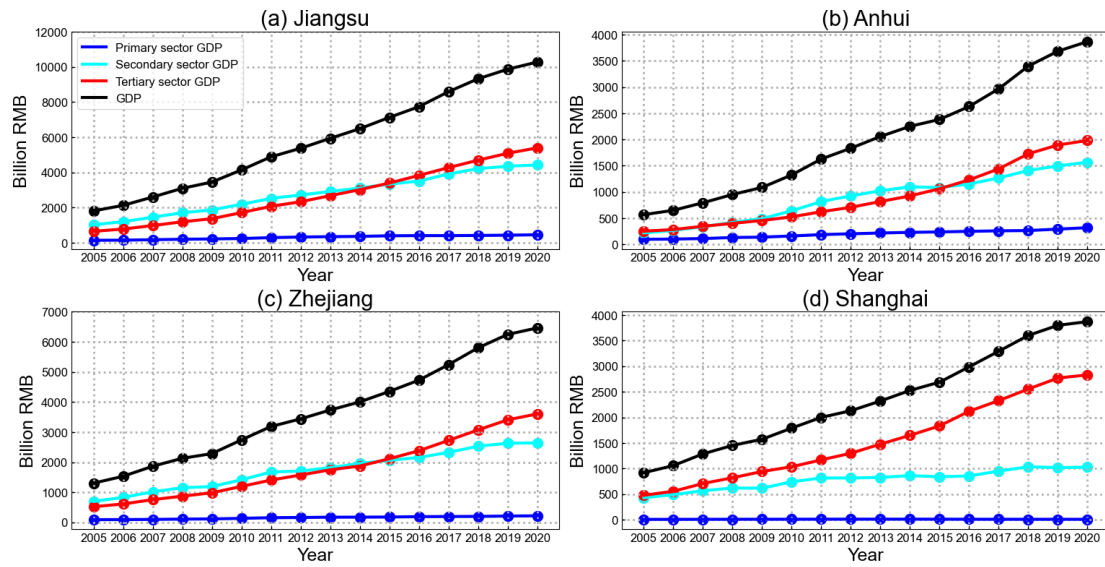
**Figure S4.** The monthly average of tropospheric NO<sub>2</sub> VCDs and its effect by only meteorological drivers and related anthropogenic drivers in main cities over YRD during 2005-2019.



**Figure S5.** The contributions of each meteorological parameter to the annual variations of tropospheric NO<sub>2</sub> VCDs over each YRD city.



**Figure S6.** The annual average of surface temperature in main cities over YRD during 2005-2020.



**Figure S7.** The value of GDP for total (black dots and lines), primary sector (blue dots and lines), secondary sector (cyan dots and lines) and tertiary sector (red dots and lines), in Jiangsu Province from 2006 to 2020, Anhui Province, Zhejiang Province and Shanghai city, respectively.