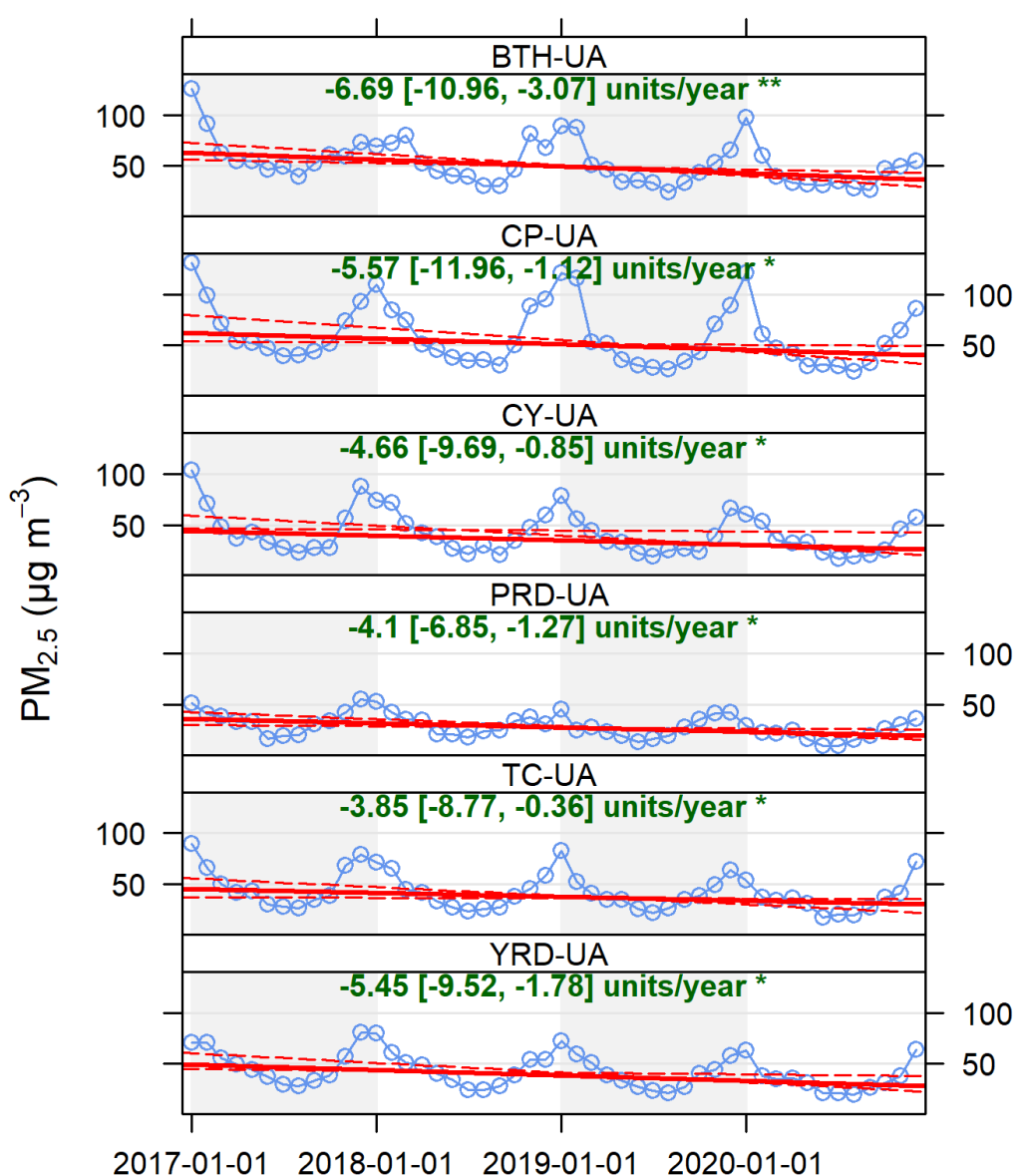
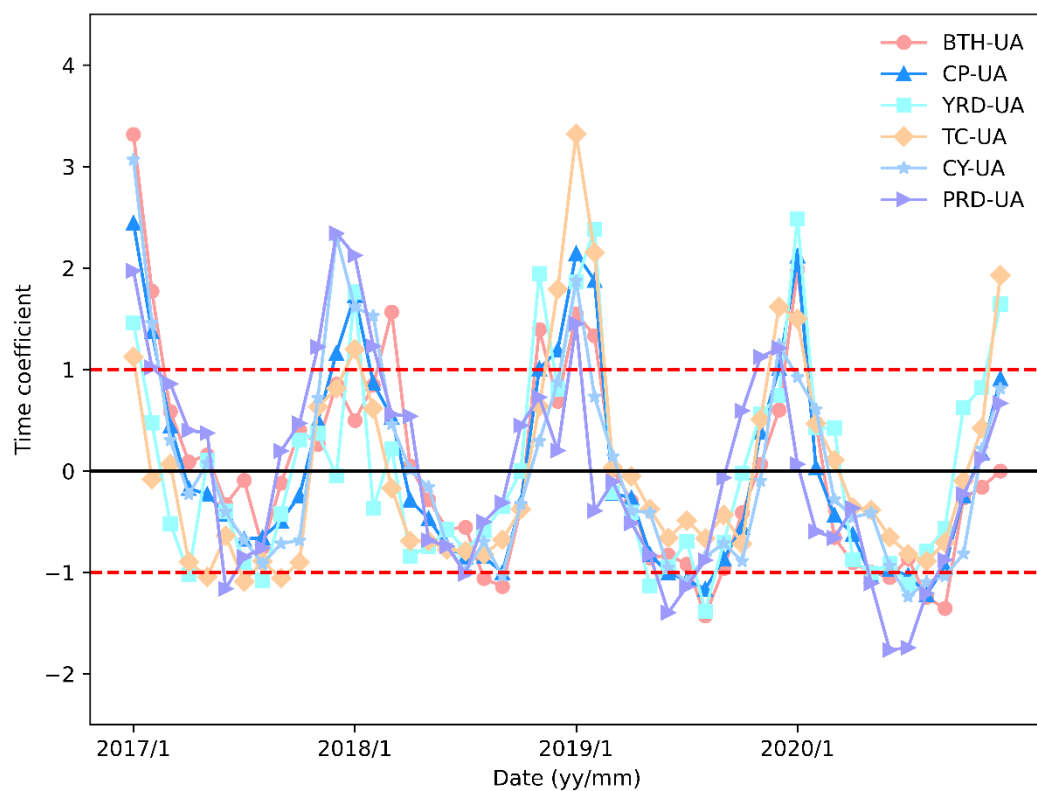


# Supplementary Materials: PM<sub>2.5</sub> Pollution in Six Major Chinese Urban Agglomerations: Spatiotemporal Variations, Health Impacts, and the Relationships with Meteorological Conditions

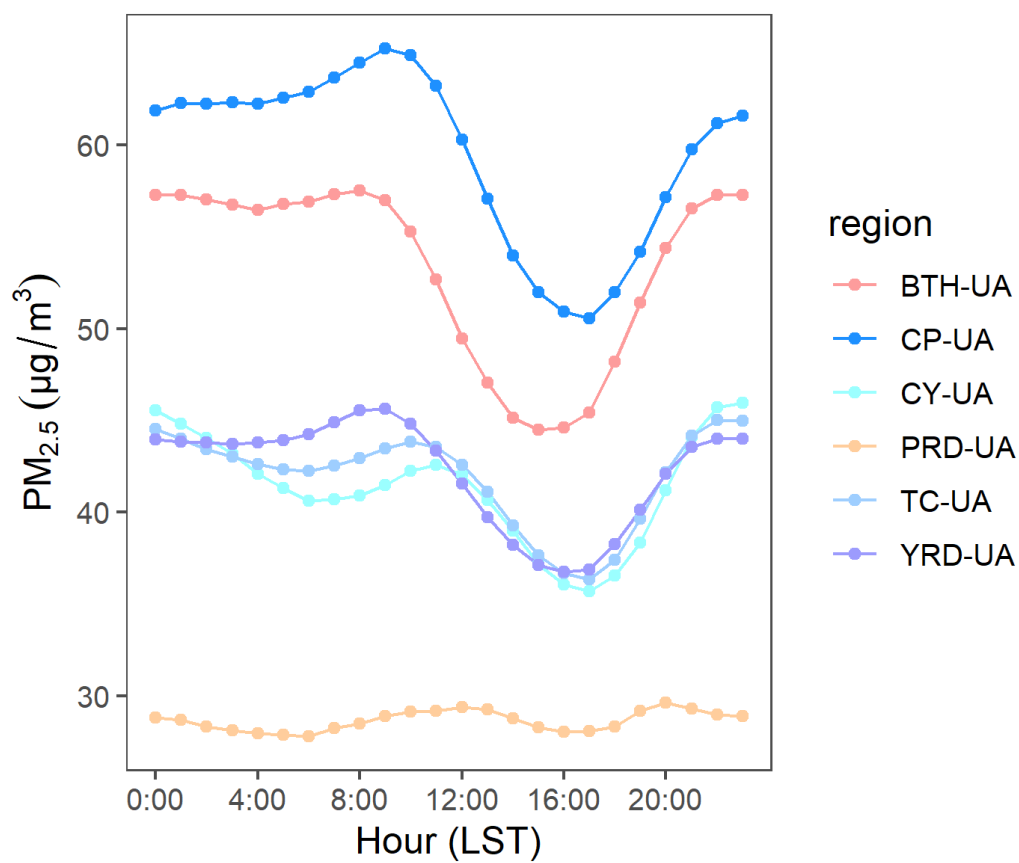
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**Figure S1.** The variation trend of PM<sub>2.5</sub> in six regions by using Theil-Sen estimates from 2017 to 2020. Beijing-Tianjin-Hebei urban agglomeration (BTH-UA), Central Plains urban agglomeration (CP-UA), Yangtze River Delta urban agglomeration (YRD-UA), Triangle of Central China urban agglomeration (TC-UA), Chengdu-Chongqing urban agglomeration (CY-UA), and Pearl River Delta urban agglomeration (PRD-UA).



**Figure S2.** PM<sub>2.5</sub> time coefficients decomposed by empirical orthogonal function in six urban agglomerations from 2017 to 2020.



**Figure S3.** Diurnal variations of PM<sub>2.5</sub> concentrations in six urban agglomerations from 2017 to 2020.

**Table S1.** Parameters of standard deviation ellipse of yearly mean concentrations of PM<sub>2.5</sub> in six urban agglomerations from 2017 to 2020.

Region	Parameters	Year			
		2017	2018	2019	2020
BTH-UA	azimuth/degree	48.53	48.55	49.19	49.11
	mean center	116.09°E, 38.71°N	116.12°E, 38.76°N	116.15°E, 38.75°N	116.17°E, 38.77°N
	major axes/km	243.2	244.6	248.6	246.5
	minor axes/km	109.8	111.8	110.5	110.9
	area/km <sup>2</sup>	83859	85917	86278	85901
CP-UA	azimuth/degree	76.13	76.06	74.94	75.08
	mean center	113.78°E, 34.71°N	113.79°E, 34.66°N	113.78°E, 34.67°N	113.80°E, 34.69°N
	major axes/km	183.9	182.2	184.4	184.2
	minor axes/km	164.4	165.0	163.2	162.9
	area/km <sup>2</sup>	94962	94452	94559	94257
YRD-UA	azimuth/degree	136.88	136.38	136.17	135.96
	mean center	118.65°E, 31.76°N	118.70°E, 31.81°N	118.69°E, 31.79°N	118.66°E, 31.84°N
	major axes/km	290.3	285.7	285.8	288.6
	minor axes/km	171.2	170.4	171.2	171.6
	area/km <sup>2</sup>	156127	152915	153705	155544
TC-UA	azimuth/degree	98.45	98.31	96.13	95.94
	mean center	114.06°E, 29.00°N	113.99°E, 29.01°N	113.93°E, 29.00°N	113.96°E, 29.00°N
	major axes/km	243.1	242.1	242.7	243.2

	minor axes/km	205.2	205.8	204.4	205.1
	area/km <sup>2</sup>	156662	156527	155867	156662
CY-UA	azimuth/degree	62.28	63.17	64.16	63.22
	mean center	104.93°E, 30.14°N	104.88°E, 30.14°N	104.88°E, 30.11°N	104.86°E, 30.10°N
	major axes/km	176.2	179.2	176.4	172.7
	minor axes/km	129.8	129.2	130.4	131.7
	area/km <sup>2</sup>	71838	72740	72287	71436
	azimuth/degree	93.08	93.83	93.11	91.97
PRD-UA	mean center	113.33°E, 22.88°N	113.34°E, 22.89°N	113.36°E, 22.89°N	113.37°E, 22.89°N
	major axes/km	98.9	99.5	99.1	99.4
	minor axes/km	71.0	70.8	70.5	70.6
	area/km <sup>2</sup>	22073	22116	21964	22039