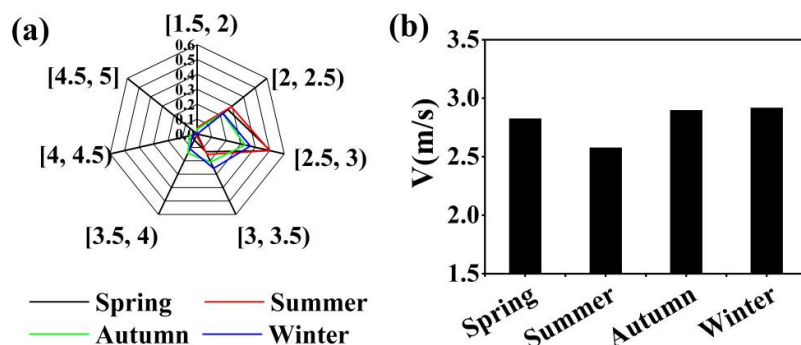
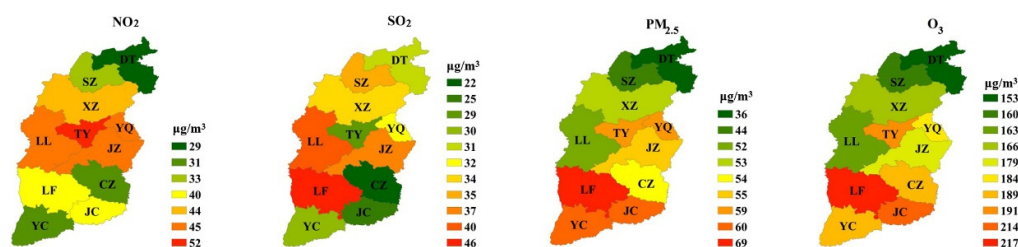


# Supplementary Materials:

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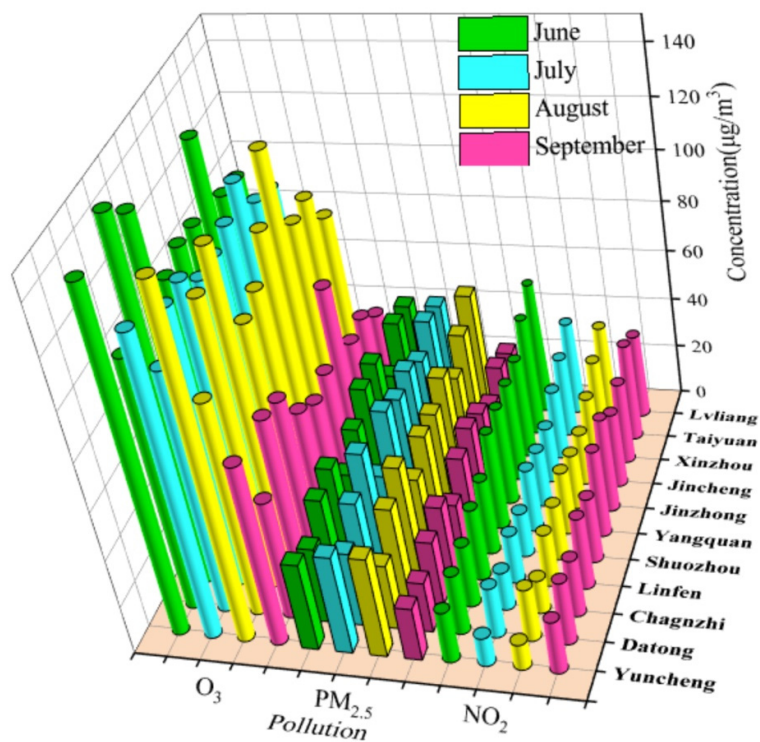
**Figure S1.** Annual wind speed chart of Lvliang City in 2018. (a) shows the frequency distribution of wind speed in four seasons, (b) shows the average wind speed in different seasons.



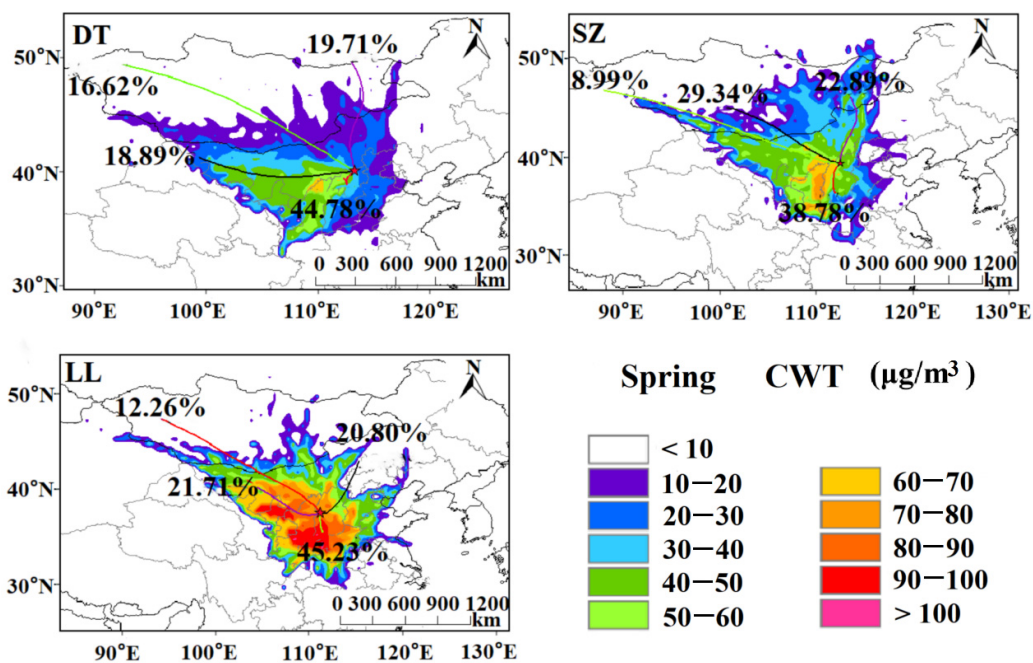
**Figure S2.** The spatial distribution of the annual average concentrations of  $NO_2$ ,  $SO_2$ ,  $PM_{2.5}$  and  $O_3$  in Shanxi province. The data are from Shanxi Statistical Yearbook-2018 [1].

Reference:

[1] Shanxi Statistical Yearbook-2018. Available from: <http://tjj.shanxi.gov.cn/tjsj/tjnj/nj2018/indexch.htm> (accessed on 2019).



**Figure S3.** The monthly average concentrations of  $\text{NO}_2$ ,  $\text{PM}_{2.5}$  and  $\text{O}_3$  in different cities in the high-incidence months (June, July, August and September) of  $\text{O}_3$  pollution.



**Figure S4.** CWT maps for  $\text{NO}_2$  by mass concentration ( $\mu\text{g}/\text{m}^3$ ) in spring in the cities without over-standard days.

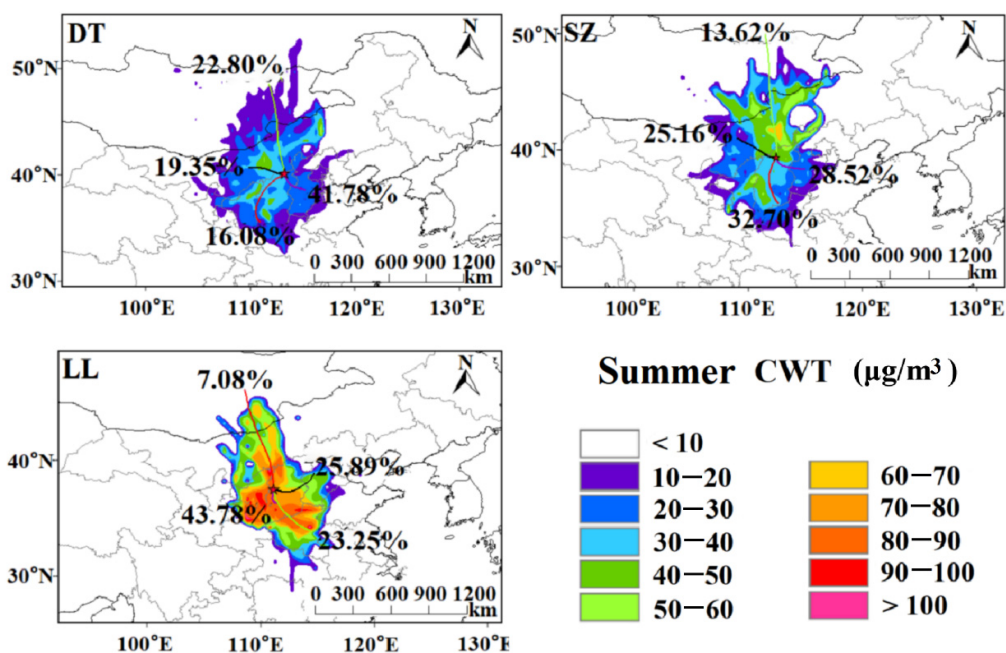


Figure S5. CWT maps for  $\text{NO}_2$  by mass concentration ( $\mu\text{g}/\text{m}^3$ ) in summer in the cities without over-standard days.

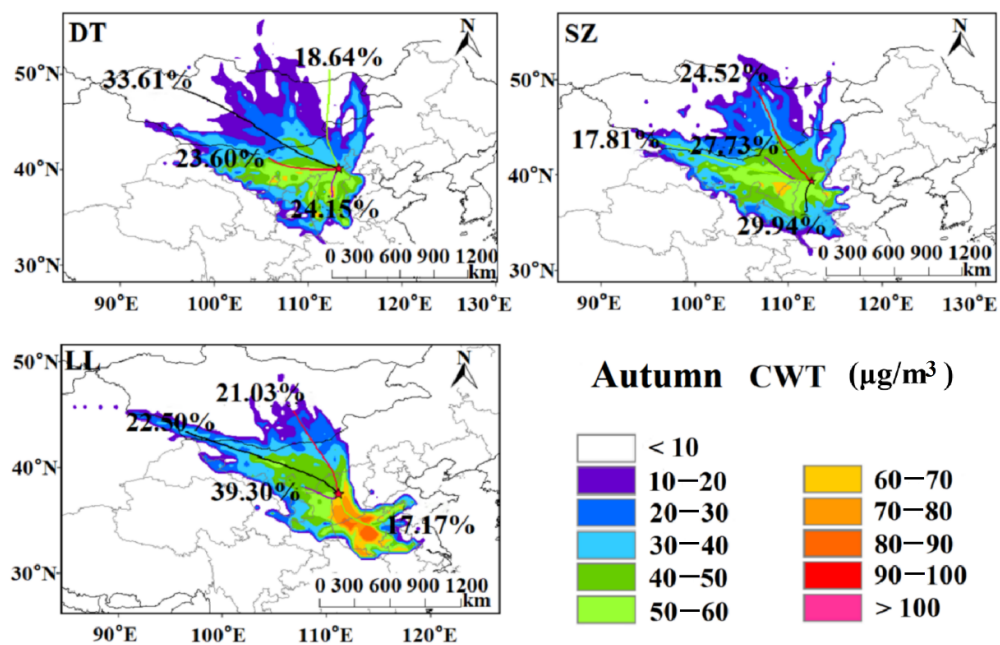
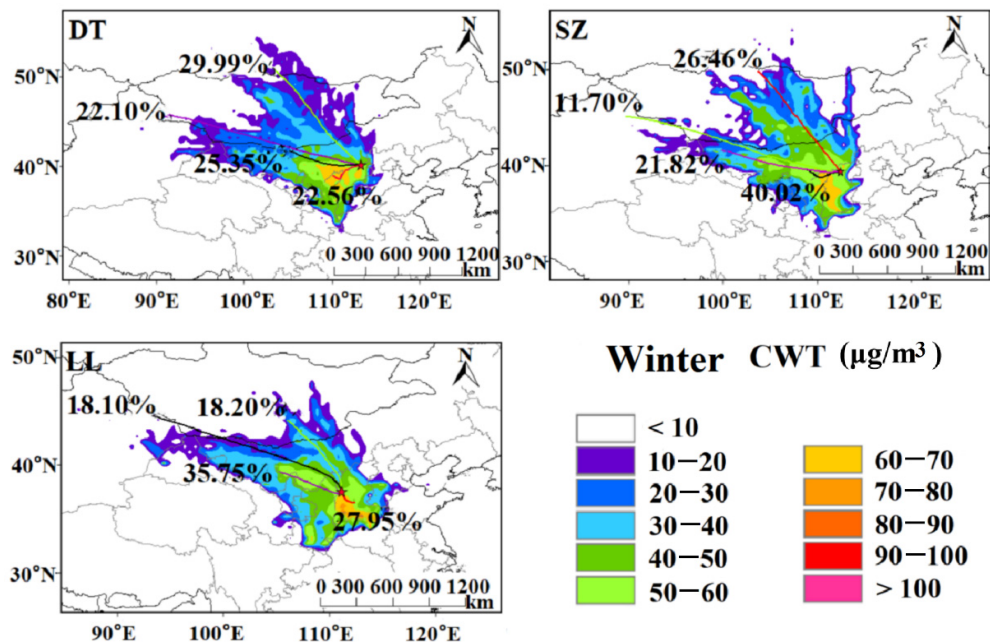


Figure S6. CWT maps for  $\text{NO}_2$  by mass concentration ( $\mu\text{g}/\text{m}^3$ ) in autumn in the cities without over-standard days.



**Figure S7.** CWT maps for NO<sub>2</sub> by mass concentration ( $\mu\text{g}/\text{m}^3$ ) in winter in the cities without over-standard days.

**Table S1.** Summary of meteorological parameters in the prefectural cities in Shanxi.-: No data.

City	WS (m/s)				Precipitation (mm)				T (°C)			
	Spring	Summer	Autumn	Winter	Spring	Summer	Autumn	Winter	Spring	Summer	Autumn	Winter
TY	2.93	2.34	2.01	2.14	54.90	247.20	59.20	1.30	14.80	24.51	10.94	-2.92
DT	2.94	2.09	2.41	2.27	111.60	253.90	85.10	6.40	11.52	22.46	6.56	-9.14
CZ	3.82	2.92	3.01	2.85	-	-	-	-	-	-	-	-
LF	1.69	1.57	1.29	1.33	-	-	-	-	-	-	-	-
YQ	2.37	1.77	1.98	2.00	-	-	-	-	-	-	-	-
JC	2.33	2.17	2.11	1.84	202.20	245.90	100.90	23.60	15.09	25.71	13.60	-0.59
SZ	1.93	1.43	1.55	1.58	-	-	-	-	-	-	-	-
JZ	2.93	2.34	2.01	2.14	54.90	247.20	59.20	1.30	14.80	24.51	10.94	-2.92
YC	2.60	2.48	2.10	2.08	109.40	136.40	109.90	12.60	17.37	28.19	14.66	1.02
XZ	2.47	2.03	2.23	2.00	85.80	403.40	45.20	2.40	14.11	24.05	10.22	-4.13
LL	2.83	2.58	2.90	2.92	122.90	301.90	67.30	5.70	14.64	24.21	10.28	-3.65

Reference:

1. Shanxi Statistical Yearbook—2018. Available online: <http://tjj.shanxi.gov.cn/tjsj/tjnj/nj2018/indexch.htm> (accessed on 8 November 2021).