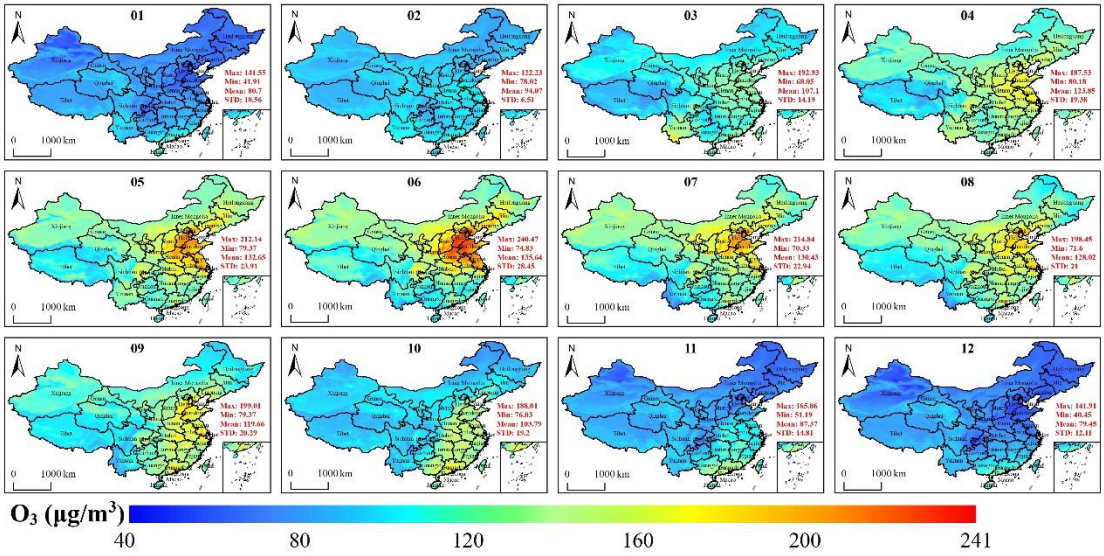


Supplementary Materials

Time-Series Modeling of Ozone Concentrations Constrained by Residual Variance in China from 2005 to 2020

Shoutao Zhu [1], Bin Zou [1], Xinyu Huang [1], Ning Liu [1,2] and Shenxin Li [1,*]

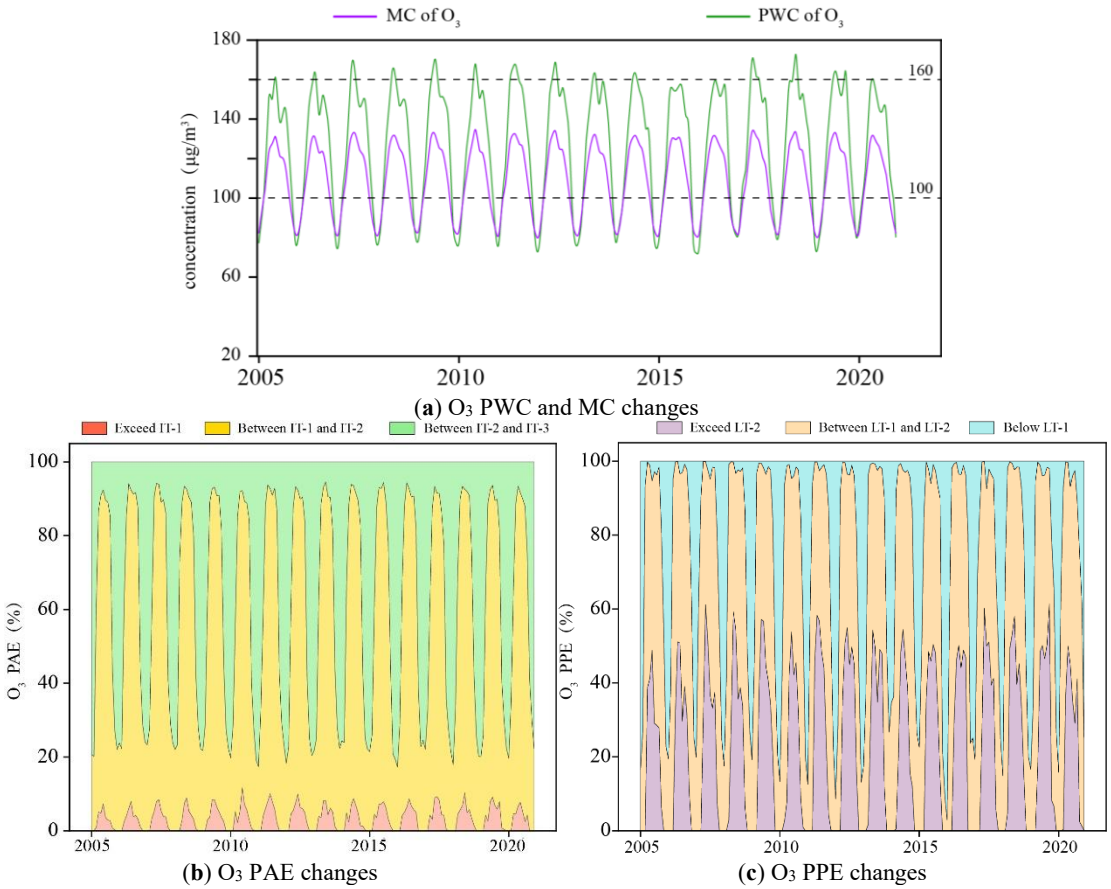
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Supplementary Figures



(**a**) O_3 PWC and MC changes

(**b**) O_3 PAE changes

(**c**) O_3 PPE changes

Figure S1 Monthly scale time series changes of PWC, MC, PAE and PPE.

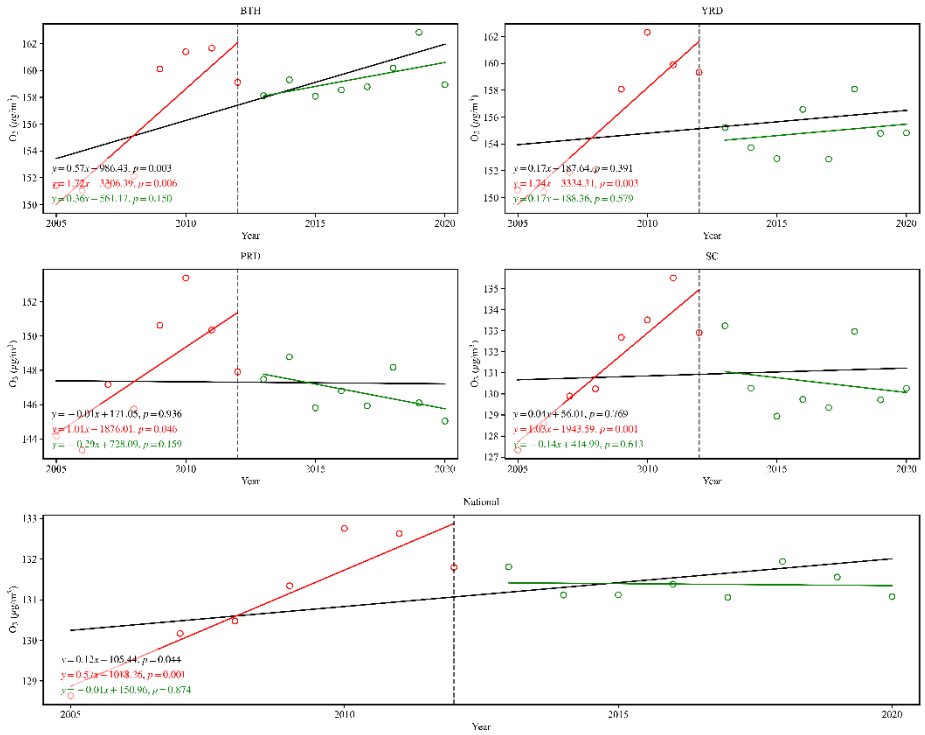


Figure S2 Annual mean ozone concentration time series and linear fitting of China and the four major urban agglomerations (black: fitting from 2005 to 2020 and formula, red: fitting from 2005 to 2012 and formula, green: fitting from 2013 to 2020 and formula)

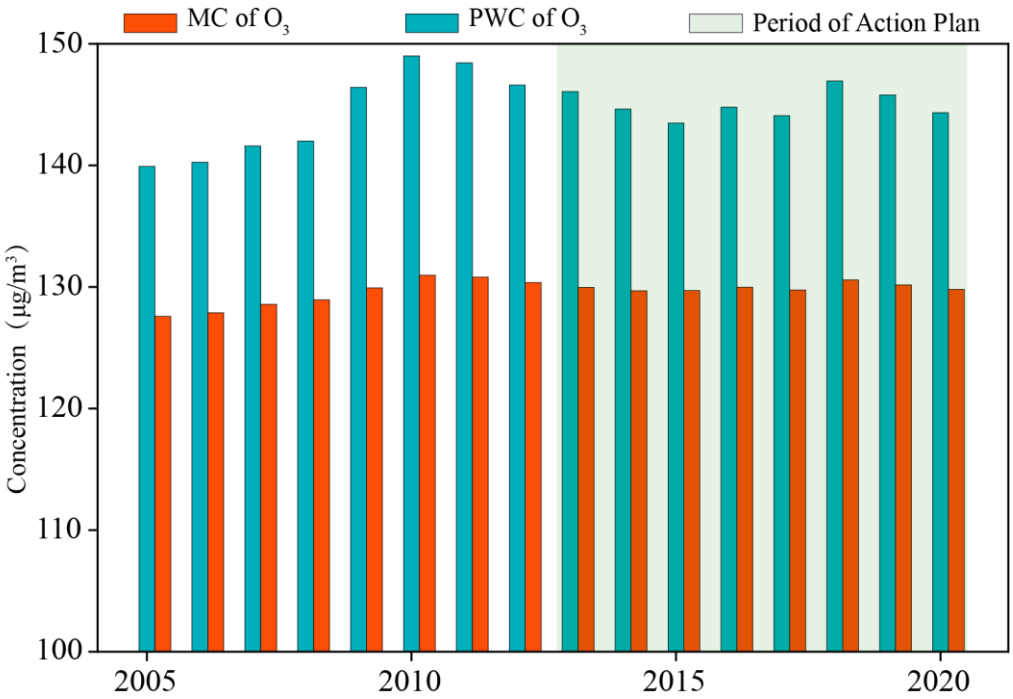


Figure S3 Annual variation of O_3 MC and PWC.

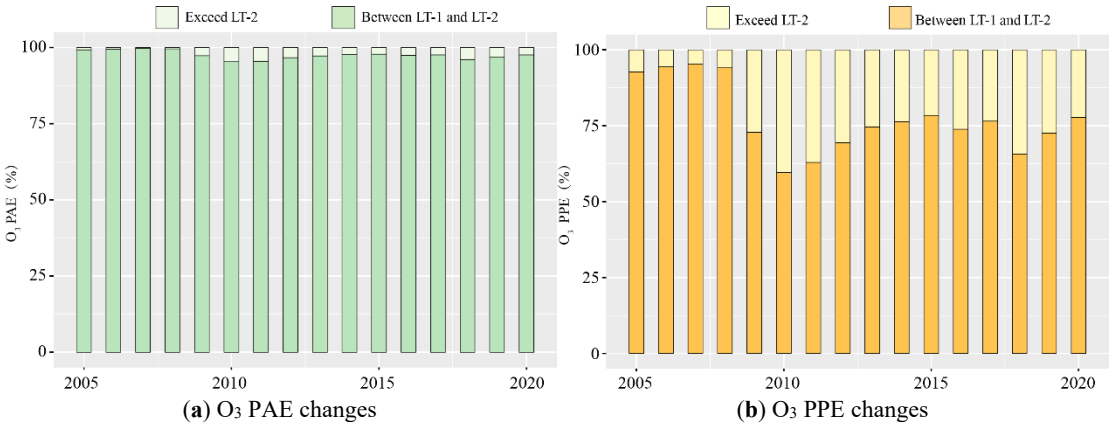


Figure S4 Annual variation of O_3 PAE and PPE.

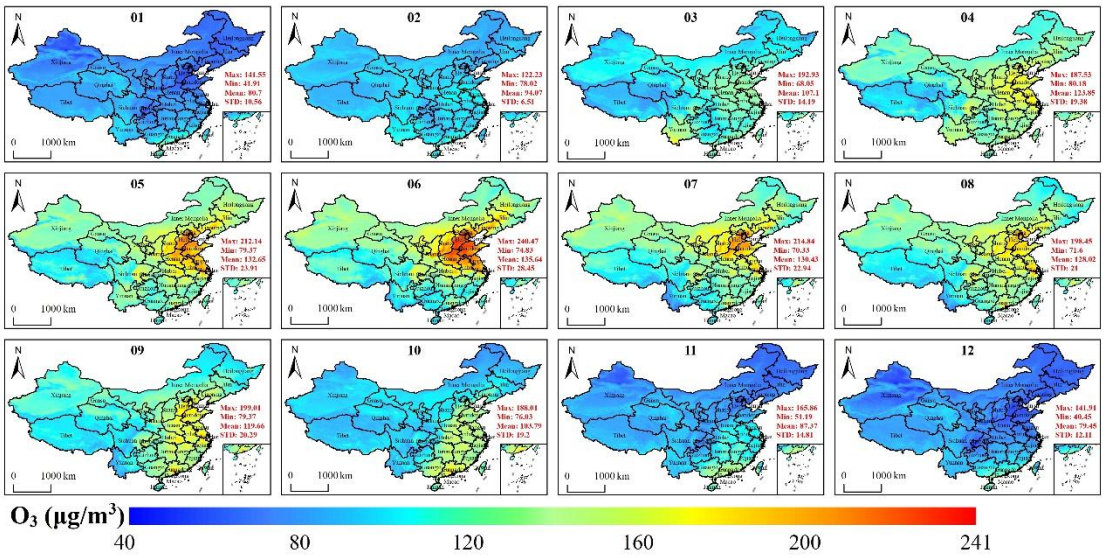


Figure S5 Spatial distribution of the mean ozone concentration in China from 2005 to 2020.

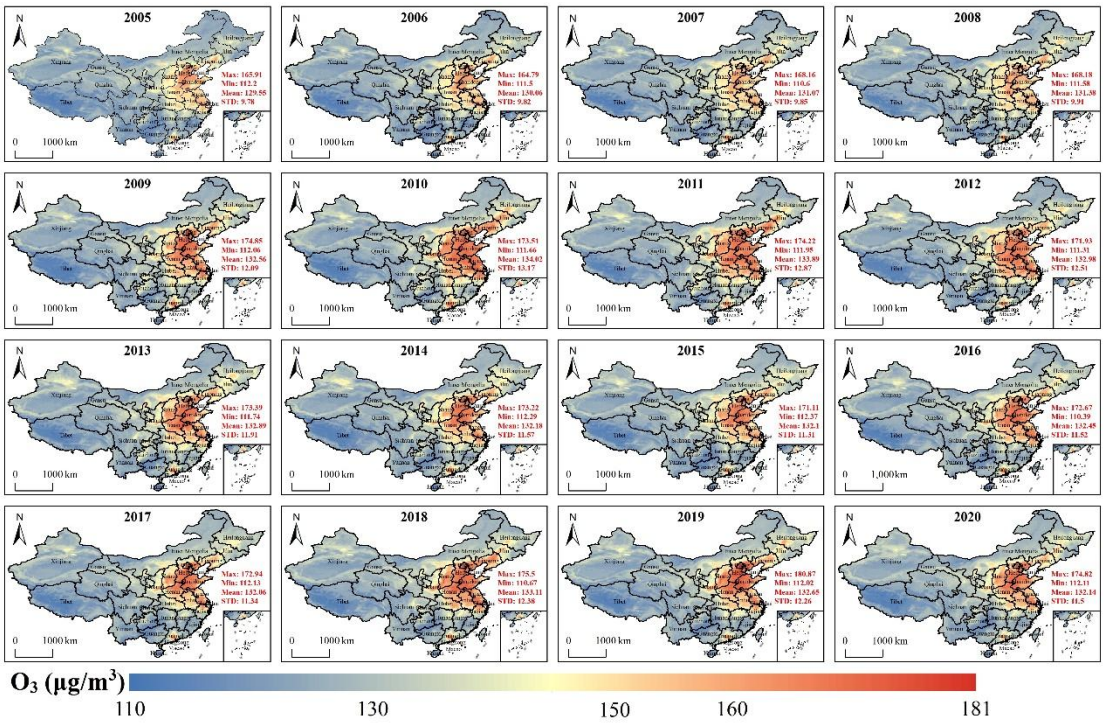


Figure S6 Spatial distribution of annual O3 concentration in China from 2005 to 2020

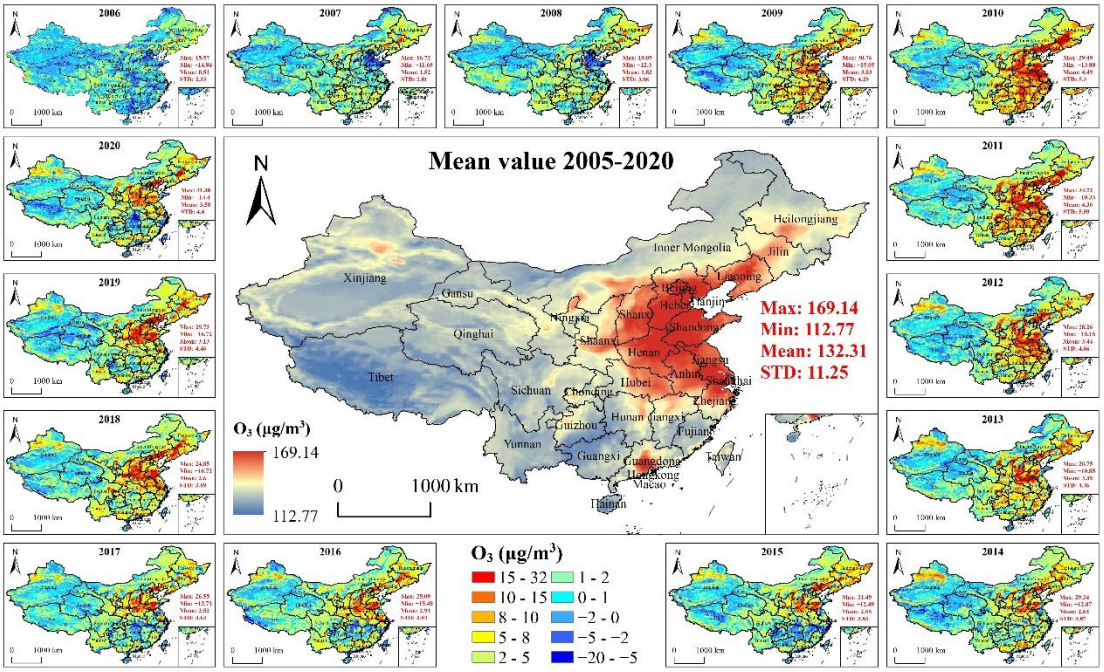


Figure S7 Distribution of the mean value of ozone concentration from 2005 to 2020 and the difference of ozone concentration between other years and 2005

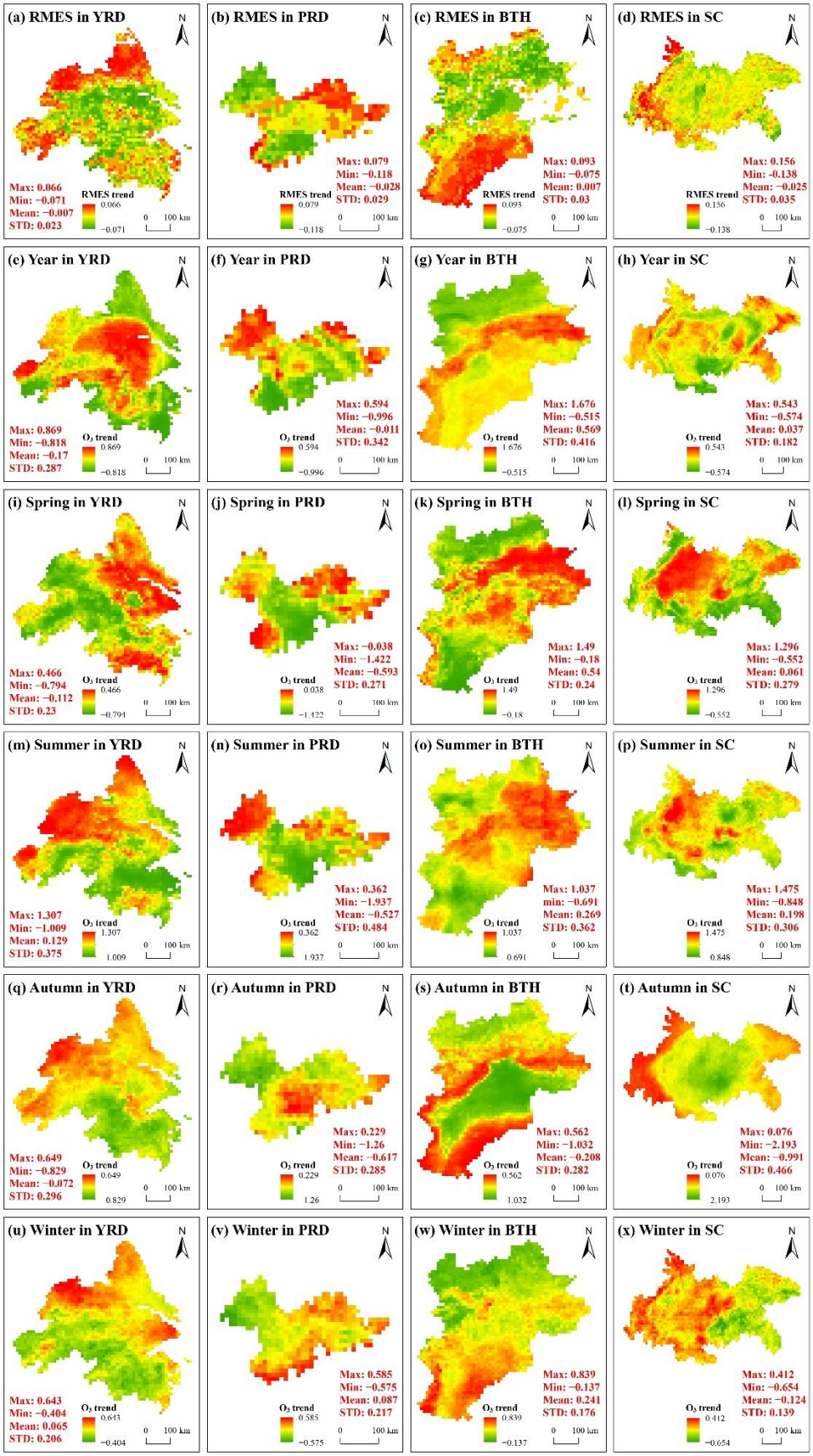


Figure S8 Spatial trends in the proportion of exceedances and concentrations of O3 in four regions (a-d. RMES; e-h. Year; i-l. spring; m-p. summer; q-t. autumn; u-x. winter).

Supplementary Tables

Table S1. Seasonal statistical for PWC, MC, PAE and PPE.

Analysis index	Statistical indicators	Spring	Summer	Autumn	Winter
MC	Mean(μg/m^3)	116.53	128.75	108.70	89.52
	Std(μg/m^3)	7.63	3.35	7.04	6.86
	CV(%)	6.55	2.60	6.47	7.67
PWC	Mean(μg/m^3)	133.37	157.10	136.74	88.88
	Std(μg/m^3)	14.48	8.06	11.85	9.77
	CV(%)	10.86	5.13	8.67	11.00
PAE (LT-1)	Mean(%)	3.86	7.47	2.38	<0.01
	Std(%)	1.31	1.94	1.87	<0.01
	CV(%)	33.95	25.92	78.48	\
PPE (LT-1)	Mean(%)	15.89	45.94	22.62	\
	Std(%)	16.86	7.68	15.95	\
	CV(%)	106.07	16.71	70.53	\