

Supplementary Materials:

Table S1. Average cooling effect of the three configuration modes.

	Devision	N	Mean	SD	SE	Duncan Group
Descriptive Statistics	IP	180	1.0197	0.77727	0.05793	A
	LP	180	1.3658	0.96145	0.07166	B
	GP	180	2.0458	0.96646	0.07204	C
	Total	540	1.4771	0.99990	0.04303	
Test for Homogeneity of Variances	Levene Statistic	df1		df2		P
	2.480	2		537		0.085
Analysis of Variance	Devision	SS	df	MS	F-ratio	P
	Between Groups	98.088	2	49.044	59.747	0.000
	Within Groups	440.804	537	0.821		
	Total	538.892	539			

IP: individual planting; LP: linear planting; GP: group planting.

Table S2. Average humidifying effect of the three configuration modes.

	Devision	N	Mean	SD	SE	Duncan Group
Descriptive Statistics	IP	180	2.0960	1.81355	0.13577	A
	LP	180	2.7468	2.07930	0.15498	B
	GP	180	3.4506	2.15359	0.16052	C
	Total	540	2.7645	2.09162	0.09001	
Test for Homogeneity of Variances	Levene Statistic	df1		df2		P
	1.170	2		537		0.311
Analysis of Variance	Devision	SS	df	MS	F-ratio	P
	Between Groups	165.227	2	82.614	20.231	0.000
	Within Groups	2192.819	537	4.083		
	Total	2358.046	539			

IP: individual planting; LP: linear planting; GP: group planting.

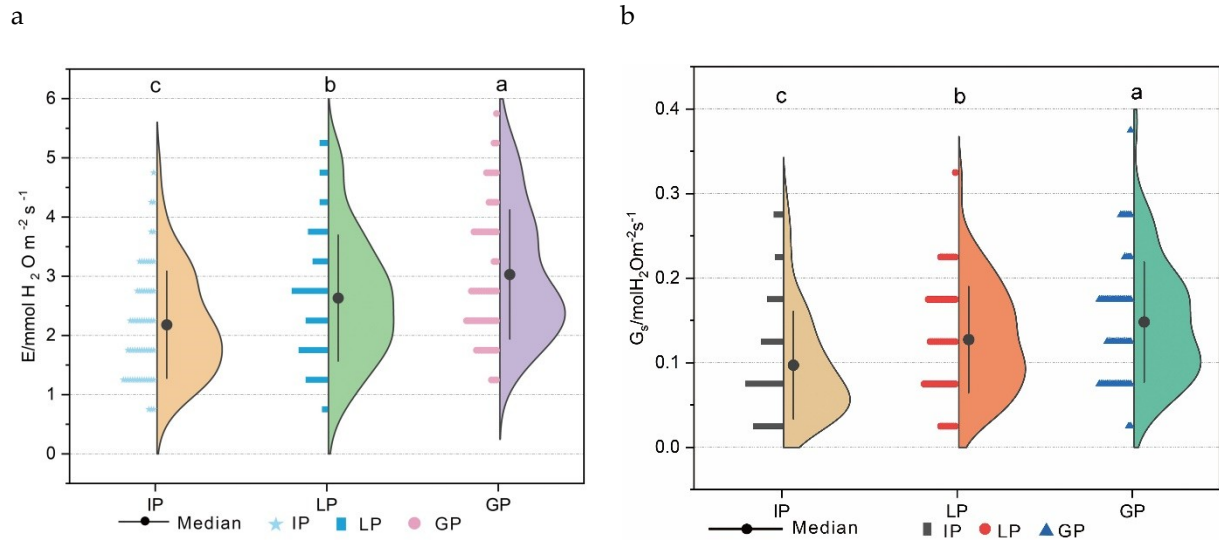


Figure S1. Differences in transpiration characteristics among the three configuration modes. **(a)** E ; **(b)** G_s . Significant differences between configuration modes are indicated by different letters ($p < 0.05$). E : transpiration rate; G_s : stomatal conductance. The filled area represents data distribution.

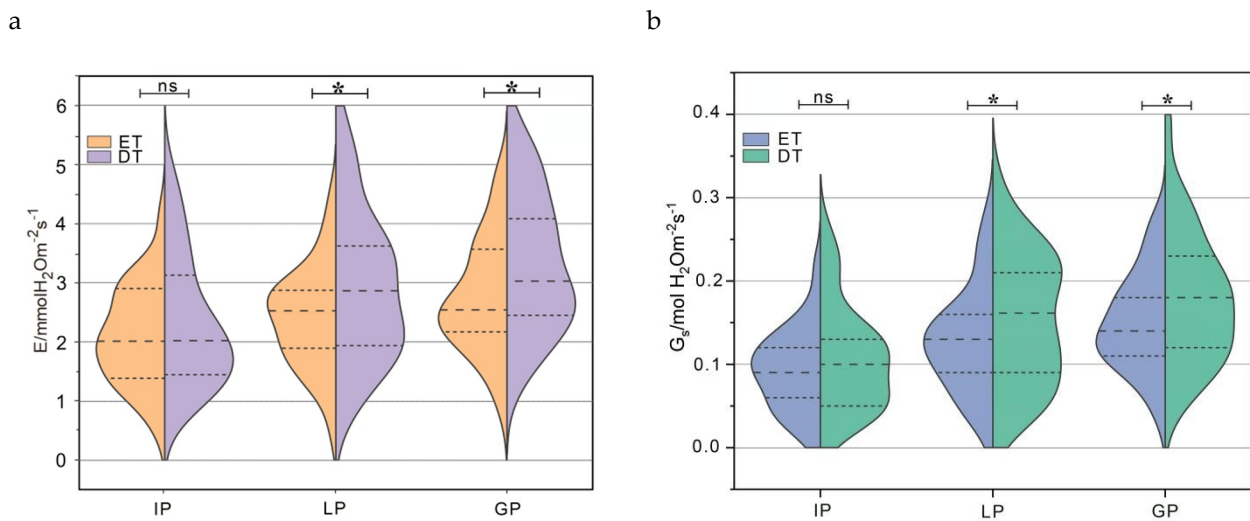


Figure S2. Transpiration characteristics of evergreen and deciduous tree species. **(a)** E ; **(b)** G_s . ns: no significant; *represents a significant level ($p < 0.05$). E : transpiration rate; G_s : stomatal conductance; ET: evergreen tree species; DT: deciduous tree species.

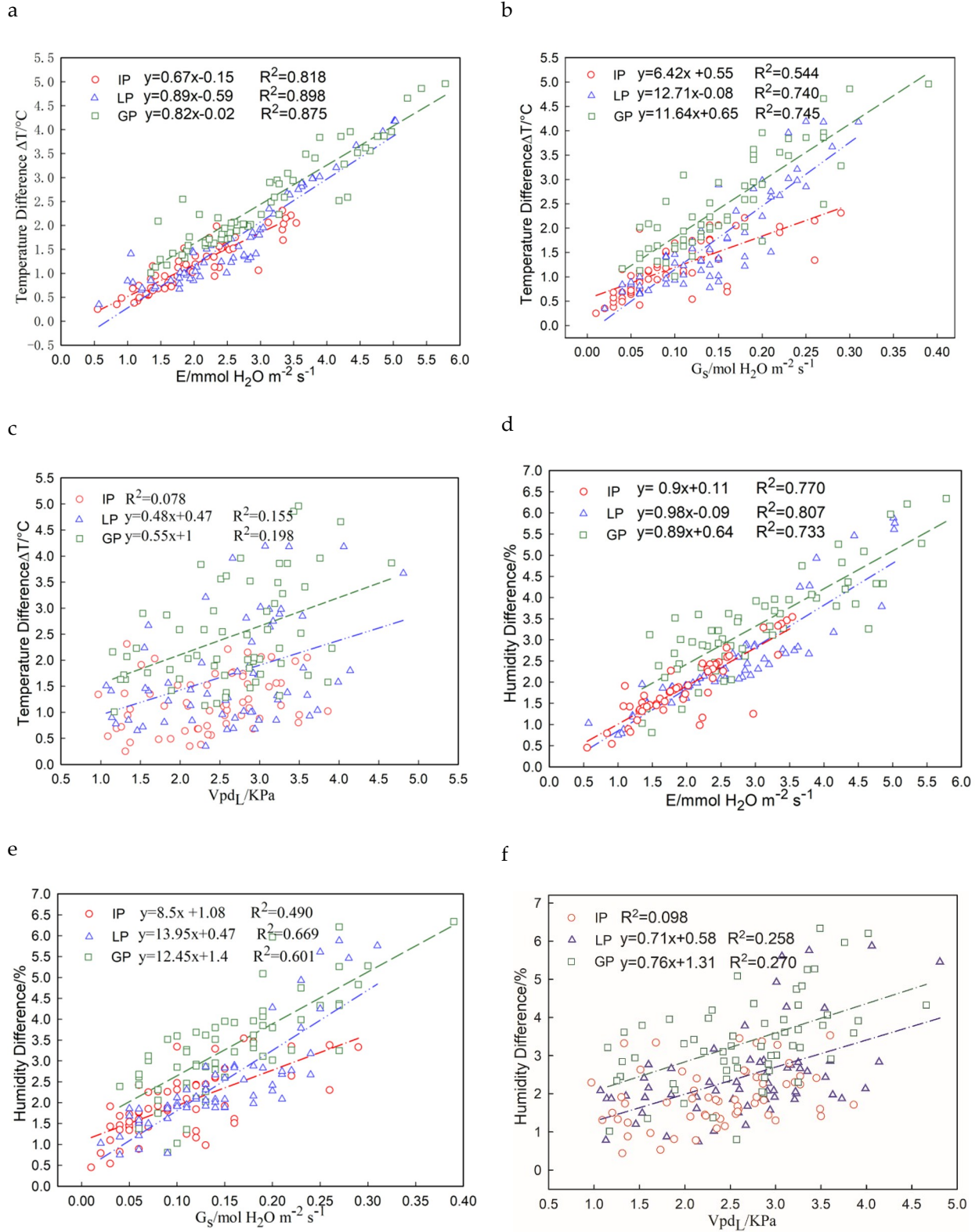


Figure S3. Correlation and fitting function model of microclimate regulation and transpiration characteristics of urban trees with different configuration modes. (a) E and cooling effect; (b) G_s and cooling effect; (c) V_{pdL} and cooling effect; (d) E and humidifying effect; (e) G_s and humidifying effect; (f) V_{pdL} and humidifying effect. IP: individual planting; LP: linear planting; GP: group planting; E: transpiration rate; G_s : stomatal conductance.

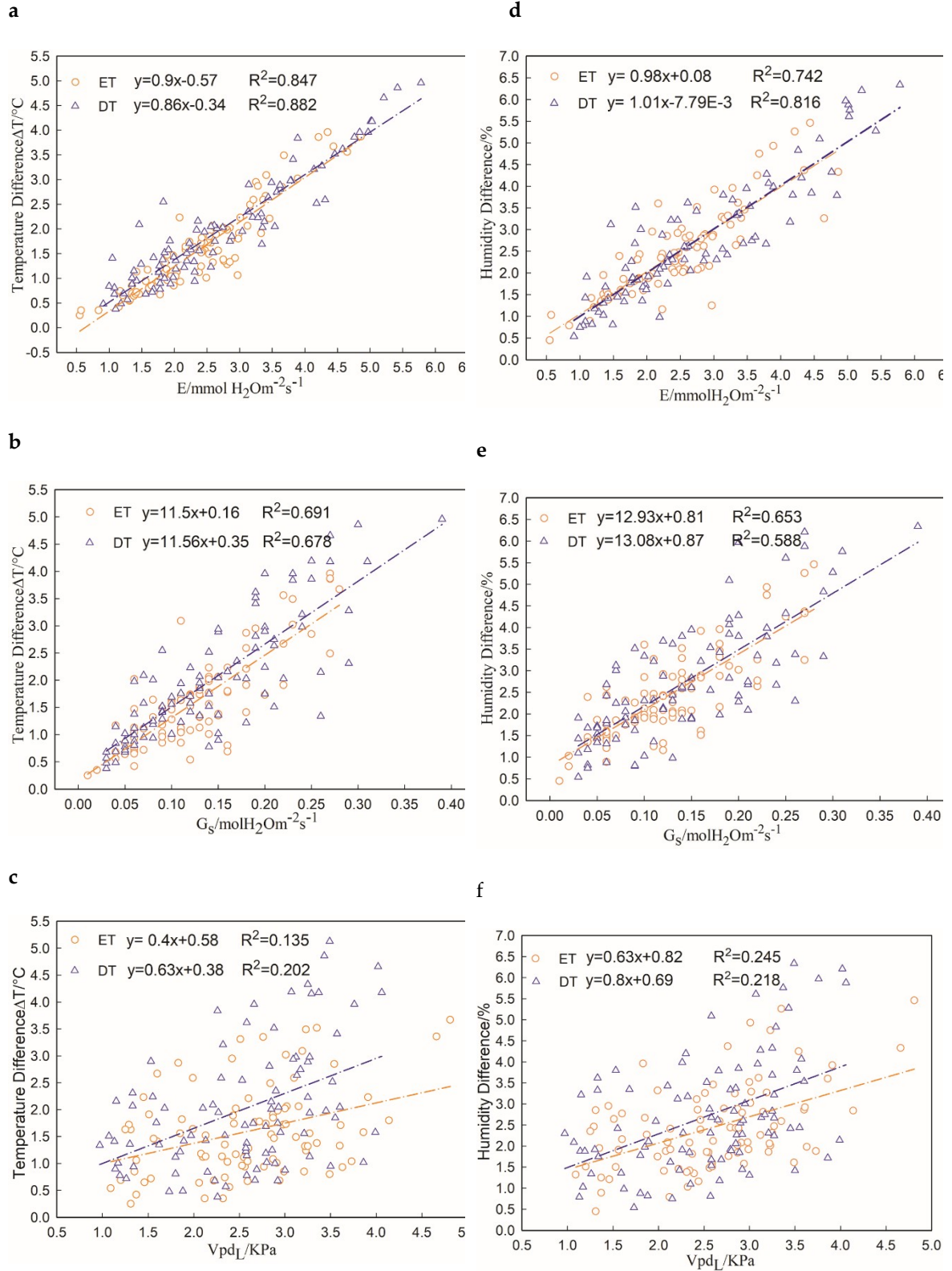


Figure S4: Microclimate regulation and transpiration characteristics of ET and DT. (a) E and cooling effect; (b) G_s and cooling effect; (c) V_{pdL} and cooling effect; (d) E and humidifying effect; (e) G_s and humidifying effect; (f) V_{pdL} and humidifying effect. ET: evergreen tree species; DT: deciduous tree species; E: transpiration rate; G_s : stomatal conductance; V_{pdL} : vapor pressure deficit.

