

Article

Responses of winter wheat yield to drought in the North China Plain: Spatial-temporal patterns and climatic drivers

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Supplementary Materials:

Table S1 Calibrated parameters for winter wheat, its default value and calibration range

Crop parameters	Default Value	Lower range	Higher range
WA	35	30	45
HI	0.50	0.4	0.6
PHU	1800	1600	2000
DLAI	0.6	0.3	1
DLAP1	15.01	10.01	20.01
DLAP2	50.95	30.95	70.95
DMLA	6	5	8
RLAD	1	0.8	1.2

Table S2 The irrigation schedule

Region	Wintering Stage Irrigation	Jointing Stage Irrigation	Filling Stage Irrigation
I	60 mm	60 mm	60 mm
II	No Irrigation	60 mm	60 mm
III	No Irrigation	60 mm	No Irrigation

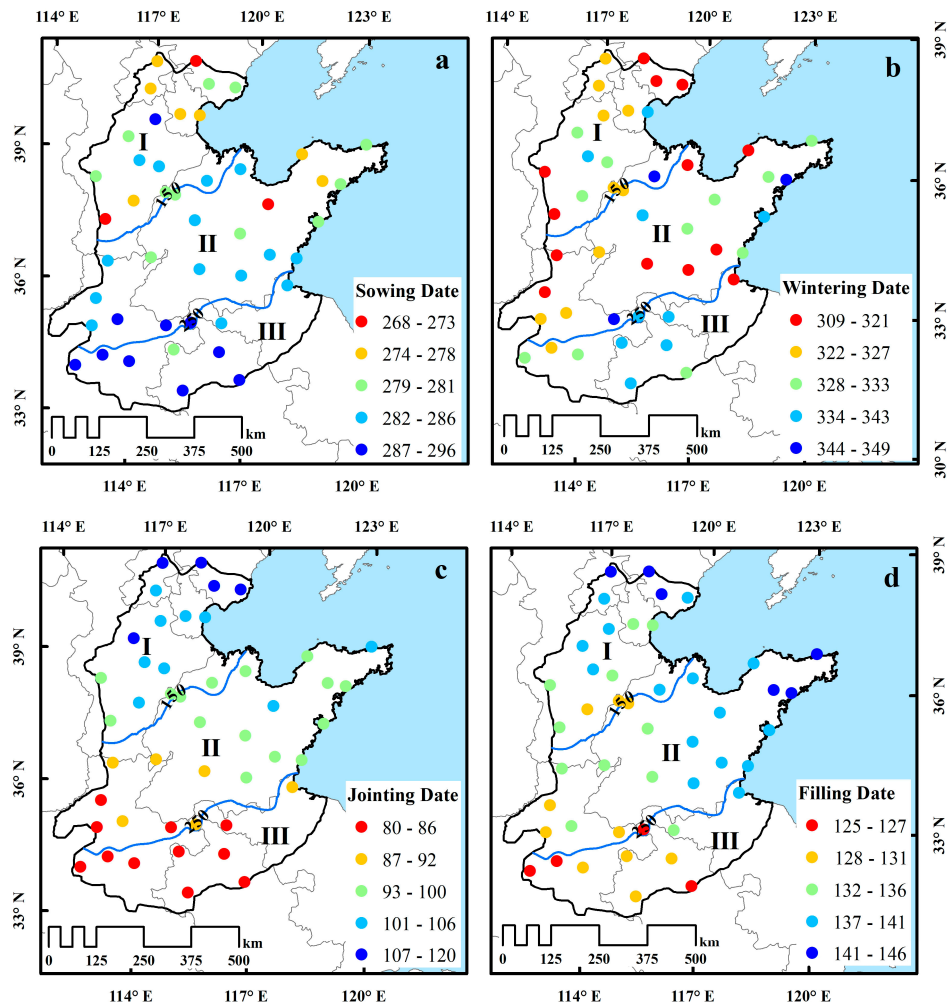


Figure S1. Long-term mean sowing dates(a), wintering dates(b), jointing dates(c) and filling dates(d)

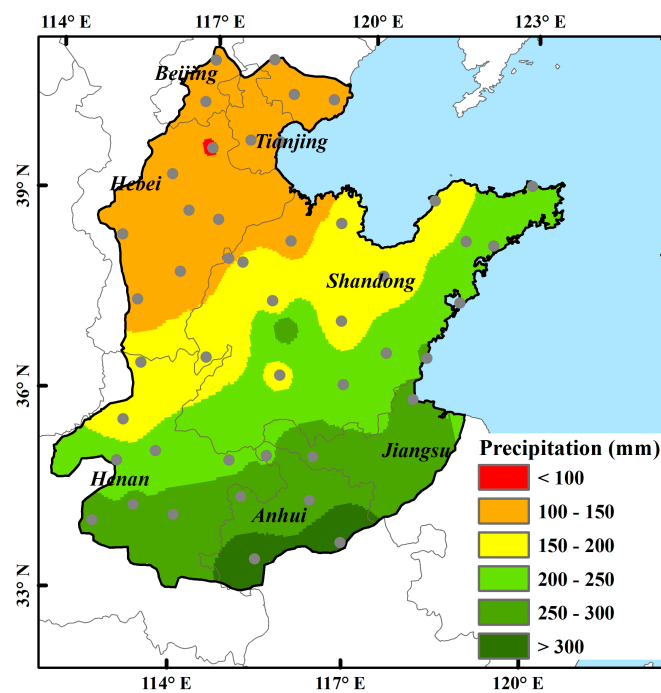


Figure S2. Distribution of average precipitation during the winter wheat growing season from 1981 to 2013

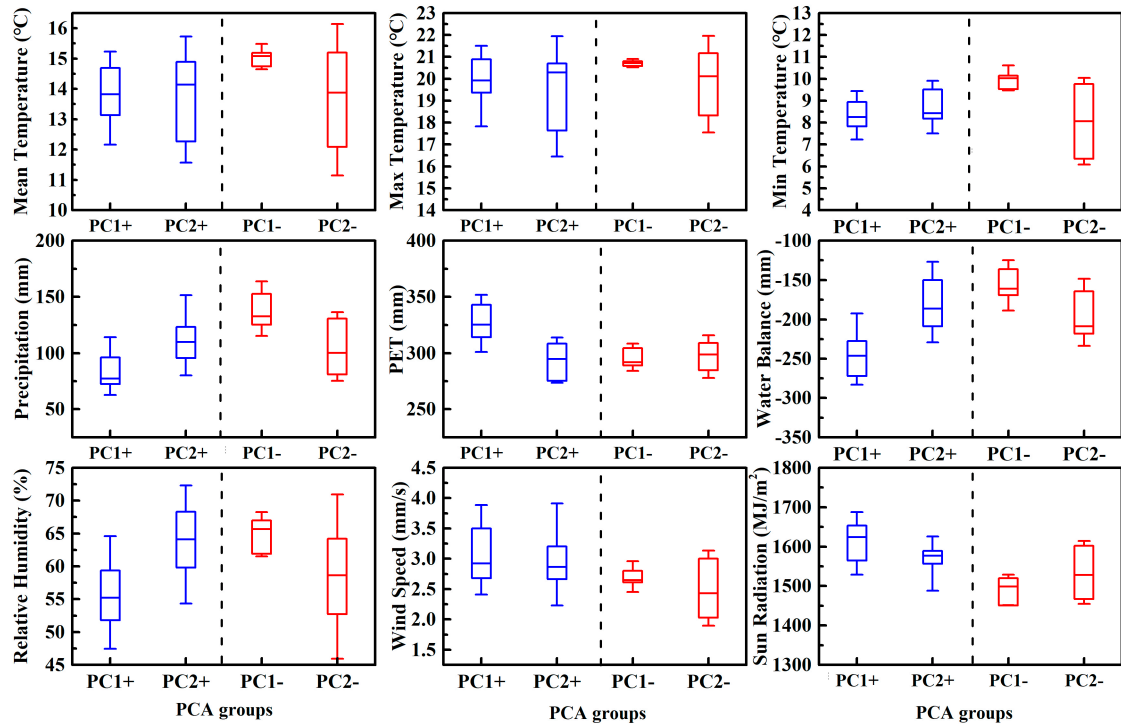


Figure S3 Mean spring values of the main climatic factors characterized by the first two principal components of the winter wheat responses to different time-scale SPEI obtained in a PCA method. Error bars represent 1 standard error of the mean value.

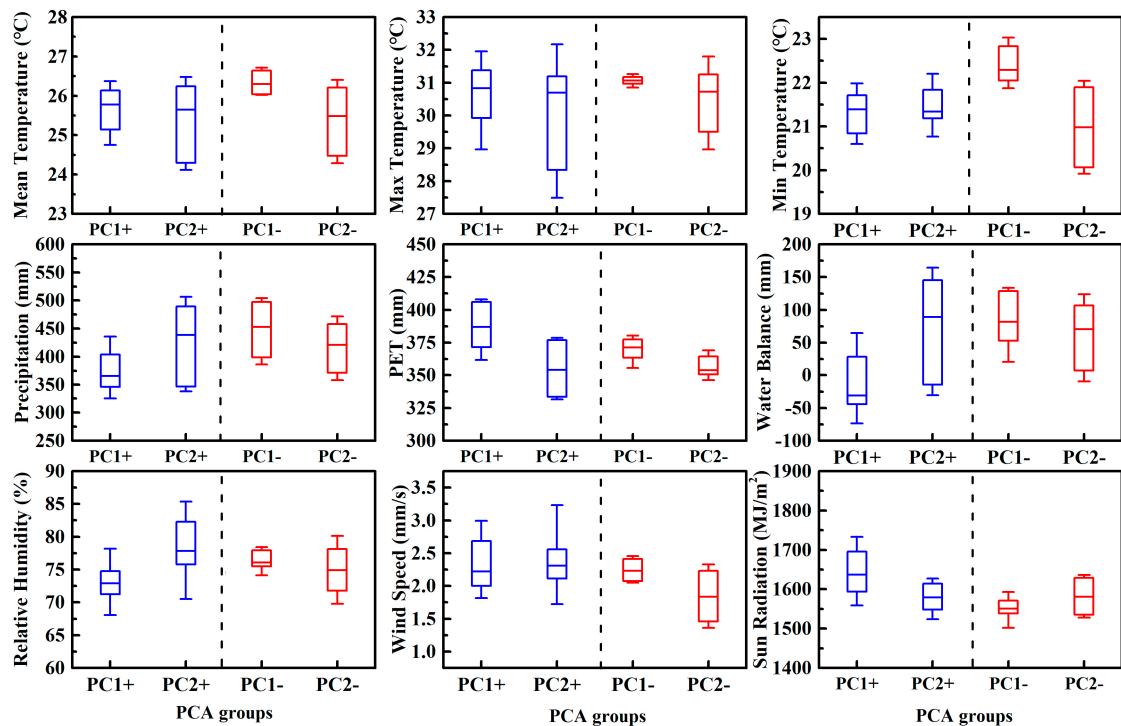


Figure S4. Same as Supplementary Figure 1, but for summer.

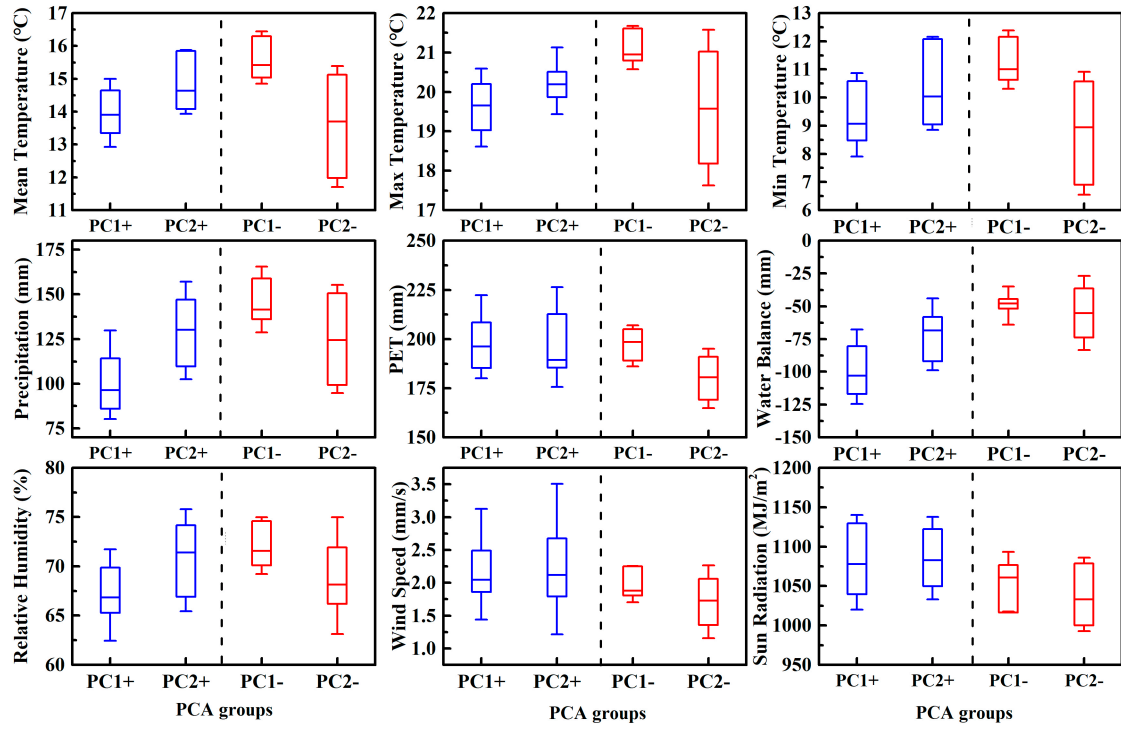


Figure S5. Same as Supplementary Figure 1, but for autumn.

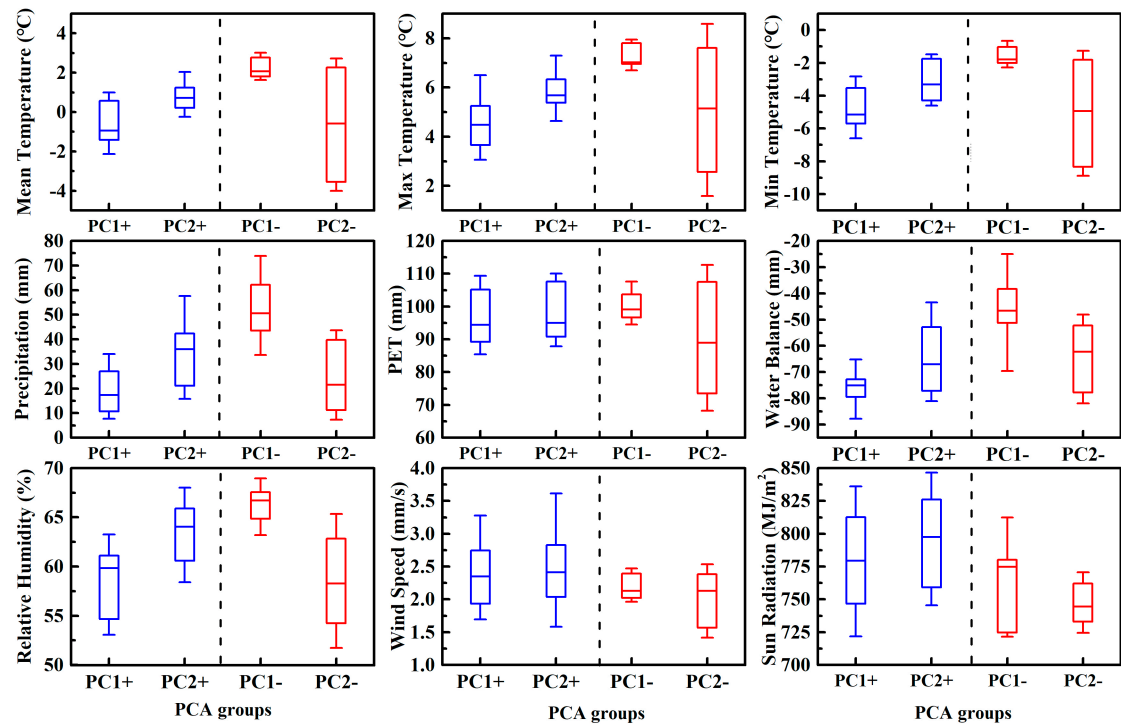


Figure S6. Same as Supplementary Figure 1, but for winter.