

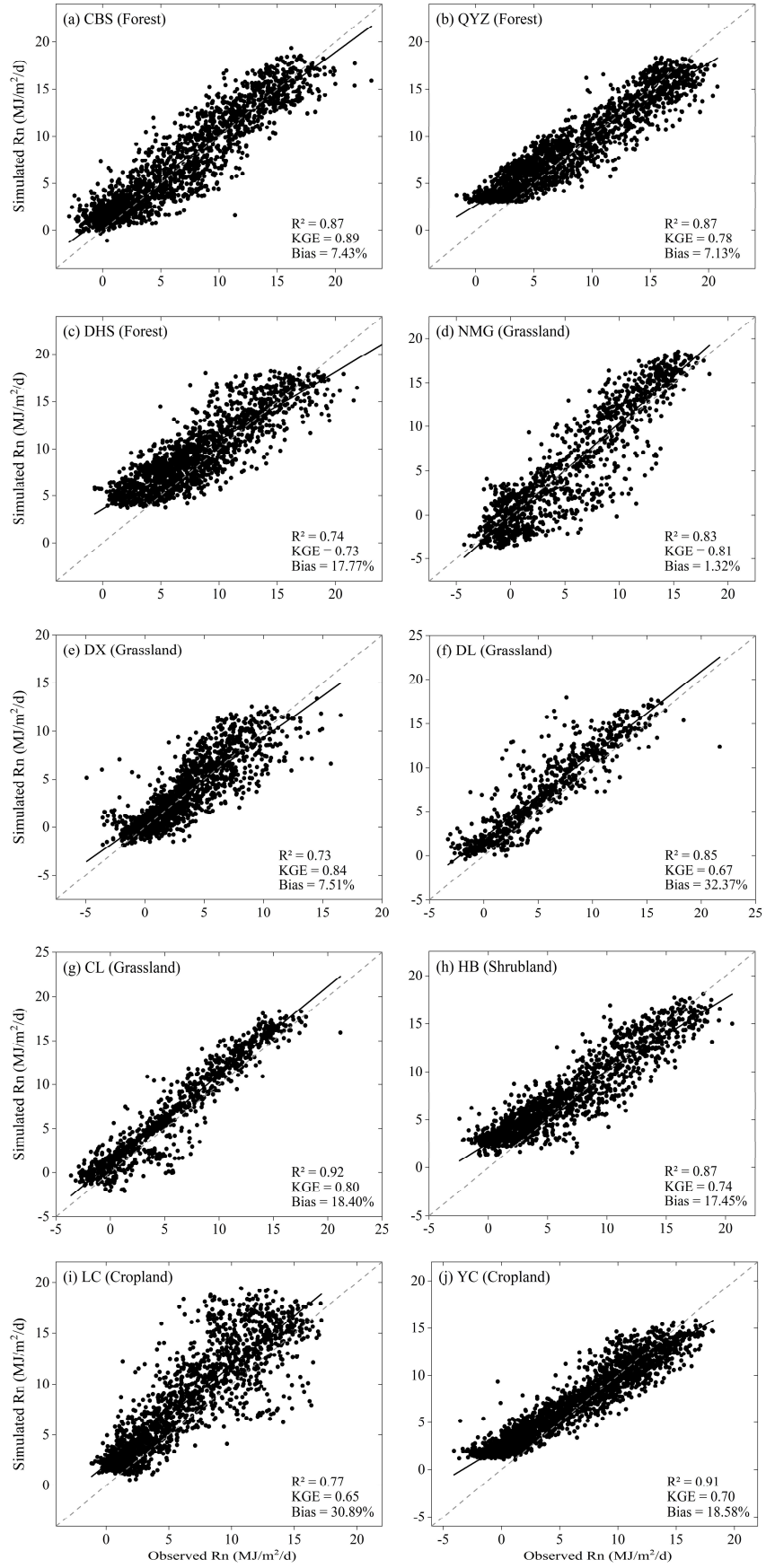
**Supplemental materials to "Different vegetation information inputs significantly affect the evapotranspiration simulations of the PT-JPL model"**

**Table S1.** The performance of the PT-JPL model under two soil moisture constraints ( $f_{SM\_daily}$  versus  $f_{SM\_midday}$ ). Here  $f_{SM\_daily}$  represents that the constraint is calculated using daily average  $RH$  and  $VPD$ ;  $f_{SM\_midday}$  represents that the constraint is calculated using midday  $RH$  ( $RH_{min}$ ) and  $VPD$  ( $VPD_{max}$ ); the values in bold represent better performance statistics of the two methods.

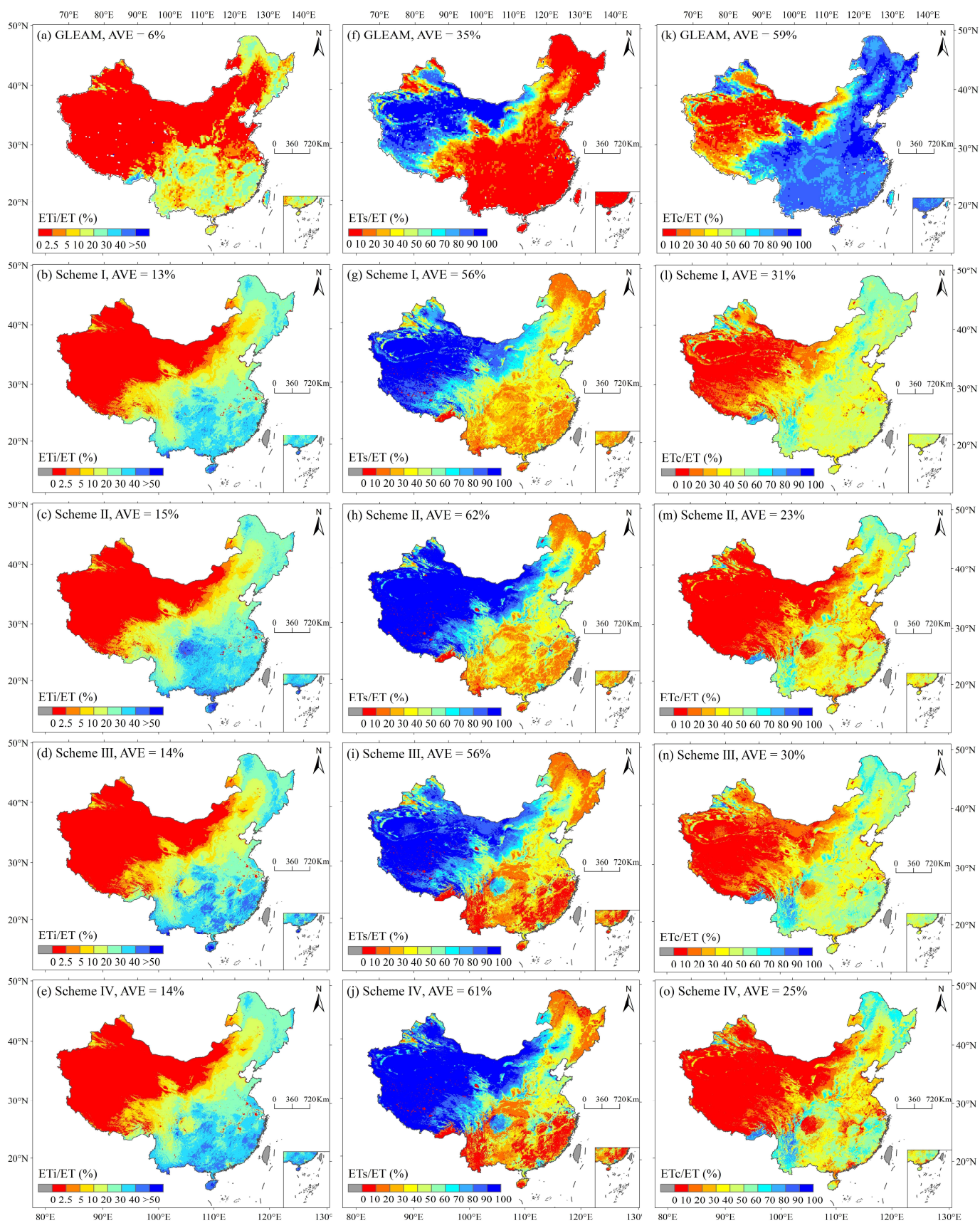
Station	$R^2$		KGE		Bias (%)	
	daily average	midday	daily average	midday	daily average	midday
CBS	0.90	0.86	0.88	0.90	7.37	-7.19
QYZ	0.73	0.46	<b>0.70</b>	0.49	-6.26	-21.29
DHS	0.47	0.31	<b>0.65</b>	0.43	16.28	-7.85
NMG	0.43	0.22	<b>0.55</b>	0.08	-23.98	-62.83
DL	0.67	0.67	<b>0.76</b>	0.65	15.26	-19.86
DX	0.63	0.61	<b>0.52</b>	0.33	6.15	-39.46
CL	0.72	0.69	<b>0.78</b>	0.56	-15.43	-35.04
HB	0.84	0.71	<b>0.45</b>	0.26	-34.42	-53.37
YC	0.66	0.58	<b>0.63</b>	0.53	-20.68	-32.63
LC	0.70	0.73	<b>0.52</b>	0.50	-28.66	-34.59
Basin	0.72	0.61	<b>0.81</b>	0.75	5.80	-9.23

**Table S2.** Comparison of the model performance obtained from two  $T_{\text{opt}}$  schemes:  $T_{\text{opt}} = 25^{\circ}\text{C}$  versus the empirical formula used in the original PT-JPL model. The values in bold represent better performance statistics of the two methods.

Sites	$R^2$		KGE		Bias (%)	
	25°C	Empirical formula	25°C	Empirical formula	25°C	Empirical formula
CBS	0.90	0.85	0.88	0.91	7.37	3.50
QYZ	0.73	0.40	<b>0.70</b>	0.51	-6.26	-14.84
DHS	0.47	0.26	<b>0.65</b>	0.44	16.28	-0.91
NMG	0.43	0.35	<b>0.55</b>	0.40	-23.98	-36.91
DL	0.67	0.66	<b>0.76</b>	0.75	15.26	16.80
DX	0.63	0.66	<b>0.52</b>	0.50	6.15	14.40
CL	0.72	0.73	<b>0.78</b>	0.73	-15.43	-19.34
HB	0.84	0.81	<b>0.45</b>	0.44	-34.42	-35.17
YC	0.66	0.56	<b>0.63</b>	0.60	-20.68	-22.70
LC	0.70	0.71	<b>0.52</b>	0.50	-28.66	-31.20
Basin	0.72	0.60	<b>0.81</b>	0.73	5.80	5.40

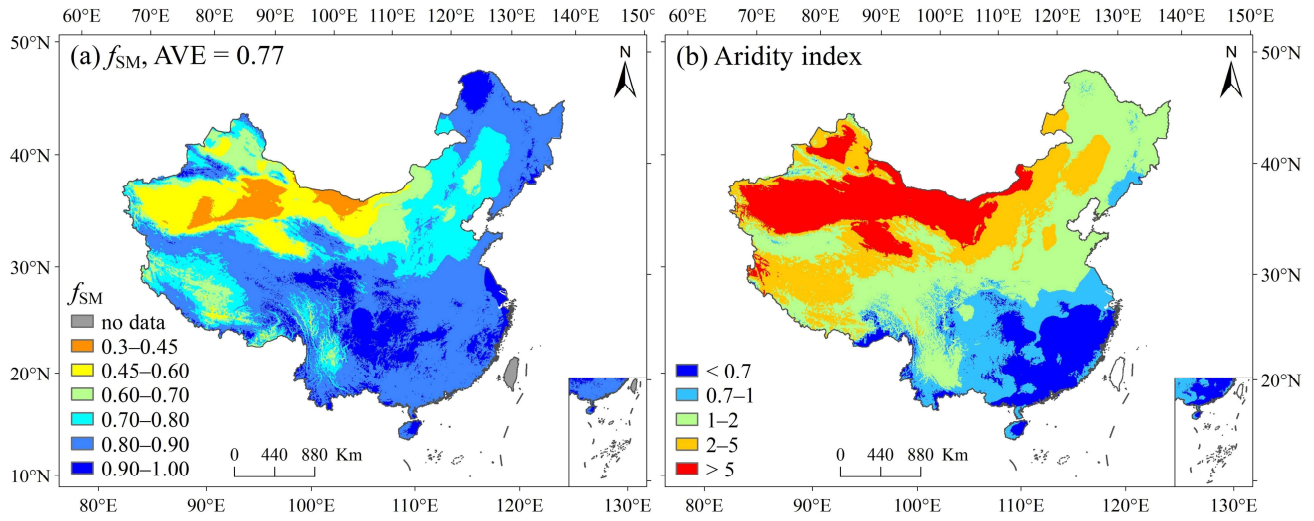


**Figure S1.** Scatterplots of net radiation ( $R_n$ ) estimates and observations at flux sites.



**Figure S2.** Spatial distribution map of the contribution of each component to total ET for GLEAM product and PT-JPL model.





**Figure S3.** The spatial pattern of mean annual (1982-2015) soil moisture constraint ( $f_{SM}$ ) (a) and the aridity index (b) across China. Here the  $f_{SM}$  was calculated from daily average relative humidity ( $RH$ ) and vapor pressure deficit ( $VPD$ ).