Splitting and Length of Years for Improving Tree-Based Models to Predict Reference Crop Evapotranspiration in the Humid Regions of China

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Supplementary Materials:

Table S1. Average statistical values of different input parameters of three length of years of machine learning models in testing process of 21 stations under the fixed test data set (2016-2019).

Model/Input combination	10-years				30-years				50-years			
	R^2	RMSE (mm·d⁻¹)	MAE (mm·d⁻¹)	NS^E	R^2	RMSE (mm·d-1)	MAE (mm·d-1)	NS^E	R^2	RMSE (mm·d-1)	MAE (mm·d-1)	NS^E
XGB												
1	0.768	0.717	0.528	0.725	0.775	0.696	0.514	0.775	0.775	0.703	0.520	0.737
2	0.946	0.325	0.245	0.942	0.948	0.320	0.237	0.948	0.947	0.323	0.239	0.942
3	0.872	0.524	0.373	0.851	0.874	0.525	0.376	0.874	0.870	0.549	0.395	0.838
4	0.804	0.757	0.562	0.682	0.812	0.708	0.522	0.812	0.814	0.699	0.513	0.734
	0.848	**0.581**	**0.427**	**0.800**	**0.852**	**0.563**	**0.412**	**0.852**	**0.852**	**0.568**	**0.417**	**0.813**
RF												
1	0.778	0.700	0.517	0.737	0.778	0.690	0.510	0.745	0.776	0.700	0.519	0.738
2	0.950	0.315	0.240	0.945	0.950	0.314	0.235	0.945	0.949	0.318	0.237	0.944
3	0.881	0.504	0.360	0.862	0.880	0.511	0.367	0.858	0.876	0.537	0.387	0.844
4	0.816	0.719	0.537	0.714	0.821	0.679	0.501	0.749	0.822	0.673	0.494	0.754
	0.856	**0.560**	**0.413**	**0.814**	**0.857**	**0.549**	**0.403**	**0.824**	**0.856**	**0.557**	**0.409**	**0.820**

Note: The average of the four combinations of each statistical indicator are highlighted in bold.

Table S2. Average statistical values of five proportions of three length of years of machine learning models in testing process of 21 stations under the fixed test data set (2016-2019).

Model/Proportions	10-years				30-years				50-years			
	R^2	RMSE (mm·d⁻¹)	MAE (mm·d⁻¹)	NSE	R^2	RMSE (mm·d⁻¹)	MAE (mm·d⁻¹)	NSE	R^2	RMSE (mm·d⁻¹)	MAE (mm·d⁻¹)	NSE
XGB												
55	0.844	0.589	0.435	0.794	0.849	0.570	0.418	0.810	0.849	0.575	0.422	0.808
64	0.846	0.584	0.430	0.798	0.851	0.566	0.415	0.813	0.850	0.571	0.419	0.811
73	0.847	0.582	0.428	0.800	0.852	0.563	0.413	0.815	0.851	0.569	0.417	0.812
82	0.849	0.579	0.425	0.801	0.853	0.561	0.411	0.816	0.852	0.567	0.416	0.813
91	0.850	0.577	0.424	0.802	0.854	0.560	0.410	0.817	0.853	0.566	0.415	0.814
	0.848	**0.581**	**0.427**	**0.800**	**0.852**	**0.563**	**0.412**	**0.815**	**0.852**	**0.568**	**0.417**	**0.813**
RF												
55	0.853	0.566	0.419	0.810	0.855	0.554	0.408	0.820	0.854	0.561	0.413	0.817
64	0.855	0.562	0.415	0.813	0.856	0.551	0.405	0.823	0.855	0.559	0.411	0.819
73	0.856	0.560	0.414	0.814	0.857	0.549	0.403	0.824	0.855	0.557	0.410	0.820
82	0.857	0.558	0.412	0.815	0.858	0.548	0.402	0.825	0.857	0.555	0.408	0.821
91	0.858	0.557	0.411	0.816	0.858	0.547	0.401	0.825	0.856	0.555	0.408	0.821
	0.856	**0.561**	**0.414**	**0.814**	**0.857**	**0.550**	**0.404**	**0.823**	**0.855**	**0.558**	**0.410**	**0.820**

Note: The average of the five proportions of each statistical indicator are highlighted in bold.