

# Differences in Reference Evapotranspiration Variation and Climate-Driven Patterns in Different Altitudes of the Qinghai–Tibet Plateau (1961–2017)

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**Table S1.** The *p*-value of the raw sequence and the converted sequence by LB test.

Station Number	Zone	Annual Series		Spring Series		Summer Series		Autumn Series		Winter Series	
		Raw	After	Raw	After	Raw	After	Raw	After	Raw	After
52602	Low	0.000	0.605	0.177	-	0.000	0.552	0.000	0.834	0.289	-
52657	Low	0.018	0.953	0.041	0.911	0.441	-	0.125	-	0.079	-
52825	Low	0.000	0.227	0.000	0.611	0.000	0.129	0.000	0.464	0.722	-
52866	Low	0.000	0.178	0.016	0.426	0.000	0.175	0.000	0.707	0.614	-
52868	Low	0.008	0.640	0.118	-	0.071	-	0.055	-	0.001	0.840
52974	Low	0.003	0.724	0.038	0.743	0.021	0.919	0.581	-	0.054	-
56172	Low	0.000	0.309	0.011	0.971	0.154	-	0.001	0.366	0.035	0.528
56178	Low	0.000	0.594	0.045	0.987	0.099	-	0.072	-	0.003	0.413
56374	Low	0.046	0.847	0.417	-	0.742	-	0.068	-	0.818	-
56459	Low	0.000	0.080	0.110	-	0.012	0.689	0.000	0.353	0.003	0.275
56533	Low	0.204	-	0.298	-	0.317	-	0.204	-	0.090	-
51804	Medium	0.000	0.466	0.117	-	0.000	0.394	0.000	0.325	0.053	-
51886	Medium	0.000	0.372	0.315	-	0.000	0.223	0.000	0.800	0.011	0.363
52713	Medium	0.010	0.616	0.000	0.724	0.573	-	0.000	0.705	0.000	0.370
52737	Medium	0.000	0.627	0.000	0.875	0.000	0.524	0.000	0.986	0.013	0.402
52754	Medium	0.453	-	0.066	-	0.596	-	0.585	-	0.506	-
52765	Medium	0.016	0.925	0.033	0.635	0.638	-	0.977	-	0.469	-
52818	Medium	0.000	0.668	0.048	0.917	0.000	0.368	0.000	0.987	0.183	-
52836	Medium	0.002	0.516	0.002	0.946	0.061	-	0.023	0.825	0.755	-
52856	Medium	0.001	0.756	0.007	0.952	0.045	0.831	0.007	0.925	0.064	-
52943	Medium	0.035	0.993	0.104	-	0.473	-	0.013	0.685	0.842	-
55598	Medium	0.000	0.496	0.016	0.971	0.010	0.966	0.031	0.570	0.009	0.486
56029	Medium	0.001	0.292	0.591	-	0.231	-	0.013	0.595	0.000	0.522
56065	Medium	0.000	0.353	0.001	0.627	0.008	0.953	0.011	0.897	0.000	0.613
56079	Medium	0.000	0.123	0.032	0.542	0.085	-	0.000	0.509	0.014	0.909
56080	Medium	0.000	0.199	0.008	0.573	0.002	0.588	0.005	0.696	0.031	0.983
56125	Medium	0.000	0.319	0.089	-	0.045	0.926	0.162	-	0.003	0.271
56144	Medium	0.000	0.666	0.000	0.183	0.002	0.411	0.001	0.365	0.005	0.305
56146	Medium	0.000	0.407	0.086	-	0.032	0.943	0.343	-	0.334	-
56182	Medium	0.000	0.388	0.735	-	0.862	-	0.000	0.638	0.000	0.511
56312	Medium	0.060	-	0.239	-	0.278	-	0.113	-	0.714	-
56444	Medium	0.001	0.395	0.901	-	0.007	0.345	0.041	0.800	0.070	-
56543	Medium	0.009	0.288	0.599	-	0.299	-	0.038	0.807	0.013	0.564

52908	High	0.015	0.603	0.242	-	0.077	0.077	0.696	-	0.005	0.513
55228	High	0.003	0.830	0.013	0.837	0.155	-	0.006	0.913	0.095	-
55279	High	0.003	0.641	0.371	-	0.325	-	0.234	-	0.000	0.174
55299	High	0.003	0.999	0.939	-	0.034	0.849	0.862	-	0.042	0.533
55472	High	0.001	0.397	0.957	-	0.041	0.819	0.123	-	0.011	0.609
55578	High	0.000	0.888	0.890	-	0.112	-	0.040	0.785	0.072	-
55655	High	0.000	0.920	0.007	0.552	0.006	0.862	0.428	-	0.236	-
55696	High	0.004	0.812	0.635	-	0.019	0.887	0.005	0.815	0.256	-
56004	High	0.143	-	0.870	-	0.274	-	0.496	-	0.124	-
56034	High	0.002	0.399	0.224	-	0.012	0.869	0.482	-	0.037	0.478
56038	High	0.003	0.508	0.423	-	0.031	0.581	0.060	-	0.006	0.874
56046	High	0.001	0.273	0.236	-	0.057	-	0.016	0.773	0.009	0.451
56106	High	0.004	0.658	0.931	-	0.004	0.773	0.102	-	0.027	0.418

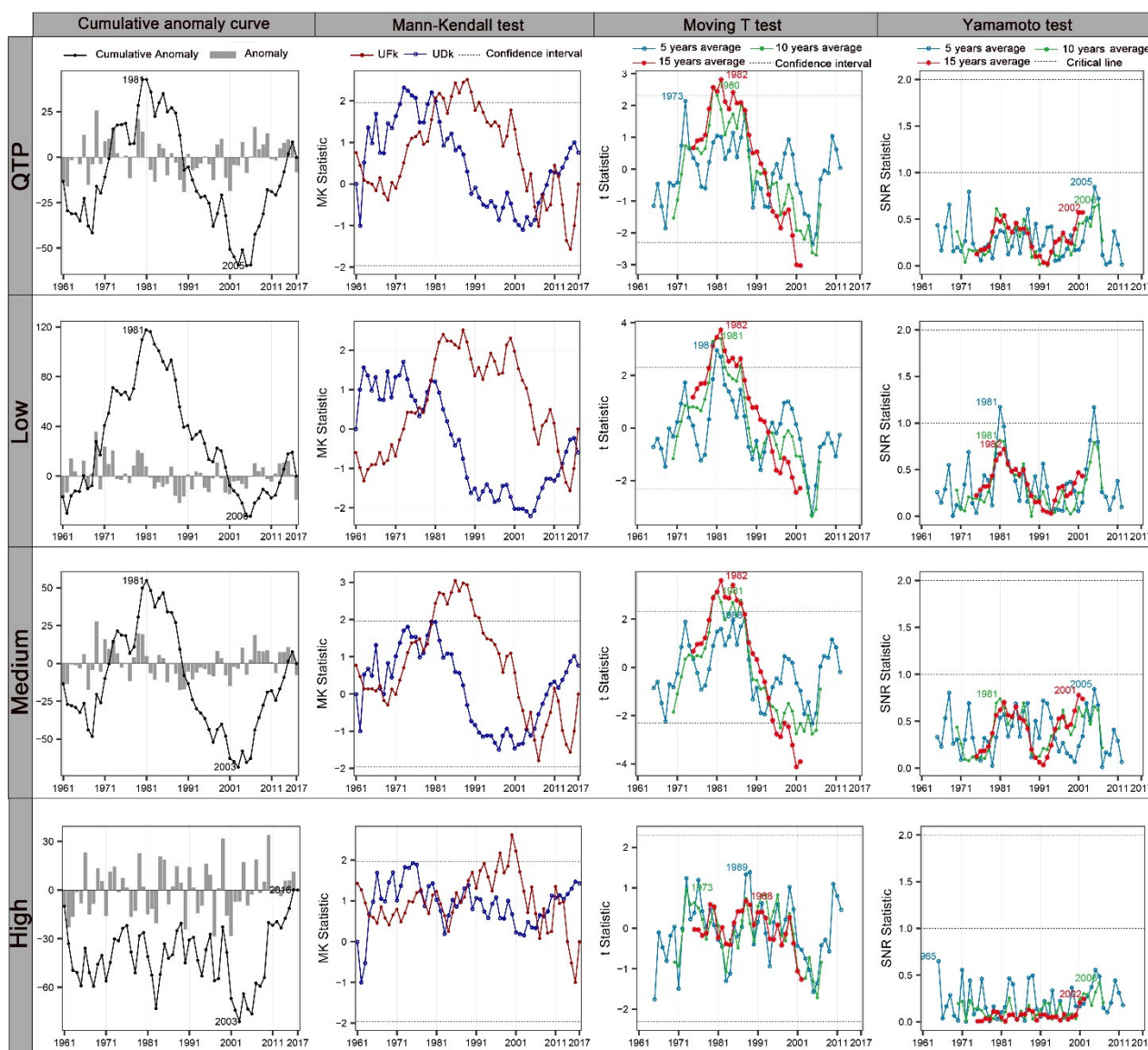
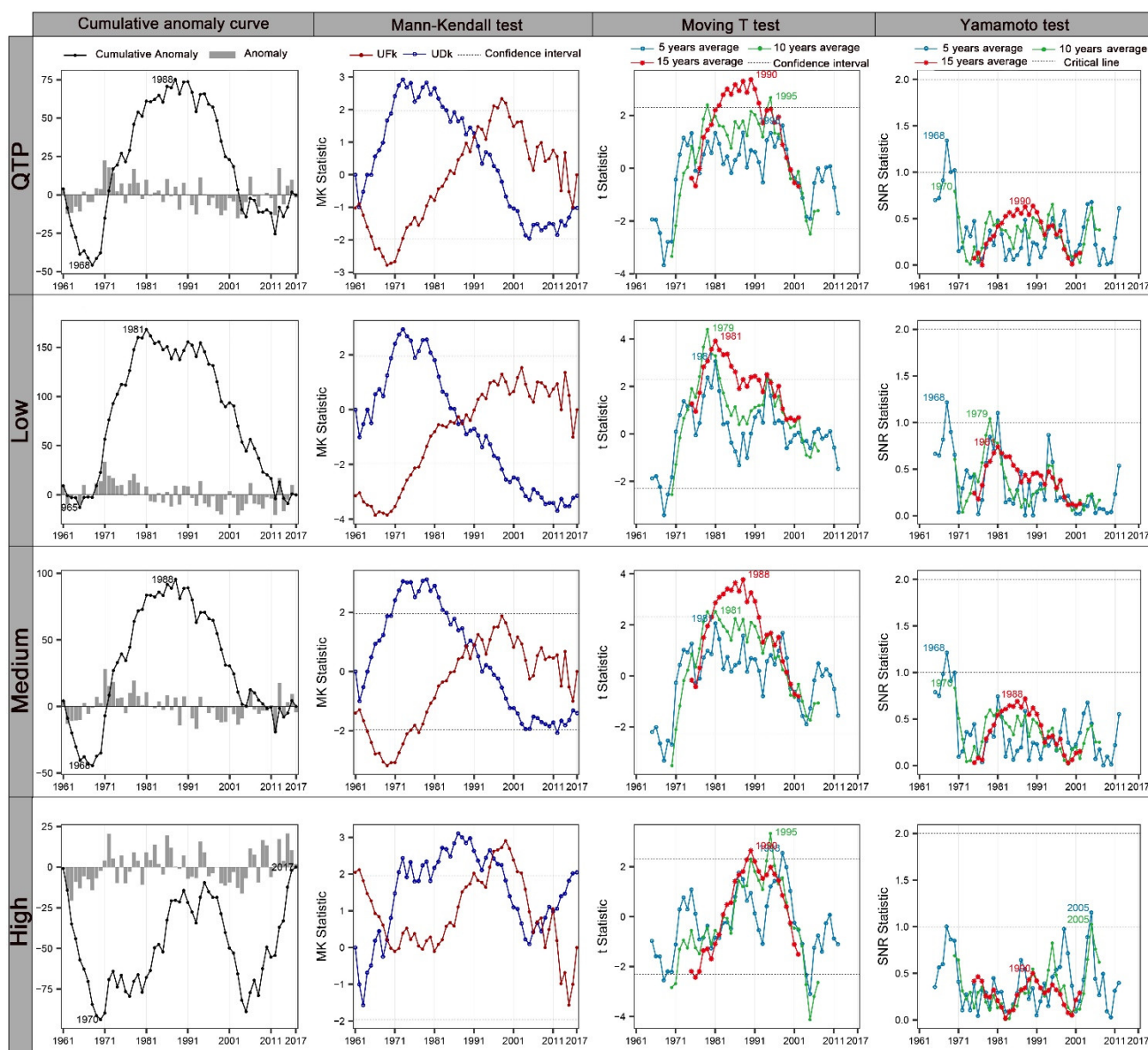


Figure S1. The results of mutation analysis of spring  $ET_0$  on different elevation zones.



**Figure S2.** The results of mutation analysis of summer  $ET_0$  on different elevation zones.

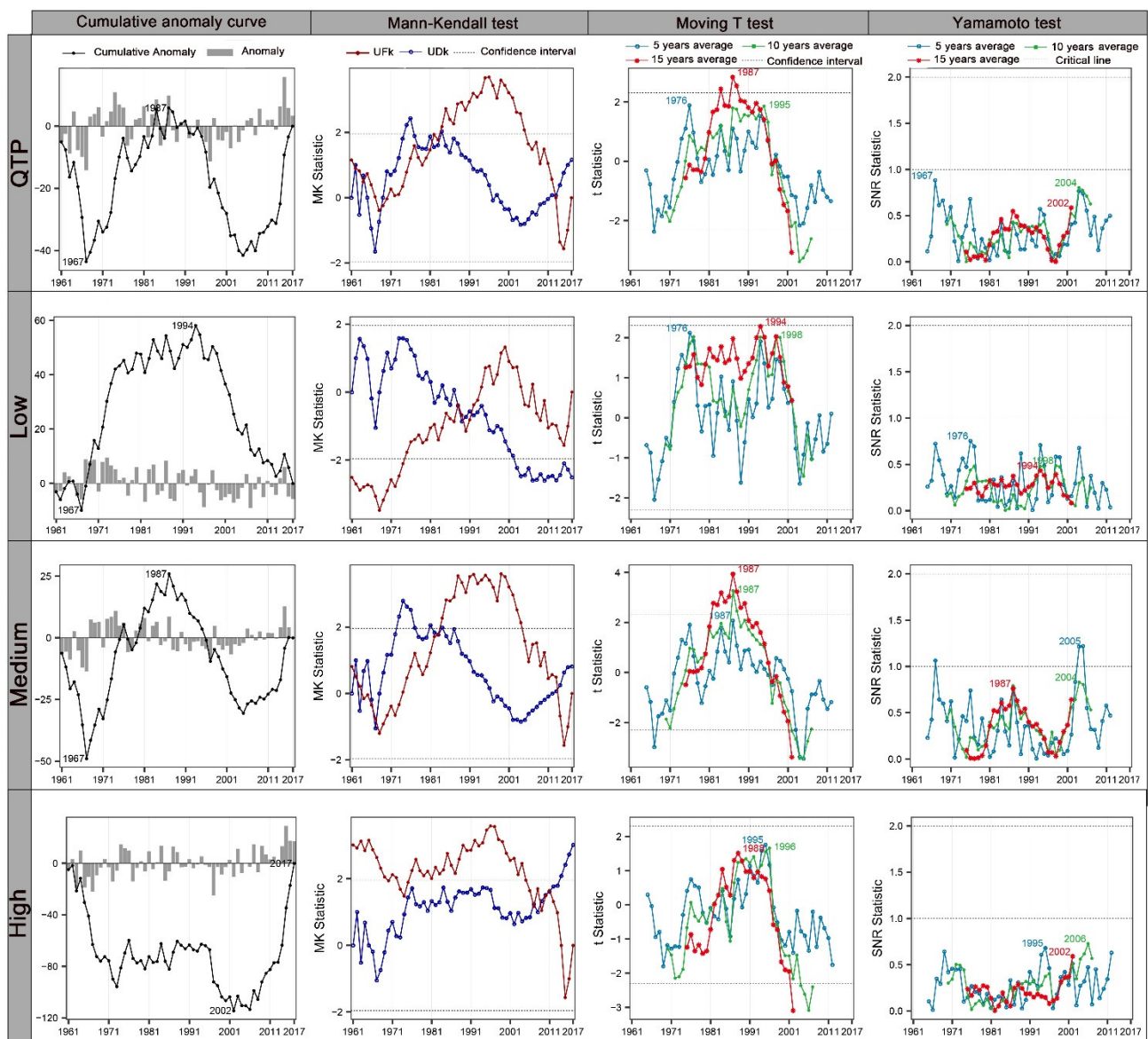


Figure S3. The results of mutation analysis of autumn  $ET_0$  on different elevation zones.



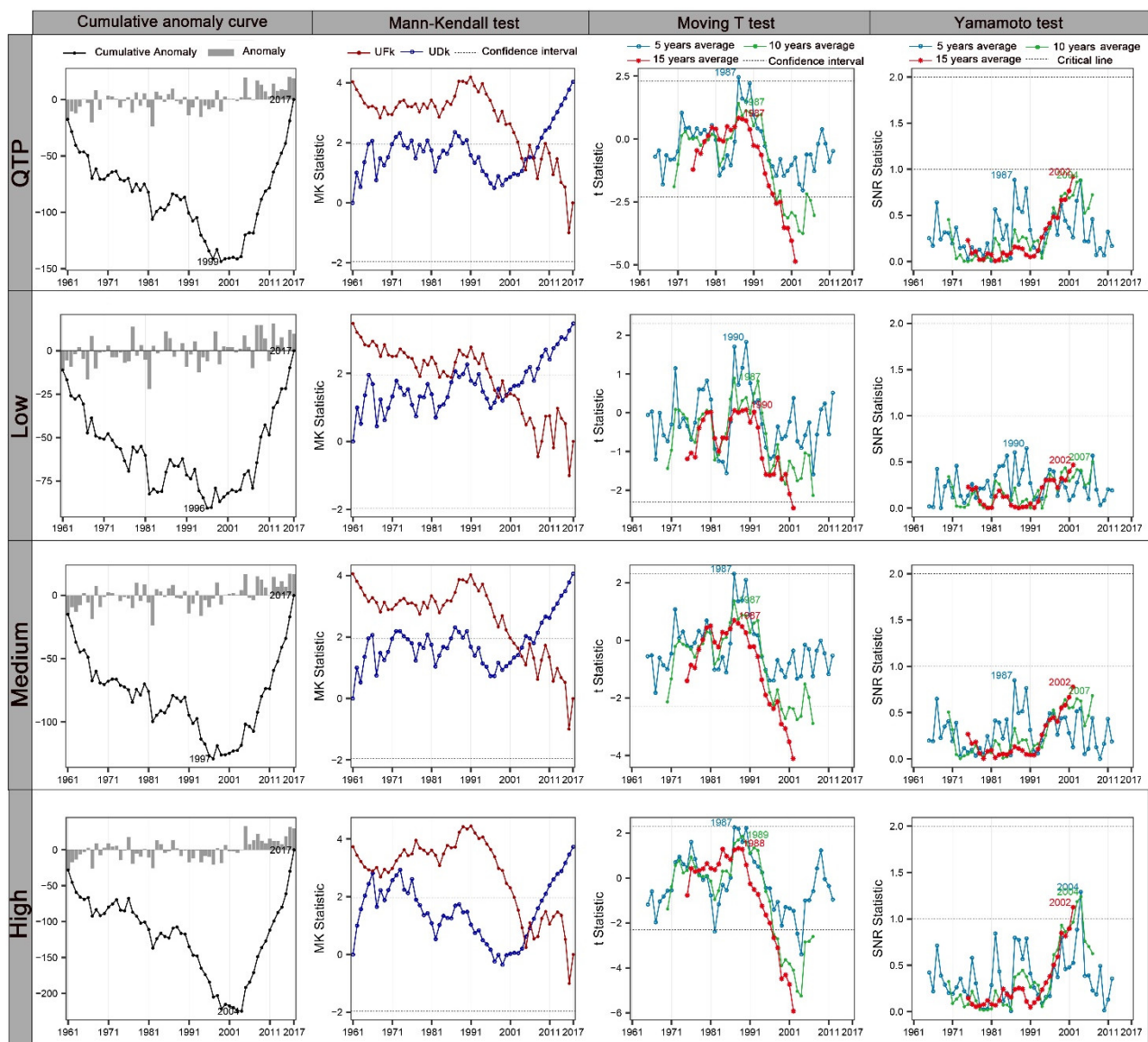


Figure S4. The results of mutation analysis of winter  $ET_0$  on different elevation zones.

**Table S2.** The mutation years for  $ET_0$  of four seasons as a result of section 3.1.2.

Region	Spring	Summer	Autumn	Winter
QTP	1981(-);2005(+)	1991(-);2005(+)	1987(-)	No mutation
Low	1981(-);2005(+)	1981(-);2005(+)	1994(-)	No mutation
Medium	1981(-);2005(+)	1991(-);2005(+)	1987(-);2005(+)	No mutation
High	No mutation	1995(-);2005(+)	No mutation	2004(+)

<sup>a</sup>The sign (-) indicates the descending mutation in the year of mutation, and (+) is the ascending mutation.

**Table S3.** Z-values from the MK test of  $ET_0$  in four seasons in different elevation zones in different periods.

Season	Region	1961–2017	Before The First Mutation	Between Two Mutations	After The Second Mutation
Spring	QTP	0.75	2.17*	0.02	0.18
	Low	−0.58	1.20	−0.42	0.55
	Medium	0.76	1.91	0.42	−0.42
	High	1.42			
Summer	QTP	−1.01	1.43	−1.97*	0.43
	Low	−3.13	2.04*	−1.76	0.42
	Medium	−1.39	1.03	−1.42	−0.18
	High	2.04	2.43*	−2.15*	0.92
Autumn	QTP	1.15	1.37		2.24*
	Low	−2.50	−0.57		0.12
	Medium	0.80	1.50	−0.76	1.52
	High	3.01			
Winter	QTP	4.03			
	Low	3.46			
	Medium	4.05			
	High	3.72	0.04		0.88

\*Significance level of 0.05 ( $P < 0.05$ ).\*\*Significance level of 0.01 ( $P < 0.01$ ).\*\*\*Significance level of 0.001 ( $P < 0.001$ ).