**Supplementary Information for**

**Variations and sensitivity analysis of reference evapotranspiration during 2010-2019 in the Zhangye farmland oasis, Northwest China**

Miao Fang1\*

1 Northwest Institute of Eco-Environment and Resource, Chinese Academy of Sciences, Lanzhou, 730000,China

\*corresponding.author@ mfang@lzb.ac.cn

This file includes:

Supplementary Figures S1 to S7

Supplementary Tables S1 to S2

Figure S1 Monthly Meteorological factors

**Figure S1**. Multi-years mean of monthly meteorological factors.



**Figure S2**. Variations and trends of Tmax in each months during 2010-2019.



**Figure S3**. Variations and trends of Tmin in each months during 2010-2019.



**Figure S4**. Variations and trends of Tmean in each months during 2010-2019.



**Figure S5**. Variations and trends of RHU in each months during 2010-2019.



**Figure S6**. Variations and trends of WSP in each months during 2010-2019.



**Figure S7**. Variations and trends of SSD in each months during 2010-2019.

Figure S2 Yearly meteorological factors

**Figure S8**. Variations and trends of yearly meteorological factors during 2010-2019

**Table S1.** Statistics of original daily SCs derived from the two ET0 equations.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ET0 equation | original SC | Tmax | Tmin | Tavg | RHU | WSP | SSD |
| The FAO-56 Penman-Monteith formula | Max | 1.14 | 0.39 | 0.49 | -0.03 | 0.48 | 0.52 |
| Min | -0.39 | -0.37 | -0.83 | -4.33 | -0.27 | 0.00 |
| Mean | 0.40 | 0.02 | -0.04 | -0.51 | 0.22 | 0.24 |
| The Hargreaves equation | Max | 2.64 | 1.62 | 0.64 | ---- | ---- | ---- |
| Min | -1.66 | -3.57 | -4.74 | ---- | ---- | ---- |
| Mean | 0.56 | -0.14 | 0.08 | ---- | ---- | ---- |

**Table S2.** Statistics of absolute values of daily SCs derived from the two ET0 equations.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ET0 equation | Absolute SC | Tmax | Tmin | Tavg | RHU | WSP | SSD |
| The FAO-56 Penman-Monteith equation | Max | 1.14 | 0.39 | 0.83 | 4.33 | 0.48 | 0.52 |
| Min | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 |
| Mean | 0.43 | 0.10 | 0.08 | 0.51 | 0.22 | 0.24 |
| The Hargreaves equation | Max | 2.64 | 3.57 | 4.74 | ---- | ---- | ---- |
| Min | 0.00 | 0.00 | 0.00 | ---- | ---- | ---- |
| Mean | 0.60 | 0.43 | 0.52 | ---- | ---- | ---- |