A Big Earth Data Platform for Three Poles

**Qilian Mountains integrated observatory network: Dataset of Qinghai Lake integrated observatory network (an observation system of Meteorological elements gradient of Yulei station on Qinghai lake, 2021)**

1、Description

This dataset includes data recorded by the Qinghai Lake integrated observatory network obtained from an observation system of Meteorological elements gradient of Yulei station on Qinghai lake from Janurary 1 to December 31, 2021. The site (100° 29' 59.726'' E, 36° 35' 27.337'' N) was located on the Yulei Platform in Erlangjian scenic area, Qinghai Province. The elevation is 3209m. The installation heights and orientations of different sensors and measured quantities were as follows: air temperature and humidity profile (HMP155; 12 and 12.5 m above the water surface, towards north), wind speed and direction profile (windsonic; 14 m above the water surface, towards north) , rain gauge (TE525M; 10m above the water surface in the eastern part of the Yulei platform ), four-component radiometer (NR01; 10 m above the water surface, towards south), one infrared temperature sensors (SI-111; 10 m above the water surface, towards south, vertically downward), photosynthetically active radiation (LI190SB; 10 m above the water surface, towards south), water temperature profile (109, -0.2, -0.5, -1.0, -2.0, and -3.0 m).
The observations included the following: air temperature and humidity (Ta\_12 m, Ta\_12.5 m; RH\_12 m, RH\_12.5 m) (℃ and %, respectively), wind speed (Ws\_14 m) (m/s), wind direction (WD\_14 m) (°) , precipitation (rain) (mm), four-component radiation (DR, incoming shortwave radiation; UR, outgoing shortwave radiation; DLR\_Cor, incoming longwave radiation; ULR\_Cor, outgoing longwave radiation; Rn, net radiation) (W/m^2), infrared temperature (IRT\_1) (℃), photosynthetically active radiation (PAR) (μmol/ (s m-2)), water temperature (Tw\_20cm、Tw\_50cm、Tw\_100cm、Tw\_200cm、Tw\_300cm) (℃).
The data processing and quality control steps were as follows: (1) The AWS data were averaged over intervals of 10 min for a total of 144 records per day. As the lake water freezes in winter, the water temperature probe is withdrawn, so there is no water temperature data record during October 19, 2020 to December 31, 2020. The missing data were denoted by -6999. (2) Data in duplicate records were rejected. (3) Unphysical data were rejected. (4) The data marked in red are problematic data. (5) The format of the date and time was unified, and the date and time were collected in the same column, for example, date and time: 2018-1-1 10:30. Moreover, suspicious data were marked in red.

2、Keywords

Theme：Precipitation,Surface Water,Lake surface temperature,Precipitation
Discipline：Atmosphere,Terrestrial Surface
Places：Qinghai Lake Basin
Time：2021

3、Data details

1.Scale：None

2.Projection：None

3.Filesize：5.1MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：36.59 | - |
| west：100.5 | - | east：100.5 |
| - | south：36.59 | - |

5、Time frame:2020-12-31 16:00:00+00:00--2021-12-30 16:00:00+00:00

6、Reference method

References to data:

Li Xiaoyan. Qilian Mountains integrated observatory network: Dataset of Qinghai Lake integrated observatory network (an observation system of Meteorological elements gradient of Yulei station on Qinghai lake, 2021). A Big Earth Data Platform for Three Poles, doi:10.11888/Atmos.tpdc.2726852022

References to articles:

Li, X.Y., Yang, X.F., Ma, Y.J., Hu, G.R., Hu, X., Wu, X.C., Wang, P., Huang, Y.M., Cui, B.L., & Wei, J.Q. (2018). Qinghai Lake Basin Critical Zone Observatory on the Qinghai-Tibet Plateau. Vadose Zone Journal, 17(1).

Li, X.Y., Ma, Y.J., Huang, Y.M., Hu, X., Wu, X.C., Wang, P., Li, G.Y., Zhang, S.Y., Wu, H.W., Jiang, Z.Y., Cui, B.L., & Liu, L. (2016). Evaporation and surface energy budget over the largest high-altitude saline lake on the Qinghai-Tibet Plateau. Journal of Geophysical Research: Atmospheres, 121(18), 10470-10485.

7、Supporting project information

Pan-Third Pole Environment Study for a Green Silk Road-A CAS Strategic Priority A Program
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8、Data resource provider

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