A Big Earth Data Platform for Three Poles

**Data set of solar radiation at Qomolangma, China (2007-2020)**

1、Description

Global solar radiation at Qomolangma station (The Tibetan Plateau) is measured by radiation sensor (pyranometers CM22, Kipp & Zonen Inc., The Netherlands), and water vapor pressure (hPa) at the ground is measured by HMP45C-GM (Vaisala Inc., Vantaa, Finland). This dataset includes hourly solar radiation and its absorbing and scattering losses caused by the absorbing and scattering atmospheric substances (MJ m-2, 200-3600 nm), and the albedos at the top of the atmosphere and the surface. The above solar radiations are calculated by using an empirical model of global solar radiation (Bai, J.; Zong, X.; Ma, Y.; Wang, B.; Zhao, C.; Yang, Y.; Guang, J.; Cong, Z.; Li, K.; Song, T. 2022. Long-Term Variations in Global Solar Radiation and Its Interaction with Atmospheric Substances at Qomolangma. Int. J. Environ. Res. Public Health, 19, 8906. https://doi.org/10.3390/ijerph19158906). The observed global solar radiation and meteorological variables are available at https://data.tpdc.ac.cn/zh-hans/data/b9ab35b2-81fb-4330-925f-4d9860ac47c3/. The data set can be used to study solar radiation and its attenuation at Qomolangma region.

2、Keywords

Theme：albedos at the top of the atmosphere,Antarctic,Glacier remote sensing,Remote Sensing Product,Cryosphere remote sensing products,Surface Freeze-thaw Cycle/state Remote Sensing,Remote Sensing Technology,empirical model,scattering atmospheric,Atmosphere Remote Sensing,radiation sensor,water vapor pressure,Glacier(Ice Sheet)  
Discipline：Atmosphere,Remote Sensing Technology,Cryosphere  
Places：Qomolangma  
Time：2007 to 2020

3、Data details

1.Scale：None

2.Projection：

3.Filesize：15.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：28.21 | - |
| west：93.44 | - | east：86.56 |
| - | south：61.79 | - |

5、Time frame:2006-12-31 16:00:00+00:00--2020-12-30 16:00:00+00:00

6、Reference method

References to data:

BAI Jianhui. Data set of solar radiation at Qomolangma, China (2007-2020). A Big Earth Data Platform for Three Poles, doi:10.11888/Atmos.tpdc.2727492022

References to articles:

Bai, J., Zong, X., Ma, Y., Wang, B., Zhao, C., Yang, Y., Guang, J., Cong, Z., Li, K., & Song, T. (2022). Long-Term Variations in Global Solar Radiation and Its Interaction with Atmospheric Substances at Qomolangma. Int. J. Environ. Res. Public Health, 19, 8906. https://doi.org/10.3390/ijerph19158906

7、Supporting project information

CASEarth:Big Earth Data for Three Poles（grant No. XDA19070000）

8、Data resource provider

name: BAI Jianhui  
unit: Institute of Atmospheric Physics,Chines Academy of Sciences  
email: bjh@mail.iap.ac.cn