**南极太阳辐射数据说明**

南极Dome C太阳辐射数据集 (2006-2016)

Data set of solar radiation at Dome C, Antarctic (2006-2016)

Dome C (75o06’S, 123o21’E, 3233 m)

January 2006 to December 2016

太阳总辐射和散射采用辐射表(CM22, Kipp & Zonen, 荷兰)测量，波长范围200-3600 nm。温湿度数据来源于IPEV/PNRA 项目 “Routine Meteorological Observation at Station Concordia” ，http://www.climantartide.it，地面水汽压单位为hPa。本数据集包括：利用经验模型计算的地面太阳总辐射、损失于大气中的吸收和散射辐射（小时累计值，单位MJ/m2）、大气顶和地表反照率；还包括散射因子（S/G）地面水汽压（E，单位hPa）。太阳辐射数据来源于数据提供者的计算、实验站测量，数据覆盖时间为2006-2016年（Bai, J.; Zong, X.; Lanconelli, C.; Lupi, A.; Driemel, A.; Vitale, V.; Li, K.; Song, T. 2022. Long-Term Variations of Global Solar Radiation and Its Potential Effects at Dome C (Antarctica). *Int. J. Environ. Res. Public Health,* *19*, 3084. https://doi.org/10.3390/ijerph19053084）。该数据集可以用于南极Dome C地区太阳辐射及其衰减等相关研究。地面太阳辐射和其他气象数据可以参考：https://doi.org/10.1594/PANGAEA.935421。

Global solar radiation and diffuse horizontal solar radiation at Dome C (Antarctica) are measured by radiation sensors (pyranometers CM22, Kipp & Zonen Inc., The Netherlands), and water vapor pressure (hPa) at the ground are obtained from the IPEV/PNRA Project “Routine Meteorological Observation at Station Concordia”, http://www.climantartide.it. 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.; Lanconelli, C.; Lupi, A.; Driemel, A.; Vitale, V.; Li, K.; Song, T. 2022. Long-Term Variations of Global Solar Radiation and Its Potential Effects at Dome C (Antarctica). *Int. J. Environ. Res. Public Health,* *19*, 3084. https://doi.org/10.3390/ijerph19053084). The observed global solar radiation and meteorological parameters are available at https://doi.org/10.1594/PANGAEA.935421. The data set can be used to study solar radiation and its attenuation at Dome C, Antarctica.

数据文件名：Dome SR 2006001.txt、Dome SR 2006001.xlsx , 其中Dome 为站名，SR为太阳辐射，yyyy代表年，mm、dd代表月日，hh:mm代表小时:分钟。数据包括小时（即60分钟）的累计值，单位为MJ m-2，包含地面太阳总辐射(G)、损失于大气中的吸收和散射辐射（受吸收性物质和散射性物质衰减）(GLA, GLS)。