A Big Earth Data Platform for Three Poles

**Aerosol Optical Property Dataset of Tibetan Plateau by ground-based observation (2021)**

1、Description

The ground-based observation dataset of aerosol optical properties over the Tibetan Plateau was obtained by continuous observation with a Cimel 318 sunphotometer, involving two stations: Qomolangma Station and Nam Co Station. These products have taken the process of cloud detection. The data cover the period from January 1, 2021 to December 31, 2021, and the time resolution is daily. The sunphotometer has eight observation channels from visible light to near infrared, and the central wavelengths are 340, 380, 440, 500, 670, 870, 940 and 1120 nm, respectively. The field of view angle of the instrument is 1.2°, and the sun tracking accuracy is 0.1°. Six bands of aerosol optical thickness can be obtained from direct solar radiation, and the accuracy is estimated to be 0.01-0.02. Finally, AERONET unified inversion algorithm was used to obtain the aerosol optical thickness, Ångström index, aerosol particle size distribution, single scattering albedo, phase function, complex refraction index and asymmetry factor.

2、Keywords

Theme：Others,Aerosol mass concentration,Atmospheric Quality,Ångström Index,Others,Aerosol,AERONET,Radiative forcing,size distribution,Aerosol optical depth/Thickness,Ground-based observation,Tibetan Plateau,Climatic effects
Discipline：Atmosphere,Others,Cryosphere
Places：Qomolangma, Nam Co, Tietan Plateau
Time：2021

3、Data details

1.Scale：None

2.Projection：

3.Filesize：0.06MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：30.77252 | - |
| west：86.94806 | - | east：90.96245 |
| - | south：28.365 | - |

5、Time frame:2020-12-31 16:00:00+00:00--2022-12-30 16:00:00+00:00

6、Reference method

References to data:

CONG Zhiyuan. Aerosol Optical Property Dataset of Tibetan Plateau by ground-based observation (2021). A Big Earth Data Platform for Three Poles, doi:10.11888/Atmos.tpdc.2728782022

References to articles:

Cong, Z.Y., Kang, S.C., Smirnov, A., & Holben, B. (2009). Aerosol optical properties at Nam Co, a remote site in central Tibetan Plateau. Atmospheric Research, 92, 42-48.

7、Supporting project information

8、Data resource provider

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