A Big Earth Data Platform for Three Poles

**Aerosol optical property dataset of the Tibetan Plateau by ground-based observation (2009-2016)**

1、Description

The measurement data of the sun spectrophotometer can be directly used to perform inversion on the optical thickness of the non-water vapor channel, Rayleigh scattering, aerosol optical thickness, and moisture content of the atmospheric air column (using the measurement data at 936 nm of the water vapor channel). The aerosol optical property data set of the Tibetan Plateau by ground-based observations was obtained by adopting the Cimel 318 sun photometer, and both the Mt. Qomolangma and Namco stations were involved. The temporal coverage of the data is from 2009 to 2016, and the temporal resolution is one day. The sun photometer has eight observation channels from visible light to near infrared. The center wavelengths are 340, 380, 440, 500, 670, 870, 940 and 1120 nm. The field angle of the instrument is 1.2°, and the sun tracking accuracy is 0.1°. According to the direct solar radiation, the aerosol optical thickness of 6 bands can be obtained, and the estimated accuracy is 0.01 to 0.02. Finally, the AERONET unified inversion algorithm was used to obtain aerosol optical thickness, Angstrom index, particle size spectrum, single scattering albedo, phase function, birefringence index, asymmetry factor, etc.

2、Keywords

Theme：Radiation,Aerosol,Remote Sensing Technology,Solar radiation,Aerosol optical depth/Thickness,Solar spectrophotometer,Atmospheric Water Vapor
Discipline：Atmosphere,Remote Sensing Technology
Places：Tibetan Plateau , Namco, Mt. Qomolangma
Time：2009-2016

3、Data details

1.Scale：None

2.Projection：

3.Filesize：11.0MB

4.Data format：txt

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：31.0 | - |
| west：86.0 | - | east：91.0 |
| - | south：28.0 | - |

5、Time frame:2009-01-07 08:00:00+00:00--2017-01-06 08:00:00+00:00

6、Reference method

References to data:

CONG Zhiyuan. Aerosol optical property dataset of the Tibetan Plateau by ground-based observation (2009-2016). A Big Earth Data Platform for Three Poles, doi:10.11888/AtmosPhys.tpe.00000037.file2018

References to articles:

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

7、Supporting project information

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

8、Data resource provider

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