A Big Earth Data Platform for Three Poles

**SRAP AOD dataset of Asia (2002-2011)**

1、Description

The “China Collection 1.0" aerosol optical depth (AOD) data set was produced using visible light wave remote sensing inversion. The raw data come from the MODIS sensors on Terra and Aqua. The temporal coverage of the data is from 2002 to 2011, the temporal resolution is daily, the spatial coverage is the Asian continent, and the spatial resolution is 0.1°. The remote sensing inversion method uses the independently developed SRAP algorithm to invert the aerosol optical depth over the land. The algorithm takes the BRDF characteristics of the surface into consideration, which makes it applicable to aerosol optical depth inversion on bright and dark surfaces. In addition, aerosol products over the ocean of MOD04/MYD04 are superimposed. The verification of the measured site shows that the relative deviation of the aerosol optical depth data in Asia is within 20%. The data are stored as an hdf file each day, each consisting of Terra AOD and Aqua AOD at 550 nm.

2、Keywords

Theme：光学厚度, 气溶胶
Discipline：Physical geography
Places：Asian Continent
Time：2002-2011

3、Data details

1.Scale：None

2.Projection：

3.Filesize：3000.0MB

4.Data format：hdf

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：60.0 | - |
| west：35.0 | - | east：150.0 |
| - | south：15.0 | - |

5、Time frame:2002-01-09 08:00:00+00:00--2012-01-08 08:00:00+00:00

6、Reference method

References to data:

XUE Yong. SRAP AOD dataset of Asia (2002-2011). A Big Earth Data Platform for Three Poles, doi:10.11888/AtmosEnviron.tpe.00000031.file2018

References to articles:

Xue, Y., He, X.W., Xu, H., Guang, J., Guo, J.P., &Mei, L.L. (2014). China Collection 2.0: The Aerosol Optical Depth Dataset from the Synergetic Retrieval of Aerosol Properties Algorithm. Atmospheric Environment, 95, 45-58.

Guang, J., Xue, Y., Li, Y.J., Liang, S.L., Mei, L.L., &Xu, H. (2012). Retrieval of Aerosol Optical Depth over Bright Land Surfaces by Coupling Bidirectional Reflectance Distribution Function Model and Aerosol Retrieval Model. Remote Sensing Letter, 3 (7), 577-584.

Tang, J.K., Xue, Y., Yu, T., &Guan, Y.N. (2005). Aerosol Optical Thickness Determination by Exploiting the Synergy of TERRA and AQUA MODIS (SYNTAM). Remote Sensing of Environment, 94(3), 327-334.

7、Supporting project information

8、Data resource provider

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