A Big Earth Data Platform for Three Poles

**WATER: Dataset of sun photometer observations in the Binggou watershed foci experimental areas from Mar. 15 to Apr. 2, 2008**

1、Description

The dataset of sun photometer observations was obtained in the Binggou watershed foci experimental areas (N38°04′1.4″/E100°13′15.6″, 3414.41m) from Mar. 15 to Apr. 2, 2008 (to be specific, the daytime of 15-03-2008, 16-03-2008, 17-03-2008, 18-03-2008, 19-03-2008, 21-03-2008, 22-03-2008, 23-03-2008, 24-03-2008, 25-03-2008, 26-03-2008 and 27-03-2008). Those provide reliable data for retrieval of optical depth, Rayleigh scattering, aerosol optical depth, column water vapor (through data in 936 nm) and with various parameters in 550nm, the horizontal visibility can be further developed by MODTRAN or 6S.  
 The optical depth in 1640nm, 1020nm, 936nm, 870nm, 670nm, 550nm, 440nm, 380nm and 340nm were all acquired. Those data include the raw data in .k7 and can be opened by ASTPWin. ReadMe.txt is attached for detail. Processed data (after retrieval of the raw data) in Excel format are on optical depth, Rayleigh scattering, aerosol optical depth, the horizontal visibility, the near surface air temperature, the solar azimuth, zenith, solar distance correlation factors, and air column mass number.   
 Accuracy of CE318 could be influenced by local air pressure, instrument calibration parameters, and convertion factors.   
 (1) Most air pressure was derived from elevation-related empirical method, which was not reliable. For more accurate result, simultaneous data from the weather station are needed.  
 (2) Errors in instrument calibration parameters need correcting. Thus field calibration based on Langly or interior instrument calibration in the standard light is required.  
 (3) Convertion factors for retrieval of aerosol optical depth and the water vapor of the water vapor channel were also from the empirical method, and need further validation.   
 Raw data were archived in .k7 format and can be opened by ASTPWin. ReadMe.txt is attached for detail. Preprocessed data (after retrieval of the raw data) in Excel format are on optical depth, Rayleigh scattering, aerosol optical depth, the horizontal visibility, the near surface air temperature, the solar azimuth, zenith, solar distance correlation factors, and air column mass number. Langley was used for the instrument calibration.  
 Two subfolders including raw data and processed data (Geometric Positions and the Total Optical Depth of Each Channel and Rayleigh Scattering and Aerosol Optical Depth of Each Channel), and three data files (Directions on Data Observations, Raw Data and Proprocessed Data) were archived.

2、Keywords

Theme：Optical depth/Thickness,Radiation,Aerosol,Scattering  
Discipline：Atmosphere  
Places：Heihe River Basin, Zhangye City Foci Experimental Area, the cold region hydrology experimental area in the upper reaches, ice-channel watershed encryption observation area  
Time：2008,

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：1.98MB

4.Data format：

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：38.18839 | - |
| west：100.096381 | - | east：100.286566 |
| - | south：38.01113 | - |

5、Time frame:2008-03-25 00:00:00+00:00--2008-04-12 00:00:00+00:00

6、Reference method

References to data:

LIU Qinhuo, SU Gaoli. WATER: Dataset of sun photometer observations in the Binggou watershed foci experimental areas from Mar. 15 to Apr. 2, 2008. A Big Earth Data Platform for Three Poles, doi:10.3972/water973.0095.db2013

References to articles:

7、Supporting project information

The CAS (Chinese Academy of Sciences) Action Plan for West Development Project  
National Program on Key Basic Research Project (973 Program

8、Data resource provider

name: LIU Qinhuo  
unit: State Key Laboratory of Remote Sensing Science, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences  
email: qhliu@irsa.ac.cn  
  
name: SU Gaoli  
unit:   
email: