A Big Earth Data Platform for Three Poles

**Monthly mean sunshine duration for the period in the Heihe River Basin (1961-2010)**

1、Description

Based on the data of 21 regular meteorological observation stations in Heihe River Basin and its surrounding areas and 13 national benchmark stations around Heihe River provided by the data management center of Heihe plan, the daily sunshine hours are statistically sorted out and the monthly sunshine hours data of 1961-2010 for many years are calculated. The spatial stability analysis is carried out to calculate the variation coefficient. If the variation coefficient is greater than 100%, the geographical weighted regression is used to calculate the relationship between the station and the geographical terrain factors, and the monthly sunshine hours distribution trend is obtained; if the variation coefficient is less than or equal to 100%, the ordinary least square regression is used to calculate the sunshine hours and the geographical terrain factors (longitude, latitude, elevation, slope, aspect, etc.) of the station ）The distribution trend of sunshine hours per month is obtained, and the residuals after removing the trend are fitted and corrected by HASM (high accuracy surface modeling method). Finally, the monthly average sunshine hours distribution of the Heihe River Basin in 1961-2010 is obtained by adding the trend surface results and the residual correction results. Time resolution: monthly average sunshine hours for many years from 1961 to 2010. Spatial resolution: 500M.

2、Keywords

Theme：Sunshine
Discipline：Atmosphere
Places：Heihe River Basin
Time：1961-2010

3、Data details

1.Scale：None

2.Projection：None

3.Filesize：12.0MB

4.Data format：img

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：42.0 | - |
| west：98.0 | - | east：101.5 |
| - | south：38.0 | - |

5、Time frame:1961-07-10 16:03:00+00:00--2011-07-09 16:03:00+00:00

6、Reference method

References to data:

ZHAO Na, YUE Tianxiang. Monthly mean sunshine duration for the period in the Heihe River Basin (1961-2010). A Big Earth Data Platform for Three Poles, doi:10.11888/Meteoro.tpdc.2705642017

References to articles:

TianXiang Yue. 2011. Surface Modelling: High Accuracy and High Speed Methods. New York: CRC Press (Taylor & Francis group)

7、Supporting project information

8、Data resource provider

name: YUE Tianxiang
unit: Institute of Geographic Sciences and Natural Resources Research,Chinese Academy of Sciences
email: yue@lreis.ac.cn

name: ZHAO Na
unit:
email: zhaon@lreis.ac.cn