A Big Earth Data Platform for Three Poles

**Monthly mean temperature for the period (1961-2010)**

1、Description

Based on the data information 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 air temperature is statistically sorted out, and the monthly air temperature data of 1961-2010 for many years is calculated, and the spatial stability analysis is carried out to calculate the coefficient of variation. If the coefficient of variation is greater than 100%, then Calculate the relationship between the station and geographical terrain factors by geographical weighted regression, and get the monthly temperature distribution trend; if the coefficient of variation is less than or equal to 100%, calculate the relationship between the station temperature value and geographical terrain factors (longitude, latitude, elevation) by ordinary least square regression, and get the monthly temperature distribution trend; use HASM (high accuracy surface modeling) for the residual after removing the trend Method). Finally, the monthly average temperature distribution of the Heihe River Basin in 1961-2010 is obtained by adding the trend surface results and the residual correction results. Time resolution: average monthly temperature for many years from 1961 to 2010. Spatial resolution: 500M.

2、Keywords

Theme：Temperature,Air temperature
Discipline：Atmosphere
Places：Heihe River Basin
Time：1961-2010

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：70.0MB

4.Data format：栅格

4、Space scope

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

5、Time frame:1961-07-09 11:24:00+00:00--2011-07-08 11:25:00+00:00

6、Reference method

References to data:

ZHAO Na, YUE Tianxiang. Monthly mean temperature for the period (1961-2010). A Big Earth Data Platform for Three Poles, doi:10.3972/heihe.0034.2019.db2016

References to articles:

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

Na Zhao, Tiangxiang Yue, Mingwei Zhao, Zhengping Du, Zemeng Fan, Chuanfa Chen. Sensitivity studies of a high accuracy surface modeling method. SCIENCE CHINA Earth Sciences. 2014, 57(1):1-11.

Zhao N, Yue TX ,2014. A modification of HASM for interpolating precipitation in China. Theor Appl Climatol, 116: 273-285.

Yue TX, Zhao N, Ramsey RD, Wang CL, Fan ZM, Chen CF, Lu YM, Li BL (2013) .Climate change trend in China, with improved accuracy. Clim Change 120:137-151

Zhao, N. , Yue, T. X. , Zhou, X. , Zhao, M. W. , Liu, Y. , Du, Z. P., & Zhang, L. L. (2017). Statistical downscaling of precipitation using local regression and high accuracy surface modeling method. Theoretical and Applied Climatology, 1: 1-12.

7、Supporting project information

8、Data resource provider

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