Temporal and Spatial Data of China's Temperature from 1957 to 1990

Data Documentation

I. Dataset content features

i. Abstract

The datasets were the Chinese temperature data from 1957~1990, including monthly mean temperature, mean minimum temperature, mean maximum temperature and average minimum temperature. There were 455 data files in ArcGIS GRID format. The data is processed by the Institute of Geographic Sciences and Natural Resources Research of the Chinese Academy of Sciences and can be used for scientific research, teaching, and government decision-making.

ii. Elements (content fields)

The datasets were named as "AAAA_BBYYYYyMM", in which "AAAA"means the data ID number, "BB"means the data type, "YYYY" means the year and "MM" means the month.

iii. Temporal cover

Time of the dataset ranged from 1957 to 1990.

iv. Spatial cover

The datasets cover all of China.

II. Subject/industry scope of dataset/atlas

i. Subject scope

Earth Science, Meteorology, Remote Sensing, Resources & Environmental.

ii. Industry scope

Meteorological services and environmental monitoring.

iii. Other classifications (optional)

III. Accuracy of dataset/atlas

i. Time frequency

Monthly; Yearly

ii. Spatial reference, accuracy, and granularity

No spatial reference. The datasets are divided by 0.1°C or 2°C.

IV. Dataset/atlas storage management

i. Data quantity

The volume of the dataset is 1171 MB.

ii. Type format

The dataset is stored in hard disk with a format of ArcGIS GRIS.

iii. Update management

Unscheduled update.

V. Quality control of the dataset/atlas

i. Data sources (condition selection)

ii. Methods of the data acquisition and processing (condition selection)

The data was processed through correction, clip, and index calculations to get the temporal and spatial data of temperature in China. Data processing software includes ArcGIS and ENVI. Firstly, a regression equation is established by multiple regression analysis using temperature data from multiple weather stations in China and latitude and longitude and altitude data. The monthly average temperature of each grid is calculated using this regression equation. Then, the actual temperature value of each

weather station is subtracted from the theoretical air temperature value of the weather station to obtain the temperature residual of each weather station. The inverse distance weighting method is used to extend the temperature residual from the area where the weather station is located to other regions. Finally, the above results are added to get the rasterized temperature data.

VI. Sharing and usage method of the dataset/atlas

i.Sharing methods and restrictions

Full and open sharing.

ii.Contact information of the sharing service (condition selection)

Online link address:

Contact Information for Service：

Name: Yuan Yuelei

Address：11A, Datun Road, Chaoyang District, Beijing, 100101, China, Institute of Geographic Sciences and Natural Resources Research, CAS.

Zip Code：100101

E-mail: wdc-rre@lreis.ac.cn

iii.Conditions and methods of usage

The dataset can be read by ArcGIS software.

VII. Intellectual property rights of the dataset/atlas

i.Property rights (optional)

Intellectual property of the dataset belonged to Institute of Geographic Sciences and Natural Resources Research, CAS.

ii.Reference method of the dataset/atlas

Temporal and Spatial Data of China's Temperature from 1957 to 1990.Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences

iii.Usage contacts of the datasets/atlas

Name: Yuan Yuelei

Address：11A, Datun Road, Chaoyang District, Beijing, 100101, China, Institute of Geographic Sciences and Natural Resources Research, CAS.

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VIII.   Others (optional)

In addition to the above, other information must also be explained.

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