

Dataset of spring sandstorm distribution in the Mongolian Plateau from 2000 to 2021

Data Documentation

I. Dataset/atlas content features

i. Abstract

The Mongolian Plateau is one of the cradles of many sandstorms in Asia, among which the Gobi region of Mongolia and the desert region of western Inner Mongolia are closely related to the frequent sandstorm events in China and Mongolia in recent years. Based on this study first text mining data, statistical sandstorm events in the Mongolian plateau in 2000-2021, download MODIS data corresponding space and time area, combined with cloud volume and other data screening, after the MRTK plugin MODIS data geometric correction, build dust index DSDI, extract dust spatial distribution information, get the Mongolian plateau sandstorm distribution data set. Combined with the Arcgis software to randomly select the verification points, combined with the station record, text data, image enhancement, visual interpretation, so as to complete the accuracy evaluation, The overall classification accuracy reached 85.24%, and had a Kappa coefficient of 0.7636. This data set directly reflects the spatial distribution of sandstorms in Mongolian Plateau, which can provide detailed and reliable data support for the control of sandstorm disasters. At the same time, it can also provide decision support for controlling the risk of sandstorm disaster in the Mongolian Plateau.

ii. Elements (content fields)

The data named in the file is DSDI- ** - ** - ** .shp.**-**-** It represents the date of the sandstorm. Vector range is the scope of sandstorm occurrence.

iii. Temporal cover

2000 - 2021

iv. Spatial cover

44'~126° 04'E, 37° 24'~53° 23'N

II. Subject/industry scope of dataset/atlas

i. Subject scope

Earth science, remote sensing, etc.

ii. Industry scope

Geographical information services, remote sensing surveying and mapping services, etc.;

iii. Other classifications (optional)

III. Accuracy of dataset/atlas

i. Time frequency

Annual.

ii. Spatial reference, accuracy, and granularity

Spatial reference: GCS_WGS_1984;

Spatial resolution: 1km.

IV. Dataset/atlas storage management

i. Data quantity

14.5MB

ii. Type format

SHP

iii. Update management

Irregular updating

V. Quality control of the dataset/atlas

i. Production mode

Using MODIS data, combined with cloud volume and other data, the data were screened and processed with MRTK plug-in to correct MODIS data in ENVI software, constructed dust index DSDI, extracted dust spatial distribution information, and obtained the data set of sandstorm distribution in Mongolian Plateau.

ii. Data sources (condition selection)

MODIS L1B Data

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

Based on text mining data, statistical arrangement of the Mongolian plateau 2000-2021 years of sandstorm events, download the corresponding space and space area of MODIS data, combined with cloud data screening processing, in ENVI software using MRTK plug-in to MODIS data geometry correction pretreatment, build the dust index DSDI, extract the dust spatial distribution information, get the Mongolian plateau sandstorm distribution data set. Combined with Arcgis software to randomly select verification points, combined with station recording, text data, image enhancement, visual interpretation to obtain the true value of verification points, so as to complete the accuracy evaluation,

VI. Sharing and usage method of the dataset/atlas

i. Sharing methods and restrictions

Fully opened sharing

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

Online link address:

Contact Information for Service:

Name: Service group of Disaster Risk Reduction Knowledge Service System of IKCEST

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

Zip Code: 100101

E-mail: ikcest-drr@lreis.ac.cn

iii. Conditions and methods of usage

The dataset can be read by ArcGIS and ENVI software.

VII. Intellectual property rights of the dataset/atlas

i. Property rights (optional)

The property of the dataset belongs to the Institute of Geographic Sciences and Resources, Chinese Academy of Sciences.

ii. Reference method of the dataset/atlas

Dataset of spring sandstorm distribution in the Mongolian Plateau from 2000 to 2021. Disaster Risk Reduction Knowledge Service of International Knowledge Centre for Engineering Sciences and Technology (IKCEST) under the Auspices of UNESCO, 2023.01

iii. Usage contacts of the datasets/atlas

Name: Service group of Disaster Risk Reduction Knowledge Service System of IKCEST

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

Zip Code: 100101

E-mail: ikcest-drr@lreis.ac.cn

VIII. Others (optional)

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

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