A Big Earth Data Platform for Three Poles

**Digital elevation model of SRTM in the Yellow river upstream (2000)**

1、Description

Ⅰ. Overview
The SRTM (Space Shuttle Radar Topographic Mapping Mission) was performed by NASA, the Geospatial Intelligence Agency, and German and Italian space agencies in February 2002. A total of 222 hours and 23 minutes of data collection was performed by the US space shuttle Endeavour onboard the SRTM system, and 9.8 trillion bytes of radar images were collected between 60 degrees in North America and 56 degrees in south latitude with an area of ​​more than 119 million km2 Data, Fei changed more than 80% of the earth's surface, this data set covers the entire territory of China. It took two years to process, and finally obtained a global digital elevation model (DEM) with a plane longitude of ± 20m and an elevation longitude of ± 16m.
Ⅱ. Data processing description
The processing of SRTM data is done by the Ground Data Processing System (GDPS). The GDPS consists of three parts: (1) an interferometric processor, which uses the interferometric processor to convert the data into elevation maps and radar image bands; (2) a mosaic processor, which is used to compile collected global airborne data Draw a mosaic map of continental elevation data and images; (3) Verification system is responsible for checking the quality of the mosaic map and providing accuracy maps. These processors are currently installed on JPL workstations, and the next step is to install them on a set of supercomputers for the systematic processing of real SRTM data. As this work progresses, JPL will release auxiliary data to the work.
Ⅲ. Data content description
SRTM data provides a file for each latitude and longitude grid. There are two types of longitude: 1 arc-second and 3 arc-second. Called SRTM1 and SRTM3, or 30m and 90m data. This dataset uses SRTM3 data with 90m resolution. Each file contains elevation data of 1201 × 1201 sampling points. The data format is DEM format. The spatial position of each picture frame is shown in the attached picture (1-25 thousand pictures in the country).
Ⅳ. Data usage description
SRTM data has computable and visual functions, and has broad application prospects in various fields, especially in the fields of surveying and mapping, surface deformation, and military. Specifically, it mainly includes the following aspects:
In scientific research, SRTM data plays a very important role in geology, geophysics, seismic research, level modeling, volcano monitoring, and registration of remote sensing images. Using high-precision digital terrain elevation data to build a three-dimensional three-dimensional model of the ground, which is superimposed on the ground image, can observe slight changes in the earth's surface.
In civil and industrial applications, SRTM data can be used for civil engineering calculations, reservoir dam site selection, land use planning, etc. In terms of communications, digital terrain data can help businesses build better broadcast towers and determine the best In terms of aviation safety, the use of SRTM digital elevation data can establish an enhanced aircraft landing alarm system, which greatly improves the aircraft landing safety factor.
In the military, SRTM data is the basic information platform of C4ISR (Army Automatic Command System). It is necessary to study the structure of the battlefield, the direction of the battlefield, the presetting of the battlefield, the deployment of operations, the concentration of forces in the delivery, the protection conditions, and logistics support Essential.

2、Keywords

Theme：Digital elevation model,Topography
Discipline：Terrestrial Surface
Places：The upstream of the Yellow River
Time：2000

3、Data details

1.Scale：None

2.Projection：None

3.Filesize：101.0MB

4.Data format：GeoTIFF

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：42.0 | - |
| west：95.0 | - | east：112.0 |
| - | south：32.0 | - |

5、Time frame:2000-07-07 10:27:00+00:00--2000-07-08 09:55:00+00:00

6、Reference method

References to data:

XUE Xian, DU Heqiang. Digital elevation model of SRTM in the Yellow river upstream (2000). A Big Earth Data Platform for Three Poles, 2015

References to articles:

7、Supporting project information

8、Data resource provider

name: XUE Xian
unit:
email: xianxue@lzb.ac.cn

name: DU Heqiang
unit:
email: dilikexue119@163.com