A Big Earth Data Platform for Three Poles

**Elevation dataset of ASTER\_DEM in the Yellow river upstream (2009)**

1、Description

Ⅰ. Overview  
This dataset is derived from the global 30m-resolution digital elevation product dataset, which is processed using the data of the first version (v1) of ASTER GDEM. Its spatial resolution is 30m. Due to the influence of clouds, lines, pits, bulges, dams or other anomalies generated by the boundary stacking, there are local anomalies in the first version of the original data of ASTER GDEM, so the digital elevation processed by ASTER GDEM v1 Data products have data anomalies in individual areas, and users need to pay attention to them during use. In addition, this data set can complement the SRTM global 90m resolution elevation dataset.  
Ⅱ. Data processing description  
ASTER GDEM is a fully automated method to process and generate ASTER archived data of 1.5 million scenes, including 1,264,118 ASTER DEM data based on independent scenes generated through stereo correlation. After de-cloud processing, residual outliers are removed, and the average value is taken as the final pixel value of ASTER GDEM object area. After correcting the remaining abnormal data, the global ASTER GDEM data was generated by 1°× 1° sharding.  
Ⅲ. Data content description  
The dataset covers the entire upper reaches of the Yellow River, and each data file name is generated based on the latitude and longitude of the lower left (southwest) Angle of the fractal geometry center. For example, the lower-left coordinate of the ASTGTM\_N40E116 file is 40 degrees north latitude and 116 degrees east longitude. ASTGTM\_N40E116\_dem and ASTGTM\_N40E116\_num correspond to digital elevation model (DEM) and quality control (QA) data, respectively.  
Ⅳ. Data usage description  
ASTER GDEM data can be calculated and visualized. It has a broad application prospect in various fields, especially in mapping, surface deformation and military fields.Specifically, it mainly includes the following aspects:  
In scientific research, ASTER GDEM data plays an important role in geology, geophysics, seismic research, horizontal modeling, volcano monitoring and remote sensing image registration.The three-dimensional model of the ground is built by using high-precision digital terrain elevation data, which can be embedded and superimposed with the image of the ground to observe subtle changes of the earth surface.  
In civil and industrial applications, ASTER GDEM data can be used for civil engineering calculation, dam site selection, land use planning, etc. In communications, digital topographic data can help businesses build better broadcast towers and determine the best location of mobile phone booths.In terms of aviation safety, ASTER GDEM digital elevation data can be used to establish the enhanced aircraft landing alarm system, which greatly improves the aircraft landing safety coefficient.  
In the military, ASTER GDEM data is the basic information platform of C4ISR (army automatic command system), which is indispensable in the study of battlefield regional structure, combat direction, battlefield preset, combat deployment, troop concentration in projection, protection conditions, logistics support and other aspects.

2、Keywords

Theme：Digital elevation model,Topography  
Discipline：Terrestrial Surface  
Places：The upstream of the Yellow River  
Time：2009

3、Data details

1.Scale：None

2.Projection：

3.Filesize：811.0MB

4.Data format：img

4、Space scope

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

5、Time frame:2009-08-03 01:45:00+00:00--2009-08-03 02:34:00+00:00

6、Reference method

References to data:

XUE Xian, DU Heqiang. Elevation dataset of ASTER\_DEM in the Yellow river upstream (2009). A Big Earth Data Platform for Three Poles, doi:10.11888/Geogra.tpdc.2709632015

References to articles:

7、Supporting project information

the National Basic Research Program of China

8、Data resource provider

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