A Big Earth Data Platform for Three Poles

**Distribution of tree height in Tianlaochi**

1、Description

According to the sample survey data, in August 2013, 30 forest plots were set up in the Tianlaochi watershed, with a plot size of 10 m×20 m. The long side of the plot was parallel to the slope of the hillside, including 26 blocks of Picea crassifolia forest. 2 blocks of Sabina Przewalsskii forest and 2 mixed forests of Picea and Sabina. In the plot, the diameter of the breast of each tree (the diameter of the trunk at a height of 1.3 m) is measured by a diameter tape, and the height of each tree and the height under the branches (the height of the first live branch at the lower end of the canopy) is measured by a hand-held ultrasonic altimeter. The north-south direction and the east-west crown width are measured with a tape measure, and the sample site is positioned by differential GPS.
The parallel version of HASM-AD algorithm is used to simulate the classified LIDAR point cloud data. DEM is generated from ground points, DSM is generated from all points, and the height of surface features is obtained by differential operation between DSM and DEM. In forest area, it is called Canopy Height Model (CHM). A circular window with a given search radius is used to find the local maximum value on CHM. If the central pixel value is the maximum value, it is determined as the crown vertex. The pixel attribute value of the tree vertex is the tree height, and the spatial resolution is 1m.

2、Keywords

Theme：Vegetation,Vegetation investigation,Forests
Discipline：Terrestrial Surface
Places：Heihe River Basin, Tianlaochi
Time：2013

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：5.0MB

4.Data format：tif

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：38.399217 | - |
| west：99.896626 | - | east：99.952784 |
| - | south：38.448703 | - |

5、Time frame:2013-01-20 08:10:00+00:00--2014-01-19 08:10:00+00:00

6、Reference method

References to data:

YUE Tianxiang. Distribution of tree height in Tianlaochi. A Big Earth Data Platform for Three Poles, doi:10.3972/heihe.0238.2016.db2016

References to articles:

王轶夫, 岳天祥, 赵明伟, 杜正平, 刘向锋, 刘爽,宋二非, 孙文正, 张彦丽. 机载LIDAR数据的树高识别算法与应用分析. 地球信息科学学报, 2014, 06:958-964.

岳天祥等. 2017. 地球表层系统模拟分析原理与方法. 北京: 科学出版社.

7、Supporting project information

8、Data resource provider

name: YUE Tianxiang
unit: Institute of Geographic Sciences and Natural Resources Research,Chinese Academy of Sciences
email: yue@lreis.ac.cn