A Big Earth Data Platform for Three Poles

**Daily snow depth simulation prediction dataset for China**

1、Description

China's daily snow depth simulation and prediction data set is the estimated daily snow depth data of China in the future based on the nex-gdpp model data set. The artificial neural network model of snow depth simulation takes the maximum temperature, minimum temperature, precipitation data and snow depth data of the day as the input layer of the model, The snow depth data of the next day is used as the target layer of the model to build the model, and then the snow depth simulation model is trained and verified by using the data of the national meteorological station. The model verification results show that the iterative space-time simulation ability of the model is good; The spatial correlations of the simulated and verified values of cumulative snow cover duration and cumulative snow depth are 0.97 and 0.87, and the temporal and spatial correlations of cumulative snow depth are 0.92 and 0.91, respectively. Based on the optimal model, this model is used to iteratively simulate the daily snow depth data in China in the future. The data set can provide data support for future snow disaster risk assessment, snow cover change research and climate change research in China. The basic information of the data is as follows: historical reference period (1986-2005) and future (2016-2065), as well as rcp4.5 and rcp8.5 scenarios and 20 climate models. Its spatial resolution is 0.25 ° \* 0.25 °. The projection mode of the data is ease GR, and the data storage format is NC format.  
The following is the data file information in NC  
Time: duration (unit: day)  
Lon = 320 matrix, 320 columns in total  
Lat = 160 matrix, 160 rows in total  
X Dimension: Xmin = 60.125; // Coordinates of the corner points of the lower left corner grid in the X direction of the matrix  
Y Dimension: Ymin = 15.125; // Coordinates of the corner points of the grid at the lower left corner of the Y-axis of the matrix

2、Keywords

Theme：Snow depth,Snow,Snowpack  
Discipline：Cryosphere  
Places：Future, daily snow depth, model simulation, China  
Time：Future, daily snow depth

3、Data details

1.Scale：None

2.Projection：

3.Filesize：8820.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：55.0 | - |
| west：60.0 | - | east：140.0 |
| - | south：15.0 | - |

5、Time frame:None--None

6、Reference method

References to data:

YANG Jianping, CHEN Hongju, DING Yongjian. Daily snow depth simulation prediction dataset for China. A Big Earth Data Platform for Three Poles, doi:10.11888/Snow.tpdc.2716362021

References to articles:

Chen, H., Yang, J., Ding, Y., He, Q., & Ji, Q. (2021). Simulation of Daily Snow Depth Data in China Based on the NEX-GDDP. Water, 13(24), 3599. doi:10.3390/w13243599

7、Supporting project information

National Key Research and Development Program of China  
the Strategic Priority Research Program of Chinese Academy of Sciences

8、Data resource provider

name: CHEN Hongju  
unit:   
email: chenhongju@nieer.ac.cn  
  
name: YANG Jianping  
unit:   
email: jianping@lzb.ac.cn.  
  
name: DING Yongjian  
unit:   
email: dyj@lzb.ac.cn