A Big Earth Data Platform for Three Poles

**Datasets for the SWAT model in Heihe Rriver Basin**

1、Description

This data includes the basic terrain data, soil data, meteorological data, land use / land cover data, etc. needed for SWAT model operation. All maps and relevant point coordinates (meteorological station, hydrological station) adopt the coordinate system of Gauss Kruger projection which is consistent with the basic topographic map of our country. Data content includes:
a) The basic topographic data include DEM and river network. The size of DEM grid is 50 \* 50m, and the drainage network is manually digitized from 1:100000 topographic map.
b) Soil data: including soil physics, soil chemistry and spatial distribution of soil types. The scale of digital soil map is 1:1 million, which is converted into grid format of ESRI, with grid size of 50 \* 50m. Each soil profile can be divided into up to 10 layers. The sampling index of soil texture required by the model adopts the American Standard. The parameters are from the second National Soil Census data and related literature.
c) Meteorological data:
(1) Temperature: the data of daily maximum temperature, daily minimum temperature, wind speed and relative humidity are from the daily observation data of Qilian, Shandan, tole, yeniugou and Zhangye meteorological stations in and around the basin, with the period from 1999 to 2001.
(2) Precipitation: the rainfall data comes from five hydrological stations in and around the basin, i.e. OBO (1990-1996), Sunan (1990-2000), Qilian (1990-2000), Yingluoxia (1990-2000), zamashk (1990-2000), Shandan (1999-2001), tole (1999-2001), yeniugou (1999-2001), Zhangye (1999-2001) and Qilian County (1999-2001) Observation data.
(3) Wind speed and relative humidity: wind speed and relative humidity come from the daily observation data of 5 meteorological stations in Shandan, tole, yeniugou, Zhangye and Qilian county. The period is from 1999 to 2001.
(4) Solar radiation: solar radiation has no corresponding observation data and is generated by model simulation.
d) Land use / land cover: 1995 land use data, scale 1:100000. Convert it to grid format of ESRI, with grid size of 50 \* 50m.
e) Meteorological data simulation tool (weather generator) database: the weather data simulation tool of SWAT model can simulate and calculate the daily meteorological input data required by the model operation according to the monthly statistical data for many years without the actual daily observation data, and can also carry out the interpolation of incomplete observation data. The meteorological data are from the surrounding meteorological stations.

2、Keywords

Theme：Hydrology,Hydrological models
Discipline：Terrestrial Surface,Others
Places：Heihe River Basin, Upper Reaches of Heihe Basin
Time：2000

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：461.93MB

4.Data format：

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：43.3 | - |
| west：96.1 | - | east：104.2 |
| - | south：37.7 | - |

5、Time frame:1990-01-20 17:00:00+00:00--2002-01-19 17:00:00+00:00

6、Reference method

References to data:

NAN Zhuotong. Datasets for the SWAT model in Heihe Rriver Basin. A Big Earth Data Platform for Three Poles, doi:10.3972/heihe.012.2013.db2013

References to articles:

李硕, 南卓铜,王书功.黑河上游SWAT模型数据集. 南京师范大学，中国科学院寒区旱区环境与工程研究所,2011. doi:10.3972/heihe.012.2013.db

7、Supporting project information

8、Data resource provider

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