A Big Earth Data Platform for Three Poles

**High resolution atmosphere-hydrologic simulation dataset over the Tibetan Plateau (2000-2010)**

1、Description

The high-resolution atmosphere-hydrologic simulation dataset over Tibetan Plateau is prepared by WRFv4.1.1 model with grids of 191 \* 355 and spatial resolution of 9 km, and a spatial range covering the entire plateau. The main physics schemes are configured with Thompson microphysics scheme, the rapid radiative transfer model (RRTM), and the Dudhia scheme for longwave and shortwave radiative flux calculations, respectively, the Mellor-Yamada-Janjic (MYJ) TKE scheme for the planetary boundary layer and the Unified Noah Land Surface Model. The time resolution is 3h and the time span is 2000-2010. Variables include: precipitation (Rain), temperature (T2) and water vapor (Q2) at 2m height on the ground, surface skin temperature (TSK), ground pressure (PSFC), zonal component (U10) and meridional component (V10) at 10m heigh on the ground, downward long-wave flux (GLW) and downward short-wave flux (SWDOWN) at surface, ground heat flux (GRDFLX), sensible heat flux (HFX), latent heat flux (LH), surface runoff (SFROFF) and underground runoff (UDROFF). The data can effectively support the study of regional climate characteristics, climate change and its impact over the Tibet Plateau, which will provide scientific basis for the sustainable development of the TP under the background of climate change.

2、Keywords

Theme：Temperature,Winds,Pressure  
Discipline：Atmosphere  
Places：Tibetan Plateau  
Time：2000-2010

3、Data details

1.Scale：None

2.Projection：Lambert\_Conformal\_Conic

3.Filesize：118784.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：41.0 | - |
| west：70.5 | - | east：109.0 |
| - | south：24.0 | - |

5、Time frame:1999-12-31 16:00:00+00:00--2010-12-30 16:00:00+00:00

6、Reference method

References to data:

MENG Xianhong, MA Yuanyuan . High resolution atmosphere-hydrologic simulation dataset over the Tibetan Plateau (2000-2010). A Big Earth Data Platform for Three Poles, doi:10.11888/Atmos.tpdc.2727482022

References to articles:

Ma, Y.Y., Hu, Z.Y., Xie, Q., Meng, X.H., Zhao, L., & Dong, W.J. (2022). Convection-permitting modeling over the Tibetan Plateau improves the simulation of Meiyu Rainfall during the 2011 Yangtze Plain flood. Atmospheric Research, 265, 105907, https://doi.org/10.1016/j.atmosres.2021.105907.  
  
Ma, Y.Y., Yang, Y., & Wang, C.H. (2019). How essential of the balance between large and small scale features to reproduce precipitation during a sudden sharp turn from drought to flood. Climate dynamics, 52(7-8), 5013-5029.

7、Supporting project information

CASEarth:Big Earth Data for Three Poles（grant No. XDA19070000）

8、Data resource provider

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