A Big Earth Data Platform for Three Poles

**Dataset on atmospheric water cycle changes and the impact in a key area of the Tibetan Plateau under the background of global warming (2008)**

1、Description

The assessment of changes in the atmospheric water cycle and the associated impacts in a key area of the Tibetan Plateau under the background of the global warming was a major component of the research project “The Environmental and Ecological Science of West China” run by the National Natural Science Foundation of China. The leading executive of the project was Xiangde Xu from the Chinese Academy of Meteorological Sciences. The project ran from January 2006 to December 2008.  
  
The following data were collected by the project of the Sino-Japan Joint Research Center of Meteorological Disaster (JICA Project):  
1. Observation category, time period and number of stations  
1) JICA AWS data: From January to July of 2008, 73 automatic stations (including 5 automatic stations of the Chinese Academy of Sciences) collected data in Tibet, Yunnan, Sichuan and other provinces or autonomous regions.   
2) JICA GPS water vapour data: From January to October of 2008, 24 observation stations collected data in Tibet, Yunnan, Sichuan and other provinces or autonomous regions.  
3) JICA encrypted observation GPS sonde data: From March to July of 2008, observations were made in Tibet, Yunnan, Sichuan and other provinces or autonomous regions (detailed observation time and location data can be found in the data catalogue).  
2. Observation categories, data content  
1) GPS water vapour  
Data content: serial number, station name (Chinese), station number, longitude, latitude, altitude, year, month, day, time, surface pressure, surface air temperature, relative humidity, total delay (m), precipitation (cm) (Measurement interval: 1 hour).  
2) GPS encrypted sonde  
 Data content: air pressure P, temperature T, relative humidity RH, V component, U component, vertical height H, dew point temperature Td, water vapour content Mr, wind direction Wd, wind speed Ws, longitude Lon, latitude Lat, radar height RdH.  
A value of "-999.90" means no observation data.  
3) AWS  
Data content: station number, longitude, latitude, elevation, site level, total cloud volume, wind direction, wind speed, sea level pressure, 3-hour pressure variable, past weather 1, past weather 2, 6-hour precipitation, low cloud form, low cloud volume, low cloud height, dew point, visibility, current weather, temperature, medium cloud form, high cloud form, 24-hour temperature variable, 24-hour pressure variable.  
Project Science Advisers: Guoguang Zheng, Xiaofeng Xu, Xiuji Zhou, Zechun Li, Jifan Niu, Jianmin Xu, Lianshou Chen, Dahe Qin, Yihui Ding  
Project Superintendent: Jixin Yu  
Project Executives: Renhe Zhang, Xiangde Xu  
Data set hosting organizations:  
Chinese Academy of Meteorological Sciences, JICA Project Implementation Expert Group, State Key Laboratory of Severe Weather, JICA Project Implementation Office.  
Collaborative organizations involved in the production of the data set:  
Chinese Academy of Meteorological Sciences, State Key Laboratory of Severe Weather, National Satellite Meteorological Center, The Research Center for Atmospheric Sounding Techniques, National Meteorological Center, National Meteorological Information Center, National Climate Center, Sichuan Meteorological Department, Yunnan Meteorological Department, Tibet Autonomous Region Meteorological Department, Institute of Tibetan Plateau Research, Chinese Academy of Sciences, Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences, Tianjin Meteorological Department.  
Data set implementation organizations:  
Beijing Headquarters of JICA Project; JICA Project Sub-center in Sichuan Province, Yunnan Province, Tibet Autonomous Region and Institute of Tibetan Plateau Research, Chinese Academy of Sciences.

2、Keywords

Theme：Clouds,Water vapor,Temperature,Winds,Atmospheric Water Vapor  
Discipline：Atmosphere  
Places：Tibetan Plateau , Western China  
Time：2008

3、Data details

1.Scale：None

2.Projection：

3.Filesize：366.0MB

4.Data format：文本

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：49.36 | - |
| west：73.45 | - | east：111.2 |
| - | south：20.9 | - |

5、Time frame:2008-07-08 08:00:00+00:00--2009-07-08 08:00:00+00:00

6、Reference method

References to data:

XU Xiangde. Dataset on atmospheric water cycle changes and the impact in a key area of the Tibetan Plateau under the background of global warming (2008). A Big Earth Data Platform for Three Poles, doi:10.11888/Meteoro.tpdc.2700892011

References to articles:

Lu, H., Koike, T., Yang, K., Hu, Z.Y., Xu, X.D., Rasmy, M., Kuria, D.N., &Tamagawa, K. (2012). Improving land surface soil moisture and energy flux simulations over the Tibetan plateau by the assimilation of the microwave remote sensing data and the GCM output into a land surface model. International Journal of Applied Earth Observation and Geoinformation, 17,43-54.  
  
徐祥德等, (2008). JICA中日气象灾害合作研究中心项目数据集,中国气象科学研究院灾害天气国家重点实验室.  
  
Xu Xiangde, Renhe Zhang, Toshio Koike, et al. A new integrated observational system over the Tibetan Plateau. Bulletin of the American Meteorological Society（BAMS） 2008，October 1492-1496 DOI:10.1175/2008BAMS2557.1

7、Supporting project information

8、Data resource provider

name: XU Xiangde  
unit: Chinese Academy of Meteorological Sciences  
email: cep99@cams.cma.gov.cn