A Big Earth Data Platform for Three Poles

**Asian precipitation dataset with high quality and spatiotemporal resolution (AIMERG, 0.1°, half-hourly, 2000-2015)**

1、Description

Precipitation estimates with ﬁne quality and spatio-temporal resolutions play signiﬁcant roles in understanding the global and regional cycles of water, carbon, and energy. Satellite-based precipitation products are capable of detecting spatial patterns and temporal variations of precipitation at ﬁne resolutions, which is particularly useful over poorly gauged regions. However, satellite-based precipitation products are the indirect estimates of precipitation, inherently containing regional and seasonal systematic biases and random errors. Focusing on the potential drawbacks in generating Integrated Multi-satellitE Retrievals for Global Precipitation Measurement (IMERG) and its recently updated retrospective IMERG in the Tropical Rainfall Measuring Mission (TRMM) era (ﬁnished in July 2019), which were only calibrated at a monthly scale using ground observations, Global Precipitation Climatology Centre (GPCC, 1.0◦/monthly), we aim to propose a new calibration algorithm for IMERG at a daily scale and to provide a new AIMERG precipitation dataset (0.1◦/half-hourly, 2000–2015, Asia) with better quality, calibrated by Asian Precipitation – Highly Resolved Observational Data Integration Towards Evaluation of Water Resources (APHRODITE, 0.25◦/daily) at the daily scale for the Asian applications. Considering the advantages from both satellite-based precipitation estimates and the ground observations, AIMERG performs better than IMERG at different spatio-temporal scales, in terms of both systematic biases and random errors, over mainland China.

2、Keywords

Theme：Precipitation,Precipitation,Rainfall capacity,Hydrology  
Discipline：Atmosphere,Terrestrial Surface  
Places：Monsoon Asia  
Time：2000-2015

3、Data details

1.Scale：None

2.Projection：

3.Filesize：75162.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：55.0 | - |
| west：60.0 | - | east：150.0 |
| - | south：15.0 | - |

5、Time frame:2000-07-21 08:00:00+00:00--2016-02-19 08:00:00+00:00

6、Reference method

References to data:

MA Ziqiang. Asian precipitation dataset with high quality and spatiotemporal resolution (AIMERG, 0.1°, half-hourly, 2000-2015). A Big Earth Data Platform for Three Poles, doi:10.11888/Meteoro.tpdc.2709872020

References to articles:

Ma, Z.Q., Xu, J.T., Zhu, S.Y., Yang, J., Tang, G.Q., Yang, Y.J., Shi, Z., and Hong, Y. (2020). AIMERG: a new Asian precipitation dataset (0.1°/half-hourly, 2000–2015) by calibrating the GPM-era IMERG at a daily scale using APHRODITE, Earth Syst. Sci. Data, 12, 1525–1544, https://doi.org/10.5194/essd-12-1525-2020.

7、Supporting project information

Second Tibetan Plateau Scientific Expedition Program

8、Data resource provider

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