A Big Earth Data Platform for Three Poles

**100m Gridded datasets for Gross Domestic Product of 34 key nodes (2015)**

1、Description

Gross domestic product (GDP) is a monetary measure of the market value of all the final goods and services produced in a period of time, which has been used to determine the economic performance of a whole country or region. According to the collected the published global GDP data of 2015, a downscaling model, named support vector machine regression kriging was established for predicting 100-m GDP in thirty-four key nodes along the Belt and Road. The remote sensed night light data, land cover, vegetation and terrain indices were employed as ancillary variables in downscaling process. To solve the problem of missing data existing in the ancillary datasets, we will apply kriging and function interpolation methods to fill gaps. The aggregation and resampling were used to obtain 1-km and 500-m all ancillary variables, as well as 100-m terrain indices including elevation, slope and aspect. The adopted downscaling model contains trend and residual predictions. The support vector machine regression is used to model the relationship among GDP and its ancillary variables for obtaining GDP trends at fine scale based on scale invariant of the relationship. And then, the kriging interpolation is used to estimate GDP residuals at fine scale. In the downscaling process, the mentioned downscaling model was firstly employed in 1-km and 500-m data for obtaining 500-m GDP predictions; and it was again used in 500-m and 100-m data for achieving 100-m GDP predictions. The 100-m GDP predictions in constant 2011 international US dollars would provide high spatial resolution data for risk assessments.

2、Keywords

Theme：Galactic System,Gross domestic product,Social and Economic
Discipline：Solar-Terrestrial Physics and Astronomy,Human-nature Relationship
Places：Bengal
Time：2015

3、Data details

1.Scale：None

2.Projection：None

3.Filesize：1648.01MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：24.5 | - |
| west：89.0 | - | east：97.0 |
| - | south：16.0 | - |

5、Time frame:2015-01-13 16:00:00+00:00--2016-01-12 16:00:00+00:00

6、Reference method

References to data:

GE Yong, LING Feng. 100m Gridded datasets for Gross Domestic Product of 34 key nodes (2015). A Big Earth Data Platform for Three Poles, doi:10.11888/Socioeco.tpdc.2704512020

References to articles:

Kummu, M., Taka, M., & Guillaume, J.H.A. (2018). Gridded global datasets for Gross Domestic Product and Human Development Index over 1990–2015. Scientific Data, 5(1), 180004. https://doi.org/10.1038/sdata.2018.4.

7、Supporting project information

8、Data resource provider

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