A Big Earth Data Platform for Three Poles

**HiWATER: Net Primary Productivity product of the Heihe River Basin**

1、Description

Biological productivity refers to the material production capacity of organisms and their groups or even larger scale (including ecosystem and biosphere). It changes with the environment. Therefore, it becomes an indicator of environmental change and the health of the earth system. Net primary productivity (NPP) of vegetation refers to the remaining part of total organic matter (GPP) produced by photosynthesis of green plants in unit time unit area after deducting autotrophic respiration (RA). The NPP products in Heihe River Basin mainly focus on the important parameters par and FPAR of the model of light energy utilization, and improve the algorithm and product production. The FPAR inversion model that distinguishes the direct radiation from the scattered radiation and the par inversion method based on the combination of static and polar orbit satellites are proposed. Finally, the net primary productivity data set of Heihe River Basin is produced by using the light utilization model. The algorithm improves the temporal and spatial resolution of data products, and the accuracy of products is also significantly improved.

2、Keywords

Theme：Gross primary productivity(NPP),Ecological remote sensing products,Terrestrial Surface Remote Sensing  
Discipline：Terrestrial Surface  
Places：Heihe River Basin, the artificial oasis experimental area in the middle reaches, the cold region hydrology experimental area in the upper reaches, the natural oasis eco-hydrology experimental area in the lower reaches  
Time：2014, 2013

3、Data details

1.Scale：None

2.Projection：WSG-84

3.Filesize：4.16MB

4.Data format：ENVI标准格式

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：43.01 | - |
| west：95.99 | - | east：101.98 |
| - | south：37.02 | - |

5、Time frame:2013-01-16 16:00:00+00:00--2015-01-15 16:00:00+00:00

6、Reference method

References to data:

ZHONG Bo, LI Li, WU Shanlong, XIN Xiaozhou, WU Junjun. HiWATER: Net Primary Productivity product of the Heihe River Basin. A Big Earth Data Platform for Three Poles, doi:10.3972/hiwater.290.2016.db2017

References to articles:

Li, X., Liu, S.M., Xiao, Q., Ma, M.G., Jin, R., Che, T., Wang, W.Z., Hu, X.L., Xu, Z.W., Wen, J.G., Wang, L.X. (2017). A multiscale dataset for understanding complex eco-hydrological processes in a heterogeneous oasis system. Scientific Data, 4, 170083. doi:10.1038/sdata.2017.83.

7、Supporting project information

The CAS (Chinese Academy of Sciences) Action Plan for West Development Project  
National High-tech R&D Program of China (863 Program)

8、Data resource provider

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