A Big Earth Data Platform for Three Poles

**Sand drift dataset of Chinese major deserts (2000-2008)**

1、Description

The sand drift potential (DP, in vector units (VU)) is calculated by  
DPi=∑U^2 [U-Ut]\*fu  
where i represents 16 directions: N, NNE, NE, NEE, E, EES, ES, ESS, S, SSW, WS, WWS, W, WWN, NW and NNW; U is the effective sand-moving wind speed at the standard height of 10 m; Ut is the threshold wind velocity, i.e., the minimum wind velocity at the standard height to cause sand particle rolling; and fu is the fraction of time when the wind speed is higher than Ut. The 2 m s-1 bin is adopted in the effective sand-moving wind (sand-moving wind >6 m s-1 at the height of 10 m) directions, corresponding to the mean wind speeds of 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33 and 34 m s-1, to sum all the above results to obtain the final DP in the wind direction. The divisor used in calculating the frequency of effective sand-moving winds from different directions is the total hour number of Julian years (8760 hours for common years or 8784 hours for leap years). The wind speed and wind direction data from 2000 to 2008 were hourly estimates of 10 m u-component of wind and 10 m v-component wind with a horizontal resolution of 0.25°×0.25° generated with the fifth generation of ECMWF atmospheric ReAnalysis of the global climate (ERA5).

2、Keywords

Theme：Sand drift,Terrestrial Surface Remote Sensing  
Discipline：Terrestrial Surface  
Places：the Chinese major deserts  
Time：2000-2008

3、Data details

1.Scale：None

2.Projection：

3.Filesize：9.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：49.42 | - |
| west：76.34 | - | east：122.05 |
| - | south：36.01 | - |

5、Time frame:1999-12-31 16:00:00+00:00--2008-12-30 16:00:00+00:00

6、Reference method

References to data:

LI Guoshuai. Sand drift dataset of Chinese major deserts (2000-2008). A Big Earth Data Platform for Three Poles, doi:10.11888/Geogra.tpdc.2710772020

References to articles:

7、Supporting project information

the Strategic Priority Research Program of the Chinese Academy of Sciences (Grant No. XDA20100104)  
Estimating sand flux in Taklamakan Desert based on the multi-source remotely sensed data

8、Data resource provider

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