A Big Earth Data Platform for Three Poles

**Dataset of soil properties for land surface modeling over China**

1、Description

The dataset includes soil physical and chemical attributes: pH value, organic matter fraction, cation exchange capacity, root abundance, total nitrogen (N), total phosphorus (P), total potassium (K), alkali-hydrolysable N, available P, available K, exchangeable H+, Al3+, Ca2+, Mg2+, K+ , Na+, horizon thickness, soil profile depth, sand, silt and clay fractions, rock fragment, bulk density, porosity, structure, consistency and soil color. Quality control information (QC) was provided.
The resolution is 30 arc-seconds (about 1 km at the equator). The vertical variation of soil property was captured by eight layers to the depth of 2.3 m (i.e. 0- 0.045, 0.045- 0.091, 0.091- 0.166, 0.166- 0.289, 0.289- 0.493, 0.493- 0.829, 0.829- 1.383 and 1.383- 2.296 m) for convenience of use in the Common Land Model and the Community Land Model (CLM).
1.THSCH.nc: Saturated water content of FCH
2.PSI\_S.nc: Saturated capillary potential of FCH
3.LAMBDA.nc: Pore size distribution index of FCH
4.K\_SCH.nc: Saturate hydraulic conductivity of FCH
5.THR.nc: Residual moisture content of FGM
6.THSGM.nc: Saturated water content of FGM
7.ALPHA.nc: The inverse of the air-entry value of FGM
8.N.nc: The shape parameter of FGM
9.L.nc: The pore-connectivity parameter of FGM
10.K\_SVG.nc: Saturated hydraulic conductivity of FGM
11.TH33.nc: Water content at -33 kPa of suction pressure, or field capacity
12.TH1500.nc: Water content at -1500 kPa of suction pressure, or permanent wilting point

2、Keywords

Theme：Soil,Organic matter,Soil texture
Discipline：Terrestrial Surface
Places：China
Time：1980s

3、Data details

1.Scale：None

2.Projection：None

3.Filesize：1400.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：53.9 | - |
| west：73.2 | - | east：135.5 |
| - | south：17.8 | - |

5、Time frame:None--None

6、Reference method

References to data:

SHANGGUAN Wei, DAI Yongjiu. Dataset of soil properties for land surface modeling over China. A Big Earth Data Platform for Three Poles, doi:10.11888/Soil.tpdc.2702812019

References to articles:

Shangguan, W., Dai, Y.J., Liu, B.Y., Zhu, A.X., Duan, Q.Y., Wu, L.Z., Ji, D.Y., Ye, A.Z, Yuan, H., Zhang, Q., Chen, D.D., Chen, M., Chu, J.T., Dou, Y.J., Guo, J.X., Li, H.Q., Li, J.J., Lu, L., Xiao, L., Liu, H.P., Liu, S.Y., Miao, C.Y., Zhang, Y.Z. (2013). A China Dataset of Soil Properties for Land Surface Modeling. Journal of Advances in Modeling Earth Systems. doi:10.1002/jame.20026.

7、Supporting project information

8、Data resource provider

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