A Big Earth Data Platform for Three Poles

**A China dataset of soil properties for land surface modeling**

1、Description

The source data of this data set are 1:1 million Chinese soil maps and 8,595 soil profiles from the second soil census.The data include section depth, soil thickness, sand, silt, clay, gravel, bulk density, porosity, soil structure, soil color, pH value, organic matter, nitrogen, phosphorus, potassium, exchangeable cation amount, exchangeable hydrogen, aluminum, calcium, magnesium, potassium, sodium ion and root amount.The dataset also provides data quality control information.
The data is in raster format with a spatial resolution of 30 arc seconds.To facilitate the use of CLM model, soil data is divided into 8 layers, with the maximum depth of 2.3 meters (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)
Data file description：
1 Soil profile depth PDEP.nc
2 Soil layer depth "LDEP.nc LNUM.nc"
3 pH Value (H2O) PH.nc
4 Soil Organic Matter SOM.nc
5 Total N TN.nc
6 Total P TP.nc
7 Total K TK.nc
8 Alkali-hydrolysable N AN.nc
9 Available P AP.nc
10 Available K AK.nc
11 Cation Exchange Capacity (CEC) CEC.nc
12 Exchangeable H+ H.nc
13 Exchangeable Al3+ AL.nc
14 Exchangeable Ca2+ CA.nc
15 Exchangeable Mg2+ MG.nc
16 Exchangeable K+ K.nc
17 Exchangeable Na+ NA.nc
18 Particle-Size Distribution Sand SA.nc
 Silt SI.nc
 Clay CL.nc
19 Rock fragment GRAV.nc
20 Bulk Density BD.nc
21 Porosity POR.nc
22 Color (water condition unclear) Hue Unh.nc
 Value
 Chroma Unc.nc
23 Dry Color Hue Dh.nc
 Value
 Chroma Dc.nc
24 Wet Color Hue Wh.nc
 Value
 Chroma Wc.nc
25 Dominant and Second Structure S1.nc SW1.nc RS.nc
26 Dominant and Second Consistency C1.nc CW1.nc RC.nc
27 Root Abundance Description R.nc

2、Keywords

Theme：Soil,Soil depth,Soil structure,Soil elements composition,Soil bulk density,Soil horizons/profile,Soil PH
Discipline：Terrestrial Surface
Places：China
Time：2013

3、Data details

1.Scale：None

2.Projection：None

3.Filesize：1438.0MB

4.Data format：栅格

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：53.3331 | - |
| west：73.7464 | - | east：134.738 |
| - | south：18.2769 | - |

5、Time frame:2013-07-30 16:00:00+00:00--2014-07-30 03:59:59+00:00

6、Reference method

References to data:

SHANGGUAN Wei, DAI Yongjiu. A China dataset of soil properties for land surface modeling. A Big Earth Data Platform for Three Poles, 2014

References to articles:

Shangguan, W., Y. Dai, B. Liu, A. Zhu, Q. Duan, L. Wu, D. Ji, A. Ye, H. Yuan, Q. Zhang, D. Chen, M. Chen, J. Chu, Y. Dou, J. Guo, H. Li, J. Li, L. Liang, X. Liang, H. Liu, S. Liu, C. Miao, and Y. Zhang (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

The CAS (Chinese Academy of Sciences) Action Plan for West Development Project

国际科技合作与交流专项项目

8、Data resource provider

name: SHANGGUAN Wei
unit:
email: shanggv@hotmail.com

name: DAI Yongjiu
unit:
email: yongjiudai@bnu.edu.cn