A Big Earth Data Platform for Three Poles

**Environmental index data set of Ganzi loess profile in Western Sichuan Plateau**

1、Description

This data is the magnetism, grain size, chromaticity, diffuse reflectance spectral goethite / hematite peak height data, organic matter stable carbon isotope data of loess-paleosol sequence in Ganzi section (XS) in the east of Tibetan Plateau (TP). We measured the magnetic susceptibility and grain size of the section (10 m) at an interval of 2.5 cm, measured the non-hysteresis remanence and isothermal remanence data at an interval of 5 cm, and provided 5 sets of hysteresis loop measurement results. Total organic carbon (TOC) and organic carbon isotopes were measured at 10 cm and 20 cm intervals respectively. The experimental analysis of magnetic susceptibility was completed at the Key Laboratory of Western China's Environmental Systems (Ministry of Education), Lanzhou University, China. The soil δ13Corgmeasurements were conducted at the State Key Laboratory of Grassland Agro-ecosystems (SKLGAE), Lanzhou University. And the analysis of remanence and hysteresis loop was completed at the Institute of Tibetan Plateau Research, Chinese Academy of Sciences. Chromaticity analysis was carried out in the State Key Laboratory of Loess and Quaternary Geology. The magnetic susceptibility is measured by Bartington MS2 magnetic susceptibility meter, the non-hysteresis remanence is measured by American ASCIM-10-30 pulse magnetometer and molspin minispin small rotation magnetometer, and the isothermal remanence is measured by ASCIM-10-30 pulse magnetometer, 2g-755 superconducting magnetometer and JR-6A rotation magnetometer; he grain size data were measured by a Malvern Mastersizer 2000 laser diffractometer; The chromaticity was determined by CM-700d spectrophotometer. The δ13Corgvalues were analyzed using a MAT-253 isotope ratio mass spectrometer. This data provides an understanding of the magnetic properties and chromaticity variation characteristics of the loess sequence in the eastern TP since the last interglacial period, and plays an important role in the research of the paleoenvironment and paleoclimate in the eastern TP and its relationship with the surrounding atmospheric circulation.

2、Keywords

Theme：organic matter stable carbon isotope,total organic carbon,Grain size,Loess,Paleoclimate Reconstruction,Chromaticity  
Discipline：Palaeoenvironment  
Places：eastern Tibetan Plateau  
Time：the last interglacial

3、Data details

1.Scale：None

2.Projection：

3.Filesize：2.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：31.62 | - |
| west：99.98 | - | east：99.98 |
| - | south：31.62 | - |

5、Time frame:None--None

6、Reference method

References to data:

XIA Dunsheng, YANG Shengli, CHEN Zixuan, LIU Li. Environmental index data set of Ganzi loess profile in Western Sichuan Plateau. A Big Earth Data Platform for Three Poles, doi:10.11888/Paleoenv.tpdc.2718092021

References to articles:

成 婷 , 杨胜利 , 刘维明 , 等. (2018). 川西高原甘孜黄土 - 古土壤容重的特征及其古环境意义. 地球环境学报 , 9(3), 230 – 237.  
  
Chen, Z.X., Yang, S.L., Luo, Y.L., Chen, H., Liu, L., Liu, X.J., Wang, S.Y., Yang, J.H., Tian, W.D., & Xia, D.S. (2022). HIRM variation in the Ganzi loess of the eastern Tibetan Plateau since the last interglacial period and its paleotemperature implications for the source region. Gondwana Research 101, 233-242.  
  
Yang, S., Liu, L., Chen, H., Tang, G., Luo, Y., Liu, N., Cheng, T., & Li, D. (2021). Variability and environmental significance of organic carbon isotopes in Ganzi loess since the last interglacial on the eastern Tibetan Plateau. CATENA 196, 104866.

7、Supporting project information

Second Tibetan Plateau Scientific Expedition Program

8、Data resource provider

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