A Big Earth Data Platform for Three Poles

**Data set of background values of water, soil, atmosphere and biological environment in Namjagbarwa region (1983-1985)**

1、Description

This data set comes from the book "natural geography and natural resources in the Namjagbarwa peak area", which is directed by Ren Meie, edited by Peng Buzhuo and Yang Yichou, and directed by the Institute of geography, Chinese Academy of Sciences. This book is one of the "mountaineering scientific investigation series" of Namjagbarwa peak. It is a comprehensive summary of the natural geographical research on Namjagbarwa peak and the great bend in the lower reaches of the Yarlung Zangbo River, which is a blank area in science.
Since the rivers in Nanfeng area are mostly turbulent, the evaporation and concentration effect is weak. In addition, in the humid Nanfeng area, the soil developed on gneiss is widely distributed, with strong leaching, poor soluble salt in the soil, and more acidic reaction. In order to analyze the contents of some anions and cations in natural water, some anions in different types of soils developed on gneiss parent materials at different altitudes in Nanfeng area were measured, and the results are listed in Table 3.
The content and distribution of elements in the soil are not only affected by the parent material of soil formation, but also related to the properties of organic matter and physical and chemical composition in the soil. Now the content of elements and physical and chemical composition of some soils developed in this area are listed in Table 8. It can be seen from table 8 that some elements are related to physical and chemical compositions such as organic matter and particle size. Nanfeng area has abundant rainfall, large plant coverage, and enhanced biological and chemical effects. There is a clear relationship between the accumulation of soil organic matter and the formation of clay particles and its height, that is, the lower the altitude, the stronger the biological and chemical weathering. At the same time, compared with Mount Everest, chemical weathering is also enhanced, which is the main reason why the content of other elements in the soil in this area is close to that of the world except Na, Mg and K.
The content of elements in soil is closely related to soil forming parent material and soil type. Now, the measured values of elements in main soil types and soil forming parent material are taken as the arithmetic mean, and the standard deviation is calculated, which is listed in Table 9. It can be seen from table 9 that there are certain differences in the content of elements in soils developed from different parent materials, and there are also considerable differences in the content of elements in different types of soils. It shows that the content of elements in soil is closely related to the parent material and soil type. This is mainly related to the chemical properties of the elements themselves and the geochemical properties of the elements in the process of soil formation.
The atmospheric aerosol samples of No. camp, base camp and Pai District in Nanfeng area were analyzed by PI Xe method. The measured values are listed in table 10 to explore the laws of transportation, diffusion, transformation and enrichment, carry out the research on the atmospheric background value in the clean area as soon as possible, and track the source of pollutants. Organic chlorinated compounds such as DDT, 666, PCB, due to their stable properties, can be affected by various natural factors in the environment and migrate for a long distance. In order to understand whether Nanfeng area is also polluted by this kind of organic chlorinated compounds, we used trace analysis method for the first time to analyze the content of organic chlorinated compounds in water, soil, animals and plants and other samples, so as to understand the biological background of Nanfeng area (tables 11, 12, 13), The content of DDT and 666 in water, soil, some plants and poultry eggs in Nanfeng area is very low, generally only 10-8 order of magnitude. No abnormality was found in the content levels of other elements in human hair and cattle hair samples collected.
The contents of inorganic substances in some biological samples from Nanfeng and Beijing are listed in table 14.

2、Keywords

Theme：Soil,Water trace elements,Micronutrients/Trace elements,Water Quality/Water Chemistry
Discipline：Terrestrial Surface
Places：Nnamjagbarwa mountain
Time：1983-1985

3、Data details

1.Scale：None

2.Projection：

3.Filesize：0.07MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：30.15 | - |
| west：94.11 | - | east：96.1 |
| - | south：28.5 | - |

5、Time frame:None--None

6、Reference method

References to data:

PENG Buzhuo, YANG Yichou. Data set of background values of water, soil, atmosphere and biological environment in Namjagbarwa region (1983-1985). A Big Earth Data Platform for Three Poles, doi:10.11888/Terre.tpdc.2726402021

References to articles:

中国科学院登山科学考察队. (1996). 南迦巴瓦峰地区自然地理与自然资源. 北京, 科学出版社.

7、Supporting project information

8、Data resource provider

name: PENG Buzhuo
unit:
email: pengbuzhuo@sina.com

name: YANG Yichou
unit:
email: yangyc@igsnrr.ac.cn