A Big Earth Data Platform for Three Poles

**Magmatic hydrothermal metallogenic model of cuonadong beryllium tin tungsten rare polymetallic deposit（2018-2022）**

1、Description

The cuonadong sn-w-be deposit, located in southern Tibet, is the first large tin polymetallic deposit related to Miocene leucogranite found in the Himalayas. The AR ar ages of muscovite and phlogopite in cassiterite sulfide veins in skarn are 15.4ma and 15.0ma respectively, and the U-Pb age of cassiterite in skarn is 14.3ma. The zircon and monazite U-Pb ages of tin bearing Leucogranites are 14.9ma and 15.3ma, respectively. The above diagenetic and metallogenic ages are completely consistent within the error range, indicating that tin tungsten mineralization is related to Miocene leucogranite in Genesis. The main metallogenic mechanism of skarn w-sn-be is water rock reaction. The metallogenic mechanism of cassiterite quartz vein and cassiterite sulfide vein is fluid boiling caused by the increase of oxygen fugacity, cooling and depressurization. The precipitation mechanism of fluorite quartz vein is the fluid mixing and dilution of magmatic hydrothermal fluid and atmospheric precipitation. The U-Pb age of monazite of garnet schist in cuonadong dome indicates that exhumation and retrograde metamorphism occurred at 38-26 Ma, and a small amount of pegmatite dikes (34 MA) were formed. The cuonadong dome was mainly formed in 21-18 Ma, which is the joint action of STDs extension and detachment and the second stage leucogranite (21 MA) magmatic diapir. At 18-16 Ma, the North-South rift led to the dehydration and partial melting of mica in the high Himalayas, forming the latest tin bearing leucogranite (16mA) and ore controlling fault system. The cuonadong tin polymetallic deposit was formed by the high-grade evolution of tin bearing leucogranite, fluid exmelting and magmatic hydrothermal fluid. There are a large number of dome structures similar to cuonadong and Miocene highly differentiated tin bearing Leucogranites in the Himalayas. This area is expected to become a new tin tungsten rare metal metallogenic belt.

2、Keywords

Theme：Metal enrichment mechanism,Rare elements pegmatites,Gneiss Dome,Rocks/Minerals,Tectonics  
Discipline：Solid earth  
Places：Tethys Himalayan, Cuonadong  
Time：2018-2022

3、Data details

1.Scale：None

2.Projection：

3.Filesize：2.23MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：31.0 | - |
| west：89.0 | - | east：91.0 |
| - | south：27.0 | - |

5、Time frame:2018-08-31 16:00:00+00:00--2022-02-10 03:59:59+00:00

6、Reference method

References to data:

ZHANG Linkui. Magmatic hydrothermal metallogenic model of cuonadong beryllium tin tungsten rare polymetallic deposit（2018-2022）. A Big Earth Data Platform for Three Poles, doi:10.11888/SolidEar.tpdc.2721172022

References to articles:

7、Supporting project information

National Key R&D Program of China（2018YFC0604103）

8、Data resource provider

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