A Big Earth Data Platform for Three Poles

**Major and trace elements, zircon U-Pb ages and zircon trace elements data sets of the Guandian pluton in the lower Yangtze River belt**

1、Description

The data of major and trace elements were analysed by ICP-MS at the State Key Laboratory of Isotope Geochemistry, Guangzhou Institute of Geochemistry, Chinese Academy of Sciences. Zircon U-Pb ages and trace elements were analysed by LA-ICP-MS at the Key Laboratory of Mineralogy and Metallogeny of CAS, Guangzhou Institute of Geochemistry, Chinese Academy of Sciences. The international standard samples and reference values measured in the same batch are consistent within the error range, with low blank in the whole process. The data quality is accurate and reliable. The samples of Guandian pluton show high SiO2 (59.15-62.32%), Al2O3 (14.51-15.38%), Sr (892-1184 ppm), Sr/Y (57.63-86.32) and low Y (12.65-18.05 ppm), similar to typical geochemical features of adakite. The Guandian adakite also exhibits high K2O (2.88-3.86%), MgO (3.89-5.24%) and Mg# (55-60), negative anomalies of high field strength elements (HFSE, e.g., Nb, Ta and Ti) and positive anomalies of Ba, Pb and Sr. LA-ICP-MS zircon U-Pb dating yielded a weighted average age of 129.2 ± 0.7 Ma. Calculations of zircon Ce4+/Ce3+ (6.79-145) and (Eu/Eu\*)N (0.23-0.42) on the basis of in situ zircon trace element analysis indicate that the magma had a lower oxygen fugacity relative to the ore-bearing adakites in the LYRB and Dexing, which is consistent with the fact of ore-barren in the research area. In combination with previous research, we propose that Guandian adakite was formed by partial melting of delaminated lower continental crust triggered by Early Cretaceous ridge subduction of the Pacific and Izanagi plates.

2、Keywords

Theme：Oxygen fugacity,adakite,Rocks/Minerals,delamination lower continental crust,Geochemistry,Tectonics,ridge subduction  
Discipline：Solid earth  
Places：south Tan-Lu fault (STLF), Lower Yangtze river belt (LYRB)  
Time：early CretaceousEarly Jurassic,

3、Data details

1.Scale：None

2.Projection：

3.Filesize：0.09MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：33.0 | - |
| west：117.3 | - | east：118.3 |
| - | south：32.0 | - |

5、Time frame:None--None

6、Reference method

References to data:

LUO Zebin. Major and trace elements, zircon U-Pb ages and zircon trace elements data sets of the Guandian pluton in the lower Yangtze River belt. A Big Earth Data Platform for Three Poles, doi:10.1080/00206814.2017.13937772021

References to articles:

Luo, Z.-B., Xue, S., Zhang, L.-P., Li, H., Li, C.-Y., Zhang, H., Liu, Y.-L., Ling, M.-X., & Sun, W. (2018). Origin of Early Cretaceous Guandian adakitic pluton in central eastern China: partial melting of delaminated lower continental crust triggered by ridge subduction. International Geology Review, 60(11-14), 1707-1720.

7、Supporting project information

The deep process and resource effect of major geological events in Yanshan period (2016YFC0600400)

8、Data resource provider

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