A Big Earth Data Platform for Three Poles

**Deep Probe of Geophysical Techniques for typical ore concentration area (2021)**

1、Description

Taking Jiama-Qulong ore concentration area as an example, a set of active and passive source electromagnetic / seismological joint survey technologies which is suitable for deep ore prospecting less than 3km deep is constructed. The detection results of active and passive electromagnetic sources have been verified by method of borehole physical properties, log data of Jiama 3km scientific drilling and tunnel IP anomaly. In addition, based on the preliminary verification of zegulang borehole physical properties within Jiama ore concentration area, Mogulang target area and one concealed ore body area are preliminarily proposed in this study. Using passive-source electromagnetic detection and high-frequency ambient noise surface-wave tomography of short-period dense array, it is revealed that there is a high-resistance and high-velocity anomaly body (temporarily defined as unravel porphyr deposite in Muchang area) exceeding the scale of geophysical anomaly of Jiama-Qulong ore concentration area. Combined with the results of other projects, Jiama and Qulong ore concentration areas and rock geophysical models, the unravel porphyr deposite in Muchang area has the characteristics of porphyry mineralization. Several high-conductor bodies are found under 5km deep between Qulong and Jiama and provide ore-forming material sources for the upper rock mass. Therefore, Jiama-Qulong ore concentration area has the potential conditions for a large resource base. Based on the comprehensive analysis of shallow and crustal S-wave velocity structure and receiver function obtained from passive source observation, the three large rock masses (Jiama, Muchang and Qulong) have common deep metallogenic background conditions. Taking N29.5 ° as the boundary, the crustal structure in the south is complex, which have characteristics as northward diping Moho, and obvious doublet Moho. And, the crust structure in the north is clearly simple, as relatively horizontal Moho. Due to strongly northward collision of Indian platin the south, the crustal structure changes obviously. There is an obvious interface below Moho in the northern region. Combined with the existing data, it is comprehensively speculated that the Jiama-Qulong ore concentration area locates in the key position of difference decoupling between the crust and lithospheric mantle and of Indian plat northward subducted beneath Gandese zone.

2、Keywords

Theme：Typical ore concentration area,Others,Rocks/Minerals,Scientific Report,Geophysical technology demonstration  
Discipline：Others,Solid earth  
Places：Jiama， Tibet  
Time：2021

3、Data details

1.Scale：None

2.Projection：

3.Filesize：14.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：29.8 | - |
| west：91.0 | - | east：92.0 |
| - | south：29.0 | - |

5、Time frame:None--None

6、Reference method

References to data:

HE Rizheng . Deep Probe of Geophysical Techniques for typical ore concentration area (2021). A Big Earth Data Platform for Three Poles, doi:10.11888/SolidEar.tpdc.2721082022

References to articles:

7、Supporting project information

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8、Data resource provider

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