A Big Earth Data Platform for Three Poles

**3-D Geological Model for Jima Deposits， Tibet**

1、Description

The Jiama deposit in Tibet is a very typical polymetallic deposit in the Gangdise metallogenic belt. Through theoretical prediction and research, it is believed that concealed porphyry-skarn ore bodies are developed in the deep part of the ore concentration area. However, the exploration model based on the borehole coverage of the mining area has a low degree of prediction of the potential target area in the peripheral area. In this paper, based on the density, magnetic properties, resistivity, and polarizability data of 45 borehole cores in the Jiama deposit, we inverted and analyzed the three-dimensional magnetotelluric sounding data volume covering the Jiama deposit and its periphery. At the same time, based on the GOCAD software platform, through discrete smooth interpolation and stochastic simulation algorithms, we constructed the stratum lithology-geophysical three-dimensional visualization integrated model of the Jiama deposit. Combining the results of 2D geological interpretation of 11 magnetotelluric (MT) profiles, we have finely depicted the development characteristics of 3D skarn bodies below 3000m, and verified them with the Jiama Scientific Deep Drill JMKZ-1 well, which was not involved in the modeling, and the results show a consistency agreement. Besides, by combining the skarn metallogenic model, analyzing the characteristics of the electrical parameters of the Jiama deposit and adjacent areas, and combining the electrical characteristics of the three-dimensional skarn, we predict the favorable Target area of stratified skarn in Jiama deposit. The results of this study provide a demonstration of 3D modeling technology for the evaluation of deep resource potential and the goal of increasing reserves in the mining area.

2、Keywords

Theme：3-D geological Model,Others,Jiama,Resources
Discipline：Others
Places：Tibet
Time：2021

3、Data details

1.Scale：50000

2.Projection：

3.Filesize：2200.0MB

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 . 3-D Geological Model for Jima Deposits， Tibet. A Big Earth Data Platform for Three Poles, doi:10.11888/SolidEar.tpdc.2721072022

References to articles:

王素芬, 屈挺, 贺日政, 丁毅, 刘建利, 陈小龙, 李冰, 卢晓. (2021). 西藏甲玛矿区三维地质建模与层状矽卡岩靶区预测, 地质通报, 40(12), 2110-2122.

7、Supporting project information

Deep Probe of Geophysical Techniques for typical ore concentration area
the Projector of China Geological Survey

8、Data resource provider

name: HE Rizheng
unit: Chinese Academy of Geological Sciences
email: herizheng@cags.ac.cn