A Big Earth Data Platform for Three Poles

**Rawdata of Broadband seismic observation within Jiama-Qulong Deposits (2019-2021)**

1、Description

In this study, passive source seismology is used to systematically detect the metallogenic background of the ore concentration area. Therefore, 20 broadband seismic observation points are arranged in Jiama Qulong ore concentration area. The observation period is more than 12 months. The wide-band seismograph arranged in a plane is the integrated wide-band seismograph of nanomatrics horizon in Canada and cmg-3tde in the UK. The data format is minified. Before the actual field data acquisition, the seismometer, digital collector, GPS antenna and continuous power supply system used in the field data acquisition were tested before construction in Fuzhou City, Jiangxi Province, so as to ensure that the instrument can work normally in the field work. Most of the stations are located where the environmental interference is as small as possible to minimize the signal interference caused by human or other natural vibrations. However, due to the observation in the ore concentration area, some observation points cannot be avoided. Considering that the work area is located in Tibet, China, with strong light and large interference, in order to ensure high-quality and continuous waveform records on the basis of reducing instrument risks, we adopted the method of digging a pit to build a platform foundation, and established a platform foundation with unified specifications for each instrument. First, dig a large pit with a diameter of 80-90 cm and a depth of about 80 cm at the location where the station is to be arranged. Before digging the pit, ensure that the underground soil is the original soil rather than backfill. When digging the pit, it is best to dig the bedrock. Secondly, after the pit is excavated, arrange a prefabricated cement pier with a thickness of about 20cm and a diameter of about 30cm, then prepare a large plastic bucket with a volume of 200 L, dig holes at the bottom of the bucket, insert the bucket bottom after digging into the cement pier to the greatest extent, and then tamp it with cement or in-situ soil around the cement pier, And punch holes at the appropriate position where the barrel top is higher than the ground as the cable inlet and outlet. When the seismometer is put into the big bucket, a small bucket shall be buckled upside down on the seismometer to ensure that the seismometer is isolated from the small bucket. Finally, fill the inverted bucket and the upright bucket with high-strength sponge, stubborn. There are two advantages: first, it can isolate the seismometer and ensure the stability of internal temperature and pressure conditions; Second, it can ensure the stability of the environment in the barrel and reduce the background noise. Before installing the seismometer, the surface of the cement pier shall be dried first to ensure good contact between the supporting foot of the seismometer and the installation surface. Then use the geological compass for accurate orientation, mark the cement surface with plastic ruler, marker pen and other tools, and draw the pointing line. The pointing line should preferably pass through the center where the seismometer will be placed. After determining the orientation, place the seismometer on the drawn azimuth scale line, and rotate the seismometer to make the copper pointer at the bottom consistent with the pointing line (the copper pointer points to the East). It should be noted that the compass is easily affected by ferromagnetic objects during orientation. Therefore, the compass should be slightly away from sensors, iron tools, etc. Thirdly, connect the corresponding wire to the seismometer and wrap it around the instrument on the cement surface for several weeks. Finally, adjust the sensor foot screws to make the bubbles center and lock the screws. The broadband mobile seismic station observation adopts the continuous waveform recording method for data acquisition, the sampling rate is 100sps, and the GPS continuous signal receiving method is used for positioning, timing and clock calibration.

2、Keywords

Theme：raw data,Others,Rocks/Minerals,station,Broadband seismic observation
Discipline：Others,Solid earth
Places：Jiama-Qulong
Time：observation duration, 2019-2021

3、Data details

1.Scale：None

2.Projection：

3.Filesize：1500000.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：30.0 | - |
| west：90.5 | - | east：92.0 |
| - | south：29.0 | - |

5、Time frame:None--None

6、Reference method

References to data:

HE Rizheng . Rawdata of Broadband seismic observation within Jiama-Qulong Deposits (2019-2021). A Big Earth Data Platform for Three Poles, doi:10.11888/SolidEar.tpdc.2721092022

References to articles:

7、Supporting project information

Deep Probe of Geophysical Techniques for typical ore concentration area

8、Data resource provider

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