A Big Earth Data Platform for Three Poles

**Raman spectral mapping of fluid inclusion by WITec alpha300R of quartz veins from the Ramba Dome, North Himalayan Gneiss Domes, Tibet**

1、Description

Data content: A large number of strongly deformed quartz veins are developed in the Ramba Dome, which records the fluid activity information in the extensional structure. Raman analysis of inclusions in quartz veins in the footwall and hangingwall of the STDS show that the main liquid phase component of inclusions is H2O and the gas phase components are CO2 and CH4. The existence of CO2 and CH4 represents the contribution of deep source fluids. The main source of CO2 is related to regional and contact metamorphism in the Ramba Dome. This data set has been published in the geological journal.
Data source and processing method: The experimental work is mainly studied by WiTEC GmbH micro confocal Raman spectroscopy imaging system (alpha300R). The Raman experimental data analysis is completed in the laboratory of WiTEC Beijing demonstration center, using 532 nm laser as excitation light source, and the Raman spectral data is processed by WiTEC Project Five software.
Data quality: The scanning area is 8 µm × 7 µ m, including 504 pixels, the integration time of each pixel is 1s, the spatial resolution is 350 nm, the data quality is high and the reliability is strong.
Data application achievements and prospects: Through the analysis of mineral facies of inclusions, we observed the spatial distribution, correlation and chemical differences of different components of gas-liquid phase in quartz vein inclusions in Ramba Dome. The experimental method is based on the fast Raman imaging technology with high sensitivity and high resolution, which solves many difficult tests pain points in the geological field. At the same time, WiTEC Raman system provides excellent expansion performance for many scientific research workstations with its open structure, which greatly reduces the difficulty of realizing various in-situ experiments such as high and low temperature, high pressure, and reaction process.

2、Keywords

Theme：Dome,Laser raman spectroscopy,Geochemistry,Tectonics
Discipline：Solid earth
Places：The Ramba Dome in Tibet, North Himalayan Gneiss Domes
Time：Miocene

3、Data details

1.Scale：None

2.Projection：

3.Filesize：2.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：29.17 | - |
| west：90.0 | - | east：90.33 |
| - | south：29.0 | - |

5、Time frame:None--None

6、Reference method

References to data:

ZHANG Bo, LI Xiaorong. Raman spectral mapping of fluid inclusion by WITec alpha300R of quartz veins from the Ramba Dome, North Himalayan Gneiss Domes, Tibet. A Big Earth Data Platform for Three Poles, doi:10.11888/Geo.tpdc.2717962021

References to articles:

7、Supporting project information

8、Data resource provider

name: ZHANG Bo
unit:
email: geozhangbo@pku.edu.cn

name: LI Xiaorong
unit:
email: lixiaorong95@pku.edu.cn