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## Quartz fluid inclusions characteristics of fluvial deposit in Changjiang River and their implications

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**The morphological characteristics of quartz inclusions in sediments from five locations in the upper, middle and lower reaches of the Changjiang River are analyzed. The source indication of sediments is discussed through the differences in shape, size, quantity, gas percentage and genetic type. From upstream to downstream, the characteristics of quartz inclusions in sediments are different. The inclusion types appearing in the samples from upstream to estuary are gradually enriched. The sediment influx from the tributaries of the Changjiang River makes new types of quartz inclusions appearing in the downstream and estuary. In terms of quantity and size, most quartz inclusions are concentrated in the range of 2-4  $\mu\text{m}$  in size and 10-150/ $\text{mm}^3$  in number. The number and size range of different positions are also different. In SGJS-01 collected from Shigu, is 2-18  $\mu\text{m}$ , the number is 2-166 per volume. In YBCJ-01, YZD-63 and YZD-10 samples collected from Yibin, Yichang and Wuhan, the size is 2-15 $\mu\text{m}$ , 2-10 $\mu\text{m}$ , 2-12 $\mu\text{m}$  and the number is 1-270, 2-220 and 1-308 per volume. The primary inclusions of SGJS-01 in Shigu is 14%, higher than that of primary inclusions in the middle and lower reaches, and that of YBCJ-01 in Yibin decreases to 6%, and for YZD-63, YZD-10 and HK-01 they were 8%, 6% and 5% respectively. The change of the primary inclusion proportion reflects the difference of source rock types of sediments. The difference of source rocks of sediments can be reflected in the type, size, quantity and proportion of primary inclusions. The characteristics of quartz inclusions could be a new way to explore the source of sediments.**

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