Paper Number: 2732

Microfabrics and geochemical characteristics of Paleozoic cherts and their geological implications from southern Qinling orogen, China

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The Paleozoic cherts occur extensively in the southern Qinling orogen belt, Central China. Due to its compact structure and high chemical stability, chert is an ideal carrier to be used to unveil ancient sedimentary environment.

A total of 21 bedded chert samples from the Paleozoic chert of the studied orogen were collected and analyzed for their microfabrics and elements. It is shown that the Paleozoic bedded cherts of the Cambrian, the Silurian and the Devonian systems from the southern Qinling orogen deposited in marginal sea basin environments, and were influenced by the ocean basin nozzle or the fault. The silica was derived from sea-floor hydrothermal fluid systems, with a little contamination by terrigenous clastic sediments. The characteristics of bedded cherts indicate that the southern Qinling orogen developed in a limited ocean basin with multiple hot spots rich in silica during the Paleozoic Era.

This study is supported by Natural Science Foundation of China (41273040), the Fundamental Research Funds for the Central Universities.