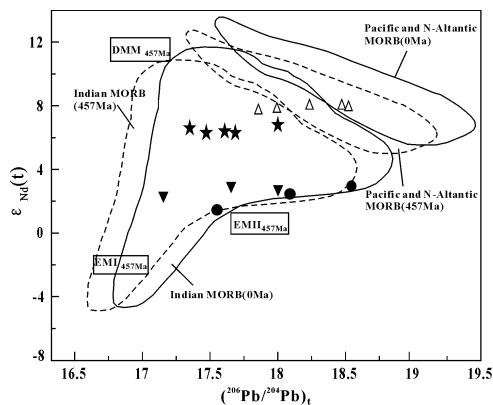


On the boundary of Tethyan tectonic domain at the northeastern margin of the Tibetan Plateau

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It is very important to discover the northern boundary of eastern Tethyan tectonic domain not only for constraining its range and evolution, but also for establishing the tectonic affinity of microcontinents or terranes in China. Early Paleozoic ophiolitic suites preserved in Qilian orogenic belt give very great opportunities to emphasize insights into this scientific problem. Systematic elements, Sr-Nd-Pb isotopic compositions for pillow basalts from these ophiolitic complexes suggest that they were derived from the mantle without island-arc imprints. The age-corrected Nd and Pb isotopic compositions of mantle sources for them are similar to those of mantle sources for the MORB-type basalts in the Palaeo-, Ceno-Tethys and Indian Ocean, which have exhibited the typical Indian MORB-type isotopic signature^[1] (see figure).



Thus, we have suggested that ancient oceanic mantle for these Early Paleozoic ophiolitic complexes was an important branch of Proto-Tethys. Furthermore, it could be summarized that eastern Tethyan tectonic domains become progressively younger from north to south in China. So, the evolution of this orogenic belt is the epitome of tremendous geodynamics setting that some continental slivers were rifted from the northern margin of Gondwanaland and amalgamation (or accretion) of these to form proto-East and SE Asia.

References

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