In this study we report the Early Paleozoic strongly deformed metabasalt, metadiabase and metapyroxenolite, located in the North-Western YunKai massif, South China, which are NE-SW distributed as tectonic slices in the low-grade metamorphic strata. Geochemical studies of the metabasalt and metadiabase show that MgO=6.78% –
9.11%, Mg#=55–63, TiO₂=1.02% –1.34% (average 1.15%), CaO/Al₂O₃=0.54–0.80. The chondrite-normalized REE distribution patterns are slightly depleted—flat type with no obvious Eu anomaly, while the N-MORB-normalized spider diagrams show pronounced enrichment of LILEs (e.g. Rb, Ba, U, K, Pb and Sr) and relative depletion of HFSEs (e.g. Nb, Ta). (La/Yb)ᵣ= 0.68–0.95, average La/Nb, Ce/Zr, Zr/Nb, Zr/Y, Ti/Y are 1.44, 0.14, 26.67, 2.13, 222.64, respectively. The tectonic environment of the metabasalt and metadiabase are similar to the subduction-related ophiolites according to the trace element tectonic discriminant diagrams (e.g. Th/Yb-Nb/Yb). The LA-ICP-MS zircon U-Pb age of the metadiabase is 437±5Ma, which is belonging to Silurian. In conclusion, we suggest that the basic volcanic complexes are Early Paleozoic oceanic ophiolite fragments. The discovery and confirmation of the Nuodong ophiolite provide an important new evidence directly for the existence of the Early Paleozoic oceanic basin and ocean-continental subduction in South China.