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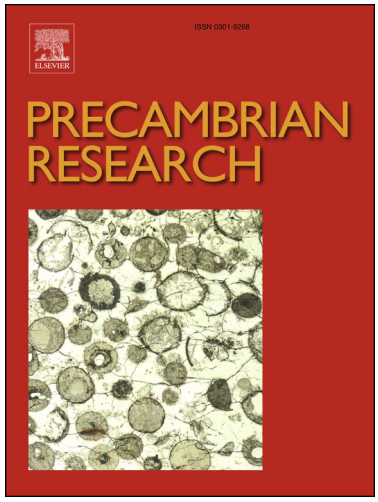

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Complex growth and reworking processes in the Yangtze cratonic nucleus

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ABSTRACT

The Kongling Complex (KC), including the northern (NKC) and southern parts (SKC), represents a rare relic of Archean crust in the Yangtze Craton, and an ideal target to investigate the Precambrian evolution of the continental crust. In the SKC, history of Archean-Paleoproterozoic growth and reworking has not yet been clearly understood. New geochemical and geochronological data on the basement rocks (i.e., gneiss, migmatite, amphibolites) and their overlying metasediments in the SKC, combined with published results from the NKC, allow a further subdivision into western, middle and eastern zones, which has proven useful in understanding the Precambrian history of the Yangtze cratonic nucleus.

U-Pb dating and Lu-Hf isotopes of zircons in biotite gneisses (with or without amplibole) and amphibolites suggest that the SKC experienced a crustal re-melting (reworking) event at ~2.9 Ga, an accretion/reworking event at ~2.7 Ga, and later reworking at ~1.73 Ga and ~0.8 Ga. These records are partly consistent with what is known about the NKC. The main differences between them are that rocks with ages >3.0 Ga and 2.1–2.0 Ga are only found in the NKC but not in the SKC. Hence, the

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