

BASIN-MOUNTAIN COUPLING IN NORTH DABIE MOUNTAIN TO HEFEI BASIN, CENTRAL CHINA

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A research on the Mesozoic fill-sequences of Hefei basin, located at the north foot of Dabie mountain, shows two-phase evolution. The first phase, early- to mid-/late-Jurassic, is characterized by terrestrial clastic deposits, with four times of reverse-graded cycles at least, and forms larger thick of molass reconstruction in the mid-/late-phase, which reflects gradually strong thrusting-orogenesis in the north Dabie and flexural depression in the north foreland of Dabie mountain. The second phase, late-Jurassic to Cretaceous, includes two-episode rifting processes. The first-episode, the late Jurassic, shows calc-alkalic-alkali volcanic rocks interstratified pyroclastic rocks, which may reflect upwelling igneous magma from mantle-source due to the Yangtze continent slab breakoff induced by deep subduction process. A suit of lacustrine, fluvial and piemont facies, about 3000-3500m in thickness, develops in the second-episode, which reflects regional extensional setting and intense elevation diversity of mountain-basin in the study area. It is presented that regional pressing thrusting-orogenesis predominated after the Indo-Chinese epoch due to the further intracontinental subduction of Yangtze plate. So the middle-upper Jurassic deposits overlap northwards and result in reverse-graded fill-sequences in the Hefei basin. Afterwards, with the beginning of andesitic and trachyte lava, the late-Mesozoic rifting cycles occur in the basin. It is convincing that mountain-basin transform in the study area can not be simply delimited by the late-Triassic.