

Evolution of the Granites in Qinling Orogenic Belt

Qinghui Xiao¹, Xinxiang Lu². ¹Chinese Institute of Geology and Mineral Resources Information, Beijing, China. ²Henan Institute of Geological Sciences, Henan, China.

The granites of different periods, geneses and types occur widely in Qinling orogenic belt. The formation of them is related with evolution of the orogenic belt and is a real record of the tectonic evolution of Qinling orogenic belt. The granitic activity and the rock type of each period shows a specific state and pattern of the plate tectonic evolution in the belt. The formation and emplacement processes of Qinling granites, which is a major component of the Qinling lithosphere, are important marks of the formation, evolution and dynamic process of Qinling orogeny.

Seven episodes of the igneous activity in it are recognized: (1)2500-2900Ma; (2)1600-2000Ma; (3)1000(800-1100)Ma; (4)402-600Ma; (5)240-380Ma; (6)190-230Ma; (7)100-170Ma. Each episode of the granite reflects one specific stage of the plate evolution in the belt. The underplating, delamination and crust thickening led to the formation of granites magmas. The strike-slip and extension had played the important roles in the emplacement of the magmas . These results show that the formation of the granitic body is the result of the long-term evolution of the plate processes in the belt.