Geophysical Research Abstracts
Vol. 19, EGU2017-13232, 2017
EGU General Assembly 2017
© Author(s) 2017. CC Attribution 3.0 License.

Paleomagnetic study on the Triassic rocks of the northern Qiangtang Block, Tibetan Plateau and their tectonic implications

Zhou Yanan, Cheng Xin, Peng Ximing, Yang Xingfeng, and Wu Hanning

Department of Geology & State Key Laboratory of Continental Dynamics, Northwest University , Xi'an 710069, China (964800752@qq.com)

The formation and the evolution of the Tibetan Plateau have long been a research focus for the geologists. The tectonic processes of Tibetan Plateau were closely related to the rift of several Gondwana-original blocks which drifted north-toward and reached the southern margin of the Eurasia-plate starting in the Late Paleozoic. According to the geology evidences, it seems that the Qiangtang Block, one of the major blocks of the Tibetan Plateau, located in south hemisphere from the Late Paleozoic and then accreted to the southern margin of the Eurasia during the Jurassic-Cretaceous. However, the detailed drift history of the Qiangtang Block remains uncertainties, especially during the Triassic period. Here, we present two paleomagnetic data from the 236 samples (23sites) drilled from the Triassic strata of the northern edge of the Qiangtang Block in Tibetan Plateau, China. Rock magnetic characteristic suggests that most of the samples were dominated by magnetite and/or hematite. Most samples from the Triassic rocks record obviously two-components: a low temperature component near the present-day field and a high-temperature component separated from the Early and Late Triassic rocks. The high-temperature Component of the Early and the Late Triassic rocks passed the fold test at high confidence level. The corresponding paleopoles for the Early and Late Triassic of the Qiangtang Block are 23.8°N, 210.3°E with A95 = 10.9° and 71.3°N, 257.7°E with A95 =8.7°, respectively. Our new paleomagnetic results, combined with previously published paleopoles from the Qiangtang Block, demonstrate that the Qiangtang Block was located at mid-low latitudes in the southern hemisphere from the Early Permian to the Early Triassic, then moved to mid-low latitudes of the northern (15.9±8.7°N) in the Late Triassic, after that the Qiangtang Terrane northward continually, but the velocity and the distance of drift are far less than this period.