

LATE CRETACEOUS PALEOMAGNETIC RESULTS OF SIKHOTE ALIN, FAR EASTERN RUSSIA

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TECTONIC IMPLICATION OF THE EASTERN MARGIN OF THE MONGOLIA BLOCK: LATE CRETACEOUS PALEOMAGNETIC RESULTS OF SIKHOTE ALIN, FAR EASTERN RUSSIA

We present paleomagnetic results of newly collected Late Cretaceous welded tuffs in the Kisin Group at 27 sites from the Sikhote Alin mountain range. Characteristic paleomagnetic directions with high unblocking temperature component above 590 were isolated from 25 sites. A mean paleomagnetic direction for the Late Cretaceous Kisin Group, combined with previously reported data, is $D=339.7$, $I=56.2$, $a95=7.8$ ($N=45$ sites), which reveals counter-clockwise deflection in comparison with Late Cretaceous field direction expected for the Eurasian continent. The reliability of the mean directions is confirmed by better clustering of remanent magnetizations after tilt correction and the presence of normal and reversed polarities. Paleomagnetic declinations indicate that the Sikhote Alin block rotated counter-clockwise through 37 ± 16 with respect to the Eurasian continent later than the Late Cretaceous and that the main rota

tional motion ceased at 50-53 Ma. Comparing with the paleomagnetic data from the vicinity of Sikhote Alin, the rotation recorded in Sikhote Alin extends westward to the interior of the Mongolia Block. The eastern margin of Asian continent experienced counter-clockwise rotation of the eastern part of Mongolia block and clockwise rotation of the eastern part of the North China Block in the end of Cretaceous. We interpret these data to show that strong net horizontal force toward ocean side acted on the lithosphere of the eastern margin of the Asian continent between the Late Cretaceous and 50-53 Ma. Intermittently occurring upwellings of mantle and associated horizontal flows, on the basis of continental plate, play an important role for producing the net horizontal force on the continental block at Late Cretaceous times.