

Paleomagnetism of the Daedong Supergroup, Korean Peninsula

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A characteristic component of the Lower Mesozoic Daedong Supergroup in the central part of the Korean Peninsula was isolated from four sites. The characteristic component directions yielded positive fold and reversal tests at the 95% confidence level. The characteristic component is interpreted to be of primary origin of Late Triassic time. The primary directions yield a pole representative for the Daedong Supergroup at 31.9N, 220.2E with $A95=12.7$. The paleomagnetic poles from the Daedong Supergroup is located at the same paleolatitudinal position with those from the North and South China Blocks. The Daedong Supergroup was formed in-situ at the present Korean Peninsula and would have rotated by the same amount in the same direction with the South China Block.

Lower Mesozoic lake deposits of the Daedong Supergroup in the central part of the Korean Peninsula were collected at 38 sites for paleomagnetic study. A characteristic remanent magnetization component with unblocking temperatures of 635-660C was isolated from four sites, while the other sites show a magnetization component with directions conforming to the present field or an unstable magnetization component. The directions of the characteristic component with both normal and reversed polarities yielded positive fold and reversal tests at the 95% confidence level. The characteristic component is interpreted to be of primary origin of Late Triassic time, yielding a mean direction of $D=82.2$, $I=23.1$ with $a95=4.1$. The primary directions together with previously reported ones yield a pole representative for the Daedong Supergroup at 31.9N, 220.2E with $A95=12.7$. The paleomagnetic poles from the Daedong Supergroup is located at the same paleolatitudinal position with those from the North and South China Blocks. The three paleomagnetic poles plot along a small circle centered on the reference point within the Korean Peninsula. This means that relative movement between the North and South China Blocks since the Late Triassic is essentially described as rotation between the two blocks. The northward impingement of the South China Block into the North China Block nearly ceased by the Late Triassic in the Korean Peninsula, whereas rotational motion between the North and South China Blocks occurred throughout the duration of the collision that completed at the Middle to Late Jurassic boundary. Since the pole of the Daedong Supergroup is not significantly rotated with respect to that of the South China Block, the Daedong Supergroup was formed in-situ at the present Korean Peninsula and would have rotated by the same amount in the same direction with the South China Block.