

## **M. Fuller : Tertiary paleomagnetism of regions around the South China Sea**

### **Laporan (Report)**

The above talk by Dr. M. Fuller (Department of Geological Sciences, University of California, Santa Barbara, California) was sponsored by the Geological Society of Malaysia in collaboration with the Geology Department, University of Malaya. It was held at the Geology Department, University of Malaya on 30 January 1991 and attracted a crowd of about 45. The speaker has kindly supplied an abstract of the talk.

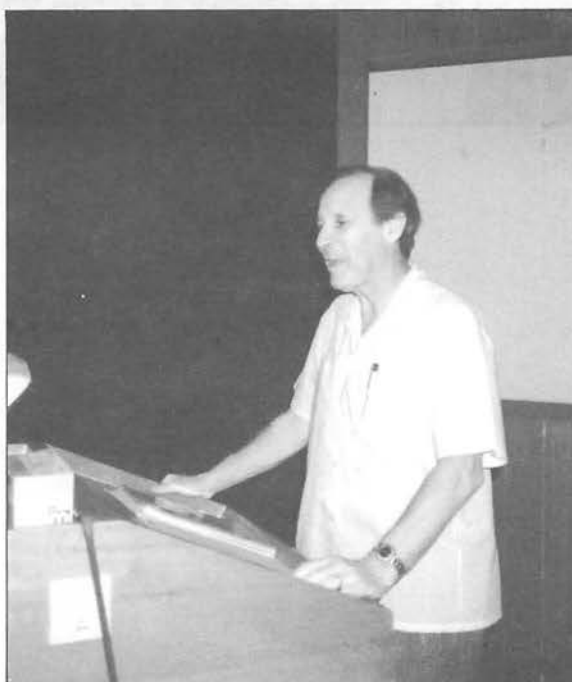
### **Abstrak (Abstract)**

Paleomagnetic data from the Philippine Sea Plate reveal a history of clockwise (CW) rotation and northerly translation, since the late Eocene, which appears to be plate wide. The results imply a pole of rotation to the east. The motion generated left lateral oblique convergence between the Philippine Sea Plate and SE Asia.

Late Miocene paleomagnetic data from the Philippines show CW rotation in the northern island of Luzon, while to the south in the Central and Southern Philippines no rotations are seen. This defines the North and the Central and South Philippines Paleomagnetic Domains (NPPD and SCPPD). In the Miocene, the NPPD exhibits rapid counterclockwise (CCW) rotation, but the SCPPD shows CW rotation. There are indications of pre-Miocene CCW rotation from Zambales, the Visayans and the Celebes Sea.

In Borneo, a history of Tertiary CCW rotation has been found in Sarawak, Sabah and West Kalimantan. In central Kalimantan, there are conflicting results, some of which show no rotation with respect to stable Eurasia, while others give CCW rotations consistent with those seen elsewhere.

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In the Malaysian peninsula, the Segamat basalts, of late Cretaceous Early Tertiary age show CCW rotations similar to those seen in Sarawak. To the north in the Thai peninsula, CW rotations have been found in two Tertiary basins. Late Tertiary basalts from Central Thailand have given similar results, but on the Khorat plateau comparable basalts are unrotated.

The tectonic implications of the results remain controversial. In particular, the relative importance of true plate rotations and localized rotation of upper crustal blocks in distributed shear zones is unclear. The CW rotations seen in Thailand are consistent with, though do not require, propagating extrusion tectonics. The substantial region of CCW rotation in Borneo and the Philippines is consistent with the broad features of the Holloway model. However, the eastern boundary of SE Asia has experienced left lateral oblique convergence, since the late Eocene, and the effect of interaction with the Philippine Sea Plate must be added to the Holloway model.



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