NEW PALEOMAGNETIC AND ANISOTROPY OF MAGNETIC SUSCEPTIBILITY RESULTS HIGHLIGHT THE STRUCTURAL EVOLUTION OF SOUTHERN TAIWAN WITHIN THE FRAME OF OBLIQUE COLLISION

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The Taiwan mountain belt is the result of the southward-propagating collision between the western edge of the Philippine Sea plate (including the Luzon arc) and Eurasia (especially the Chinese margin). Previous paleomagnetic studies, especially in Plio-Pleistocene flysch formations, showed that in eastern Taiwan the structural units of the Coastal Range (belonging to the Luzon arc) underwent diachronous clockwise rotations of about 30° during the propagating collision process. In contrast, few results were obtained in the growing mountain belt of southern Taiwan, where large masses of coarse sandstones and conglomerates make paleomagnetic analysis difficult. In addition, the structural pattern in this region was not clearly defined, although paleocurrent reconstruction in Miocene formations shed light on possible rotations of margin units. Our new paleomagnetic investigations provide more constraints and pave the way to a new structural approach in this area. These paleomagnetic analyses aim at reconstructing both the rotations and the anisotropy of magnetic susceptibility (AMS). The preliminary results reveal rotations in the range of 25°-60° clockwise and of 20°-30° anticlockwise. Some sites would present additional thermo-remanent magnetizations. Understanding the deformation process in this southern segment of the Taiwan belt will highlight the kinematic-tectonic processes that occur during the southward propagation of the collision along the main, NNE-SSW trending portion of the Taiwan belt.

Paleomagnetism, tectonic, AMS

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