



The Late Eocene dyke swarms from the Michoacan block (western Mexico): Tectonic implications

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The western-central part of Mexico is segmented by several structural systems bounding crustal blocks, two of them are the Jalisco and Michoacan blocks. In an oblique convergent margin system the deformation induced is partitioned into an arc normal component, accommodated at the trench, and an arc-parallel component, accommodated at the magmatic arc. Thus knowledge of the relative motions between these plates involved with the SW tectonics of Mexico is important because it allows us propose a link between these relative motions and the onland structural systems.

A dike swarm located in the Michoacan block was studied, one dike was Ar-Ar dated in 35 Ma (Late Eocene). Sixteen sites (about 150 oriented samples) were collected. Rock-magnetic experiments permitted identification of the magnetic carriers and assessment of the paleomagnetic stability. Continuous susceptibility measurements vs temperatures, in most cases yield reasonably reversible curves with Curie points close to that of magnetite. Reliable paleomagnetic directions were obtained for 12 sites. The mean inclination is in reasonably good agreement with the expected value, as derived from reference poles for the stable North America. Declination is significantly different from that expected which may suggest a counterclockwise tectonic rotation of 20°. Our previous results for miocene rocks from the Michoacan block gave similar (24°)counterclockwise rotation suggesting a Miocene age for this tectonic phase.