

PALEOMAGNETISM OF THE CAMBRIAN DIKE SWARM FROM ITABUNA, SOUTHEASTERN BORDER OF THE SÃO FRANCISCO CRATON

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The alkaline dike swarm occurring in the southeastern border of the São Francisco craton, near Itabuna city, Bahia State, is related to the Brasiliano-Pan African cycle which gave rise to the amalgamation of the Gondwana supercontinent. The Itabuna swarm shows hundreds of dikes with thicknesses ranging from 30 cm to 200 cm, and representing more than one dike generation. K-Ar data from the main intrusion of the Itabuna sienitic suite, and associated dikes give ages ranging from 660 to 450 Ma. However, the U-Pb and Rb-Sr ages are in the 660-570 interval. The paleomagnetic study was performed on 53 dikes of various trends and chemical compositions, including basic and acid types. Titanomagnetites with low content of Ti are the main magnetic carriers in these rocks. After thermal (up to 600°C), and a.f. (up to 100 mT) standard demagnetization procedures, three components of magnetization could be identified, which correspond to paleomagnetic poles located at 227.9°E 81.9°N (IT1, N=15, A95=6.2, k=39), 221°E 2.2°S (IT2, N=10, A95=11, k=20), and 261.1°E 29°S (IT3, N=11, A95=7.4, k=38). These poles are in good agreement with other South American poles of Cambrian age, and describes a segment of the APWP for the Western Gondwana block still drifting independently from the Eastern block.