

A10p-A10p A10 Paleomagnetism and Magnetic Fabrics Applied to Tectonic and Volcanic Processes (Div. I)**Abstract: A10p-043****Magnetic fabrics and paleomagnetism of Mesozoic dike swarms from the coastline of São Paulo state (SE Brazil)**M. T. B. Raposo¹¹Institute of Geoscience - Sao Paulo University, Mineralogy and Geotectonic, Sao Paulo, Brazil

The studied swarms occur along the coast NE of São Paulo State, and the dikes crosscut Archean and Proterozoic polymetamorphosed rocks from the Costeiro Complex. The dikes are diabases, alkalines and lamprophyres, and they crop out side by side (some of them are cross cutting) in the beaches. They range from a few centimeters up to 2 m wide for the lamprophyres and alkaline, and up to > 10 m for the diabase. Their trend is predominately N40°-50°E with vertical dips. Around 250 dikes were studied in which rock magnetism properties indicate that pseudo-single-domain grains of almost pure magnetite carry the magnetic fabric and the remanence. The dominant magnetic fabric (AMS and AARM) in all swarms is related to magma flow. The analysis of the magnetic lineation permitted to infer that the dikes from the swarms were fed by horizontal, inclined and vertical flows. Horizontal up to vertical flows in the dike swarms can indicate either some movement of South American plate or more than one magma source for diabases, lamprophyres and alkaline as well. The anomalous AMS fabric Inverse and intermediate were also found. The AARM fabric is either coaxial, non-coaxial or better defined than AMS fabric. Paleomagnetic studies show that the swarms register normal and reverse polarity. The mean remanent magnetization direction from the swarms suggests that the sources which give arise lamprophyre, diabase and alkaline dikes were active at the same time when the geomagnetic field was normal and reverse polarity.