

Morpho Structural Evolution of Fogo Island – Task 2

José Eduardo de Oliveira Madeira - Responsável

António Pedro Valerio Brum da Silveira;
Catherine Anne Marie Dominique Mériaux;
Fernando Carlos da Silva Coelho Lopes;
João Manuel Lima Silva Mata;
Lídia Maria Amaral Raposo do Quental;
Maria Teresa Abrunhosa Barata;
Pedro Manuel Fernandes Carvalho da Silva;
Ricardo Alexandre dos Santos Ramalho;



**FIRE
project**



Morpho Structural Evolution of Fogo Island

1 - Produce a new updated Geological Map of Fogo island (1:50,000 scale).

Field work + revision of data already obtained in previous work; geochronological dating.

2 - Produce a Geomorphological Map of Fogo island (1:50,000 scale).

Field work + analysis of aero photography - Orthophotomaps high resolution DEM.

Identification and constrain the age of the main activity phases that built the volcanic edifice:

Ages of important destructive events (e.g. nature, age and evolution of the summit depression of Fogo (caldera event(s), giant lateral collapse, etc).

3 – Characterization of geometry, distribution and characteristics of the feeder system(s) of Fogo from geomorphological analysis, structural and magnetic fabric analysis.

Field work + laboratory

4 - Magnetic studies: fabric and paleomagnetic characterization of the dikes exposed at the Bordeira wall and seaclif

Determination of the “fossil” magmatic vector flow orientation in selected dikes – radial and non radial swarms - in the caldera rim by Anisotropy of Magnetic Susceptibility (AMS) methodology.

Characterization of different swarms by their magneto-mineralogical properties, measured in low and high field. Identification of main magnetic carriers.

Relationship of the magnetic fabric of the dikes and geometry of stress field at time of intrusion.

Magnetic fabric in dykes will provide information on the flow vector pattern from the magma source and may contribute to establish constraints on the depth and dimensions of magma chamber(s).

The spatial distribution frequency and orientation of dikes reflects the stress field at the time of intrusion.





Thank you