

## MARTINS VAZ FRACTURE ZONE AND THEIR EVOLUTION THROUGH TIME

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Martin Vaz Fracture Zone (MVFZ) is located at 20°S in MAR. Today, this FZ show a small offset in the ridge axis (15km). At both sides of MAR, N of MVFZ, on crust older than 5my, two fossil FZ were identified from the predicted bathymetry and seismic data, one up to 120my and other between 20 and 80my. If these fossils FZs were part of MVFZ, then MV was a double FZ during 5-20my, triple FZ between 20 and 80my, and double FZ between 80-120my, with a width of 130km. This FZ show an inflection from E-W to SW-NE at 80my. However, west of 85my, our isochron map suggests an increasing complexity in the FZ system with additional relict lineament of the direction NE-SW, between 85 and 110my. All through its history the FZMV system show a strong variability. This FZ can be trace by predicted bathymetry, magnetic isochrons, seismic, earthquake center register and also by the existence of volcanic cones in the continental margin and in the continent. In the continent, the MVFZ direction coincides with the Cabo Frio alkalic lineament (90 to 50my), which represent a hotspot trail with Tristan da Cunha signature. The MVFZ is still tectonically active, attested by a fractured oceanic crust and overlaying sedimentary cover. In summary, MVFZ once represented a complex triple FZ and through time changed to a single FZ with a small offset in the ridge axis. The Cabo Frio alkalic lineament is the continental prolongation of MVFZ.