

NEW AR-AR AGES FOR THE ABROLHOS VOLCANIC ROCKS, EAST BRAZILIAN MARGIN

¹Sobreira, Jorge Fiori Fernandes and ¹Szatmari, Peter.
¹PETROBRAS/CENPES , RJ, Brazil.

The Abrolhos Volcanic Complex is a basaltic magmatic province, located offshore Espírito Santo and Bahia states on the East Brazilian Margin. Its only outcrops are in the Abrolhos Islands.

In 1998, basalt samples from PETROBRAS wells in the Mucuri and Cumuruxatiba Basins in the Abrolhos area were dated by the Ar-Ar method. Previously, only a few Ar-Ar dates of outcrop samples had been available; besides, a wide-range of K-Ar ages had been obtained from outcrop and well samples.

The new dates suggest that the whole period of volcanic activity falls within an interval of approximately 10 Ma (from 53 to 64 Ma, which according to F. Gradstein and J. Ogg, 1996, corresponds to Paleocene), while previous K-Ar results pointed to a longer (20 to 30 Ma) period, centered on the same interval. Dikes and sills shown by seismic reflection profiles suggest that there was also a minor, later intrusive phase of igneous activity, which affected and locally deformed sediments younger than Mid-Eocene.

The magmatic province continues to the east, along the Vitória-Trindade hotspot track. K-Ar dates from Trindade Island at the eastern end of this presumed hotspot track furnished ages as young as 4 to 0.17 Ma.