



Salt Tectonics and structural styles in the Province of the Foz do Rio Doce.

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ABSTRACT

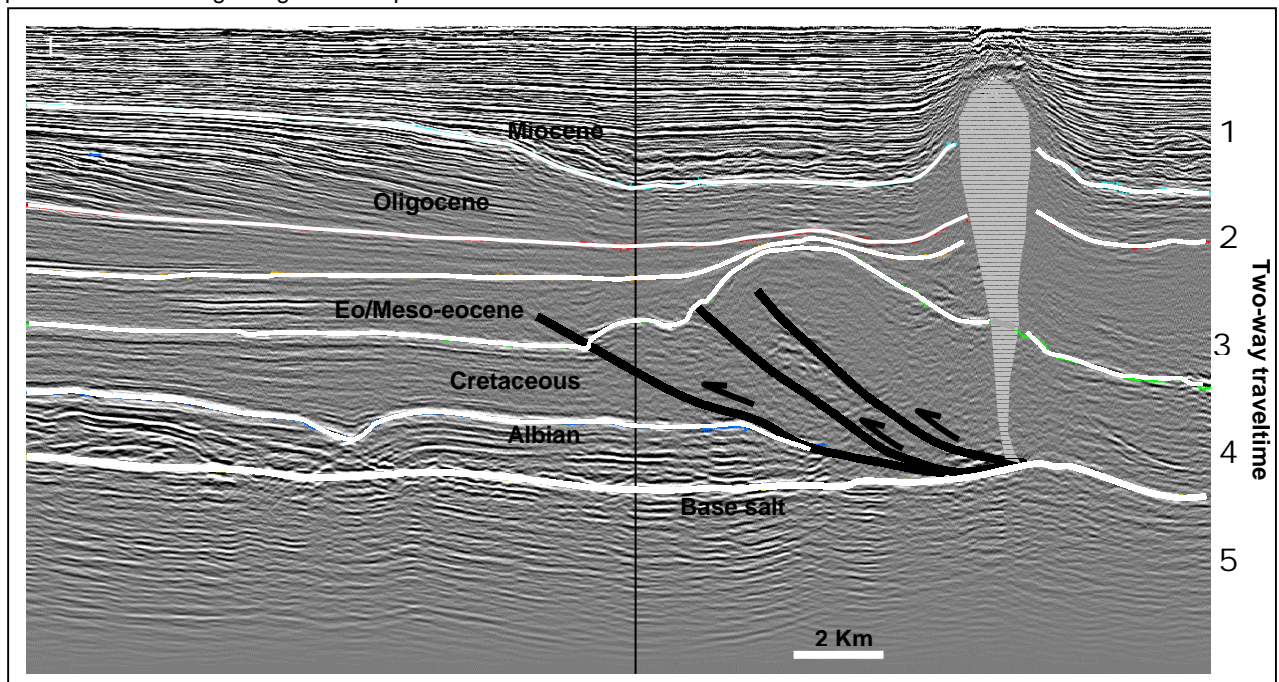
The province of salt diapirs of the Foz do Rio Doce is located at the southeastern portion of the Espírito Santo Basin, close to the external limit of the shallow platform (isobath = 200m). The exploratory investigation in this region, involving three-dimensional seismic, gravimetry and well data, allowed the identification of unique structural features.

Halocinesis is strongly influenced by several factors, resulting in peculiar structural styles for a passive margin.

The analysis of the stratigraphic relationship and the geometry of the salt domes showed the influence of three deformational stages on its structural evolution. The first stage, common to the whole Brazilian margin, consists on the eastward tilting of the basin, initiating in the Albian and affecting the sedimentary package with listric syndepositional faults which propagate up to lower Eocene strata.

The second stage relates to the Arolhos basinwide volcanism, with highest manifestation in the mid Eocene, acting as a physical barrier to this salt flow, overloading the sedimentary wedge. This event reflects on the area through typical compressional features, repetition of layers and thrust faults. Sandbox experiments of tectonophysics modeling support the interpretation given to the geometry observed in the region.

The third stage corresponds to the formation of fault diapirs piercing the whole sedimentary package to the Holocene. It is observed that the positioning of these diapirs is conditioned by lower tension zones situated between the end of the platform and the beginning of the slope.



Seismic section E-W showing the tectonic styles at the Rio Doce Province