

## **First results on the crustal structure of the Natal Valley from combined wide-angle and reflection seismic data (MOZ3/5 cruise), South Mozambique Margin.**

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The Natal valley (South Mozambique margin) is a key area for the understanding of the SW Indian Ocean history since the Gondwana break-up, and widely, the structure of a margin system at the transition between divergent and strike-slip segments. As one part of the PAMELA project (PAssive Margins Exploration Laboratories), conducted by TOTAL, IFREMER, in collaboration with Université de Bretagne Occidentale, Université Rennes 1, Université Pierre and Marie Curie, CNRS et IFPEN, the Natal Valley and the East Limpopo margin have been explored during the MOZ3/5 cruise (2016), conducted onboard the R/V Pourquoi Pas?, through the acquisition of 7 wide-angle profiles and coincident marine multichannel (720 traces) seismic as well as potential field data. Simultaneously, land seismometers were deployed in the Mozambique coastal plains, extending six of those profiles on land for about 100 km in order to provide information on the onshore-offshore transition. Wide-angle seismic data are of major importance as they can provide constrains on the crustal structure of the margin and the position of the continent-ocean boundary in an area where the crustal nature is poorly known and largely controversial. The aim of this work is to present the first results on the crustal structure from P-waves velocity modeling along two perpendicular MZ1 & MZ7 wide-angle profiles crossing the Natal Valley in an E-W and NNW-SSE direction respectively, which reveal a crust up to 30 km thick below the Natal Valley and thus raises questions of a purely oceanic origin of the Valley.

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