



Preliminary results from combined wide-angle and reflection seismic data in the Natal Valley, South Mozambique margin across the Almirante Leite volcanic ridge : MZ2 profile (MOZ3/5 cruise).

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The study of South Mozambique passive margin is essential to understand its rifting evolution and better constrain kinematic reconstructions model of the Indian Ocean. MOZ3-5 oceanographic cruises (2016) is part of the PAMELA project (PASSive Margin Exploration LABORatory), conducted by TOTAL, IFREMER, in collaboration with Université de Bretagne Occidentale, Université Rennes 1, Université Pierre and Marie Curie, CNRS et IFPEN. These campaigns allowed the acquisition of wide-angle and multichannel seismic data as well as high resolution bathymetric data, dredges, magnetic and gravimetric data. This work focuses on the deep structure of the northern segment of the Natal Valley which was investigated along a 300 km long E-W seismic transect cross-cutting the Almirante Leite volcanic ridge (MZ2 profile). The wide-angle data set is composed of 23 OBS (Ocean Bottom Seismometers) and 19 LSS (Land Seismic Station) spaced by about 12 km and 4-5 km respectively. Forward modelling of the wide-angle data led to a preliminary 2D P-waves velocity model revealing the sedimentary architecture, crustal and lithospheric structures and shallow high velocity material at the volcanic ridge. The aim of this work is to present the first results on the crustal structure from P-waves velocity modeling along the profile MZ2, in order to discuss the sedimentary sequences, the geometry and nature of the crust (oceanic or continental) as well as structures associated with volcanism, and to better understand the margin's evolution.

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Moulin, M., Aslanian, D., 2016. PAMELA-MOZ03 cruise, RV Pourquoi pas ?, <http://dx.doi.org/10.17600/16001600>

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