

DEEP STRUCTURE ACROSS THE TUCANO RIFT AND JACUIPE MARGIN FROM ONSHORE-OFFSHORE WIDE-ANGLE SEISMIC DATA.

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RESUMO: Acquisition of wide-angle reflection and refraction seismic data along passive continental margins is essential to precisely constrain their crustal architecture and understand processes leading to their formation. Such data were acquired for the first time along northeastern Brazilian margin in 2014 as part of the SALSA (Sergipe-ALagoas Seismic Acquisition) project: a collaboration between the Department of Marine Geosciences (IFREMER: Institut Français de Recherche pour l'Exploitation de la MER, France), the Laboratory of «Oceanic Domain» (IUEM: Institut Universitaire et Européen de la Mer, France), the Faculdade de Ciências da Universidade de Lisboa (IDL, Portugal), the Universidade de Brasília (Brazil) and PETROBRAS (Brazil). Seismic shot, Multi-Channel Seismic acquisition (MCS) and Ocean Bottom Seismometers (OBS) deployments were performed by the N/O L'Atalante (IFREMER) along 12 profiles amongst which five were extended onshore by Land Seismic Stations (LSS). We will present here the initial results along three of these profiles (2 dip lines and 1 strike line) that image the deep crustal structure from the Tucano and Reconcavo Basins onshore to the Jacuipe Basin offshore. P-wave velocity models were constructed based on the joint interpretation of multi-channel and wide-angle seismic data using the RAYINV software. Velocity models show that Tucano and Reconcavo Basins are underlain by well-defined continental crust from clear upper and lower crust refracted arrivals and reflected arrivals on the Moho. Velocities appear slightly lower than normal in both the upper and lower crust just beneath the rifted basins and the geometry of the Moho is flat at 39 km depth. Toward the coast, continental crust thins very sharply to less than 5 km thick below the Jacuipe basin. The necking and transition zones are also characterized in depth by a continuous and anomalously high velocity crustal body that extends offshore up to the normal oceanic crust. Crust seems absent locally coinciding with lower than normal mantle velocities. Finally the Jacuipe Volcanic complex corresponds to an area of very thin (~ 5 km thick) and anomalously high velocity crust underlain by unaltered mantle. In regards of the variations observed in the velocity structure of the Tucano rift and Jacuipe margin we will discuss the nature of these bodies and their geodynamic implications.

PALAVRAS-CHAVE: TUCANO RIFT, JACUIPE MARGIN, MARGIN
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