



Structure of upper oceanic crust in the western South Atlantic from full-waveform velocity modeling

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The upper portion of oceanic crust is extremely difficult to image using conventional seismic imaging methods due to its complex internal structure and scattering of seismic energy on rough seafloor or basement topography. Recent advances in seismic data processing allow us to build high-resolution velocity models of the upper oceanic crust that can provide us with clues on physical properties and seismic structure. We perform acoustic full-waveform inversion of long-offset streamer data to explore the seismic velocity structure at the Mid-Atlantic Ridge (MAR) both on and off-axis. The results will build upon previous work revealing the regional seismic velocity distribution of 0-71 Ma upper oceanic crust at 31°S, between the MAR and the Rio Grande Rise. Two important issues that will be addressed are the nature of the seismic layer 2A/2B boundary and the spatial distribution of faults, which may give clues on the geometry of hydrothermal circulation.