

Project Abstract

From the NSF funded BOLIVAR (Broadband Onshore-offshore Lithosphere Investigation of Venezuela and the Antilles arc Region) project from 2003-2005 in the southeast Caribbean, onshore-offshore seismic multi-channel (MSC) reflection data was collected as part of a multi-disciplinary investigation to examine how island arcs, marginal basins, and oceanic plateaus become accreted to continents. Through the use of Dynamic Graphics software EarthVision, the seismic data profiles that were collected were to be imported, compiled, and viewed in a three-dimensional environment. From the interpreted data profiles, the stratigraphic architecture and faults throughout the region were to be connected to help form a subsurface map and interpretation. Due to technical problems and limitations in the current version of EarthVision, a subsurface map for the seismic profiles from the BOLIVAR project was not fully completed, but initial modeling results will provide a framework for further development of the 3D mapping project. Initial results include a 3D model of topography and bathymetry of the southeast Caribbean as well as the interpreted Moho discontinuity. In the future, it is planned to either import the 2D seismic profiles in an alternative format or drape images of the reflection profiles into the model. The best alternative to using image files would be to build a 3D reference grid in which the 2D seismic profiles are imbedded and then import these grids into EarthVision for 3D interpretation.