



ROSE: Coincident seismic and hydrographic survey of the Gulf Stream and Slope waters southeast of Nova Scotia

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In the summer of 2007, the Government of Canada contracted a 6900 km multi-channel seismic (MCS) survey over the Sohm Abyssal Plain, south of Nova Scotia, with the intent to extend Canadian jurisdiction of the seabed and its natural resources under Article 76 of the United Nations Convention on the Law of the Sea (UNCLOS). The survey lines crossed a major oceanographic boundary between the Gulf Stream and the slope waters. The primary goal of our research undertaken on R/V Endeavor during the 2007 cruise EN438 was to collect a hydrographic dataset coincident with a part of the UNCLOS MCS survey. We collected ~350 km of hydrographic data at high spatial density (500-1500 m) using shipboard XBTs and CTDs. In addition to analyzing the MCS data to gain quantitative understanding about the recorded water column reflections, we plan to use XBT/CTD data to produce reflectivity sections and carry out waveform modelling to study spatial resolution limits of seismic oceanography. We also recorded a repeat XBT/CTD transect to investigate short period temporal effects on seismic imaging in this dynamic environment. From our preliminary analysis, we present the poststack migrated seismic profiles together with the coincident hydrographic data, and we compare the seismic images to synthetic sections generated from the hydrographic data.