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AB: Seismic oceanography is a discipline that studies physical properties of the oceanic water from multichannel seismic reflection data. Multichannel seismic reflection data image mesoscale structures in the ocean like fronts, eddies and currents with lateral resolution on the order of 10 m. These data reveal the lateral coherence of thermohaline oceanic structures as well as the interactions with the topography. This discipline uses the same instrumentation and

software for data acquisition and processing that marine geophysics, but it uses the first 5–6 seconds of the seismic records, which travel through the water column. The "Juan de Fuca Ridge to Trench" survey was carried out in the Cascadia Basin during last June–July 2012. The water column above Cascadia Basin is affected by the California Current System. There were two research vessel involved in this geophysical survey: RV Marcus Langseth, which was in charged of the multichannel seismic reflection data acquisition and the RV Oceanus, which was in charged of the ocean bottom seismometers. We had the opportunity of acquiring XBTs and XSVs simultaneously to the seismic acquisition from the RV Marcus Langseth and the RV Oceanus offered to us the opportunity of doing CTD space-coincident casts of the seismic acquisition, in order to compare the seismic images with the temperature, salinity and sound velocity data. We present in this work the seismic images of two eddies that were recorded in the survey and their comparison with the physical properties of the ocean.

DE: [0930] EXPLORATION GEOPHYSICS / Oceanic structures

DE: [0935] EXPLORATION GEOPHYSICS / Seismic methods

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