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A new Shallow Water Cabled OBS System off California

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During the summer and fall of 2013 we installed a turnkey cabled network of four combination broadband velocity/acceleration ocean bottom sensors (OBS) on the sea floor near Point Buchon in the Northeastern Pacific Ocean off the coast of Central California. We implemented a novel network design by daisy-chaining the instruments to one single multistranded cable. The signals of each station are digitized in-situ and then transmitted via dedicated optical fiber links inside the cable to a shore station. From there they are fed in real time via a cell phone modem into several seismic networks in California. The goal of this dense network is to monitor the microseismicity of two offshore faults running parallel to the strike of the San Andreas Fault. However, because the network is installed in rather shallow water near the coast, the action of waves and swell at the sea surface affect the sensor registrations much stronger as compared to the typical deep water installation of OBS equipment. We will report about the challenges of installing and maintaining the network and present some initial results.