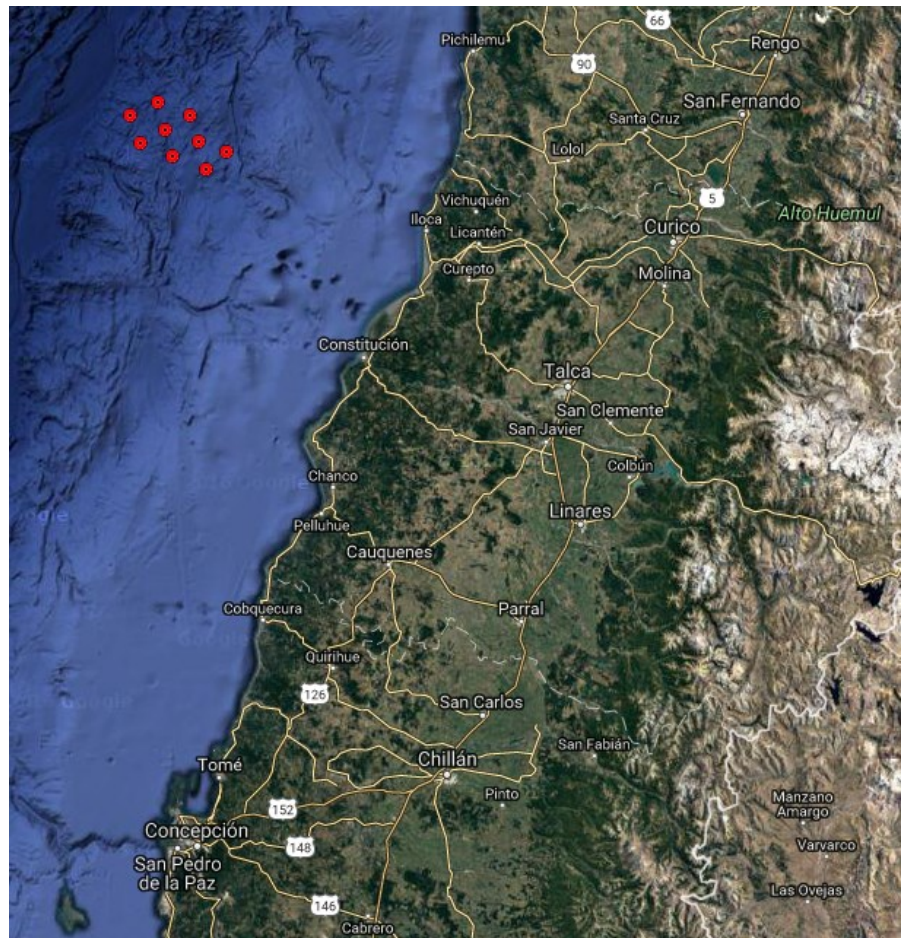


OBSIP Experiment Archive

Year:	2012
Experiment Name:	The 2010 Maule, Chile Earthquake: Project Evaluating Prism Post-Earthquake Response (Chile-PEPPER) Post-seismic response updip of the Chilean megathrust earthquake of February 27, 2010
Principal Investigator(s):	Anne Trehu (OSU)

Experiment Summary: (Taken from the NSF Abstract Award #[1130013](#)): Among the hazards that arise from large earthquakes are the direct effects of great earthquakes, as evidenced by last year's devastating earthquake off Japan, and local and distant effects of tsunamis. Though they pose enormous risks to life and property in highly populated areas, neither of these phenomena is as yet well understood. The recent great earthquake in Chile did not generate a large tsunami, probably because the rupture produce a surface break at the seafloor. Available evidence suggests that slip did not occur at depths shallower than about 30 km down-dip from the trench. Accordingly, the proponents of this project infer that the outer accretionary wedge that lies along the Chile coast above the rupture zone behaves as a poro-elastic medium that will adjust over time to the new stress regime caused by the earthquake. The aim of the proposal is to observe the effects of this transient adjustment, by deploying a focused array of ocean bottom seismographs equipped with flow meters. The principal broader impact of this effort is considerably improved understanding of megathrust earthquakes and tsunamis.



The ChilePEPPER experiment will utilize the seismometer and flow meter data to explore the slip behavior of the seafloor in this subduction zone.

Continued Next Page

OBSIP Experiment Archive

...Continued

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Cruises:

5/4/2012 - 5/18/2012:

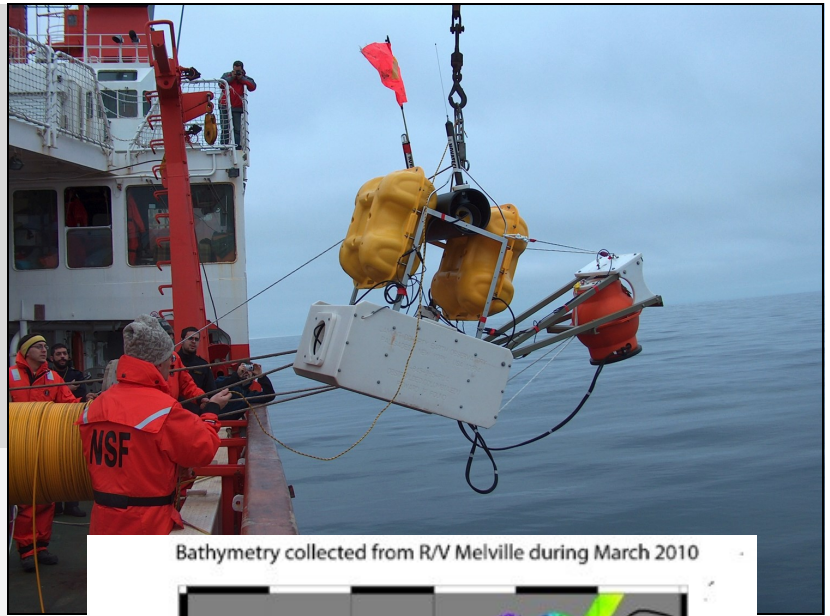
10 Broadband OBSs with integrated flow meters are deployed from the R/V Melville in the zone of greatest slip during the February 27 2010 Maule earthquake.

3/15/2013 - 3/22/2013:

Seismometers recovered.

Data:

Data from all OBSIP instruments deployed will be archived under temporary network code [Z4](#) at the IRIS DMC.



Downloads/Links:

[Deck Plan](#)

[Cruise Report - LDEO deployment](#)

[Cruise Report - LDEO recovery](#)

[Dr. Anne Trehu's website](#)

