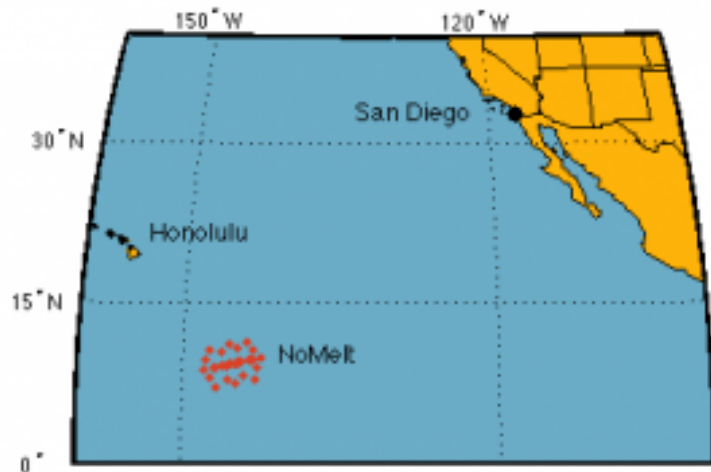


# OBSIP Experiment Archive

<b>Year:</b>	2011
<b>Experiment Name:</b>	NoMelt Structure and evolution of the oceanic lithosphere/ asthenosphere
<b>Principal Investigator(s):</b>	Jim Gaherty (LDEO), Lead Dan Lizarralde (WHOI) John Collins (WHOI) Rob Evans (WHOI) Greg Hirth (Brown)

**Experiment Summary:** (Taken from the NSF Abstract Award #[0928270](#)): The lithosphere is the Earth's rocky outer shell. Lithospheric 'plates' drift over the Earth, carrying the continents, and large earthquakes and volcanic eruptions occur where the plates interact. Hence, understanding the lithosphere is central to our understanding of how the Earth works. The oceanic lithosphere, which covers some 70% of the Earth, is central to our understanding of global geodynamics and plate tectonics, but our understanding of its character (including composition and thickness) and the factors that control them is poor. Variations of seismic and electrical properties of the Earth are indicators of compositional variations. The aim of this project is to use the most up-to-date seismic and electromagnetic methods to address two fundamental questions about the lithosphere that lies beneath the Pacific basin: What factors control the seismic structure of the lithosphere, and what defines the base of the lithosphere? The broader impacts of this work include improved understanding of factors such as the composition of lithosphere that affect volcanic eruptions, great earthquakes and tsunamis that threaten heavily populated areas in Alaska, the Pacific Northwest, and elsewhere around the Pacific Rim.

*Continued Next Page*



Location of NoMelt study area.

# OBSIP Experiment Archive

...Continued

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## Cruises:

*11/26/2011 - 12/29/2011:*

61 SIO and WHOI ocean-bottom seismometers deployed on the R/V Langseth. 30 out of 34 short period instruments recovered after active source shooting is complete.

*12/18/2012 - 1/15/2013:*

25 of out 27 SIO short period and long period ocean-bottom seismometers recovered on the R/V Melville.

## Data:

Data from all OBSIP instruments deployed is archived under [network code ZA](#) and assembled dataset ID [#12-001](#) at the IRIS DMC. This data has been made public two years after collection, per NSF policy, and is accessible using all IRIS DMC request tools.

- 24 WHOI short period stations (200 and 1 sps seismic and hydrophone channels)
- 3 SIO short period stations (200 sps seismic and hydrophone channels)
- 22 SIO long period stations (50 sps)

## Downloads/Links:

[NoMelt Website](#)

[Cruise Blog](#)

[Nature](#)

[LDEO News](#)

[Earth Magazine](#)