



## **Integrated Borehole Geodetic and Seismic Networks: A Developing Tool for Earth Science.**

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The Plate Boundary Observatory (PBO), part of the NSF-funded EarthScope project, is designed to study the continuous three-dimensional strain field resulting from deformation across the active boundary zone between the Pacific and North American plates in the western United States. A component of this observatory is a network of 78 borehole observatories consisting of some combination of borehole strainmeters, borehole seismometers, GPS, tiltmeters, pore pressure, thermal measurements and meteorological data. This network, the largest of its kind has allowed for many new observational opportunities including increased temporal and spatial resolution of slow slip events, detection and modeling of possible earthquake precursors, and new observations about the environment at the Yellowstone hot spot.

A large integrated network like this also present new challenges related to data access, formats, analysis, calibrations methods, as well as integrated research using such data.

This presentation will highlight new discoveries from the EarthScope community using this network and discuss the issues related to using and maintaining a large integrated network.