

Summary of the seismology discussions:

- 1) Intercomparison of various approaches to locating tremor to better understand to what degree results depend on assumptions.
 - a. Make a dataset available for a large, complex event
 - b. Workshops to discuss results
 - c. Use the same episode for geodesy technique calibration

- 2) Some science questions:
 - a. Quantify additional tremor parameters (e.g. frequency range, amplitude, source size)
 - b. What really is the spatial and temporal relationship between slow slip and tremor? [e.g. does slow slip extend updip of the the updip limit of tremor]
 - c. Earthquake swarms vs. tremor? Are they fundamentally different or is tremor a swarm with very small inter-event time?

3) Instrumentation needs:

- a. Develop instrumentation to facilitate deployment of dense arrays.
- b. Hybrid arrays with a few broadbands (to detect VLF) and many short period instruments (to map tremor migration).
- c. Quieter sites – need to determine minimum effective borehole depth.
- d. Monitor effects of wind and weather to (e.g. weather stations being added to TA stations)
- e. Fill in data gap from 100s – 1 day (strainmeters vs tiltmeters)

4) To facilitate studies:

- a. Develop easily searchable database on global observations.
- b. Develop secondary data streams that take care of initial steps (e.g. PDF for input to PQLX, instrument response corrected envelope functions)
- c. Processing directly connected to data streams.

5) Community experiment – massively instrument the region to capture the next Cascadia event on Oct 25, 2011

6) What else is needed? A detailed model of the crust hosting tremor and slip.

- a. Seismic imaging with man-made and natural sources to determine determine reflectivity, P and S velocity structure,
- b. MT studies for electrical conductivity,
- c. Potential field studies for density, magnetic properties,
- d. Surface geology and laboratory measurement on rocks.

7) What else is needed? Move into the ocean to get across the deformation front.

- a. Seismometers – coming with the ARRA initiative
- b. Geodesy – vertical motion likely to be more achievable on the spatial scale needed.