

SCEC Geodetic Transient Detection Workshop
Tuesday, December 6, 2011
12:30-1:30, Marriott Foothill Room

In Attendance:

Gareth Funning
Robert Granat
Tom Herring
William Holt
Kang Ji
Sharon Kedar
Rowena Lohman
Jessica Murray-Moraleda
Matt Wei

Goal: Discuss current state of automated detection efforts, issues with adapting existing codes to the testing center framework and future directions.

Background: The Transient Detection Test Exercise is a project in support of one of the SCEC3 priority science objectives, to “develop a geodetic network processing system that will detect anomalous strain transients.” Systematic searches of geodetic data for transient signals has obvious applications for network operations, hazard monitoring, and event response, and may lead to identification of events that would otherwise go (or have gone) unnoticed.

Earlier phases of this effort involved the distribution of datasets made up of synthetic data with unknown underlying signals to the participants. Each phase involved progressively more realistic noise characteristics and a wider range of signals sizes, locations and sources. As of this summer, we have one automated, simple detector running on a daily basis through the testing center that was developed as part of the Collaboratory for the Study of Earthquake Predictability (CSEP), and expect to have 2-3 more running this spring.

Meeting: This meeting began with a presentation by Lohman on the simple algorithm that is currently running in the center and issues encountered with adapting it to the system. Participants questions focused on several topics, including the potential for inclusion of other auxiliary data sets, restrictions imposed by the center (such as a requirement for reproducibility of the results, availability of the codes to the public, etc), and the general working environment available to them in the center.

We ended with a discussion of the dissemination of results, and agreed that a special issue with individual papers by each participant would be the most desirable outcome. Lohman was tasked with contacting journals about such a special issue. If no suitable journal is found, a single article with multiple authors was also agreeable to the participants.