

2009 SCEC Annual Report

USB Accelerometer Distribution to K-12 Schools

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Overview

Funds provided by SCEC were used to improve the interactive education and outreach features of the Quake-Catcher Network, including QCNLive and web interfaces and to support the outreach efforts of the PIs to visit schools and museums. The project was a collaborative effort between PIs Cochran and Lawrence and their respective research groups. At UC Riverside, four graduate students and one undergraduate student took part in the outreach efforts and activity development. At Stanford, a graduate student and an undergraduate intern helped to distribute sensors to K-12 schools.

Sensor Distribution

The QCN sensors and software provide a fun, interactive method of teaching Earth Science and Seismology to students and the general public. Sensors were provided to teachers at highly subsidized rates - \$5/sensor (we would provide them for free, but many teachers would request and not use them). The sensors were distributed to K-12 schools throughout California and the United States. We also developed a program to provide a classroom set of sensors to teachers for several weeks while they teach the seismology portion of the curriculum. This program has been very successful and we often have multiple requests for the sensor set at the same time.

School and Community Center Presentations

As part of the project, Cochran and the team students gave presentations at schools around the Los Angeles region. Presentations were made to students ranging in age from second grade through high school. The group also created kinesthetic classroom activities that will be posted on the QCN website. The activities are designed for sixth grade classrooms and target the California state science standards. The activities encourage students to investigate different seismology concepts using the QCN sensors. We also participated in the EPICenter program that is being led by Bob deGroot. Several museums have exhibits planned that will incorporate QCN sensors. In addition, we hosted a booth jointly with SCEC E&O and San Bernardino County Museum at the California Science Teachers Association (CSTA) annual conference that was held in October 2009. At the same conference, Cochran gave an hour presentation describing QCN and demonstrating the sensor and software to science teachers. At the end of the workshop most of the teachers requested sensors and were disappointed that we did not have them immediately available at the conference (sensors are mailed to the teachers) as they were excited to try them out.

QCNLive Interactive Software

A large portion of the effort went towards developing the interactive software that is used in classroom activities. The interactive software, QCNLive, was upgraded to more clearly display the real-time output of the sensor. The axes were changed so the amplitude is shown in m/s^2 rather than counts for all of the different sensor types that we support (Apple laptop, Lenovo Thinkpad, JoyWarrior, and MotionNode). In addition, we provided a record button so that students can record the data in either ASCII or SAC format. A jpg image of the current screen can also be easily generated. Figure 1 below shows screenshots of the updated QCNLive interface.

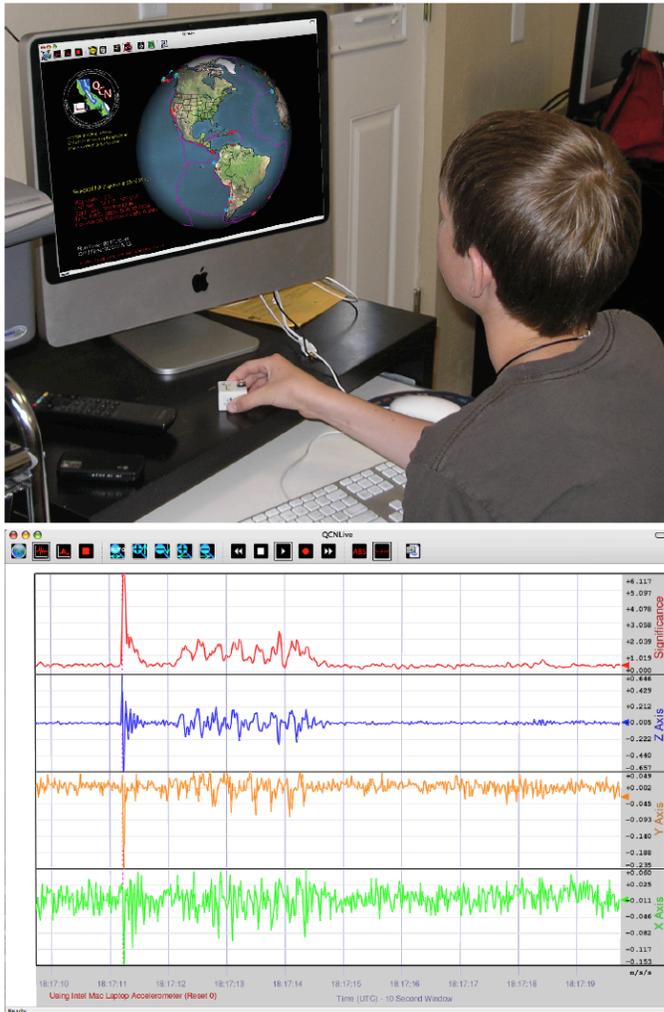


Figure 1. Top panel: A student using the QCN sensor and software. Bottom panel: New QCNLive sensor output interface.