



## **Monitoring seismic wave speed changes during and after earthquakes near Parkfield: location and depth dependence**

Céline Hadziioannou (1), Sarah Hable (1), Anne Obermann (2), Ozgun Konca (3), and Michel Campillo (4)

(1) LMU Munich, Geophysics, Munich, Germany (hadzii@geophysik.uni-muenchen.de), (2) Swiss Seismological Service (SED), ETH, Zurich, Switzerland, (3) Kandilli Observatory and Earthquake Research Institute, Istanbul, Turkey, (4) ISTERre, Grenoble, France

We measure wave speed changes near the San Andreas fault zone during and after the 2004 Parkfield and 2003 San Simeon events using both horizontal and vertical component records.

Using ambient noise correlations, we calculate the 9 component cross-correlation tensor for each pair of stations. Using these correlation functions, wave speed changes are measured in multiple frequency bands between 0.2 Hz and 4.0 Hz. Combining measurements performed on all 9 components provides us with a better signal-to-noise ratio, which allows us to measure wave speed changes for smaller subsets of stations and at different time windows in the coda.

The co-seismic wave speed drop for both events behaves differently on each side of the fault zone. Moreover, the post-seismic recovery behavior of the wave speed change is frequency dependent and differs for the San Simeon event and the Parkfield event. The coda lapse time dependence of the waveform changes allows us to roughly localize the area of changed seismic wave speed.