



Ambient noise monitoring of the 2004 Parkfield event using 9 cross-correlation components

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Noise correlations are used increasingly often to monitor active fault zones. However, many studies so far focus on the vertical component records. Here we measure wave speed changes at the San Andreas fault zone during the 2004 Parkfield and 2003 San Simeon events using both horizontal and vertical component records.

We calculate all 9 cross-correlation component combinations 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 roughly localize the change.

We observe different amplitudes of the velocity drop coseismic to the 2004 Parkfield event for each side of the fault zone. Moreover, the postseismic recovery behavior of the velocity change is frequency dependent and differs for the San Simeon event and the Parkfield event.