



Real time monitoring of the Guerrero seismic gap deploying a real time seismo geodetic network

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The project calls for the deployment of 12 to 15 instruments along the Guerrero gap with an average spacing of 20 to 25 km. The stations communicate data in real time via various communications means. The purpose of the network is to collect information about ground displacement and acceleration along the coast of the Guerrero gap in real time with a sampling rate of at least 100 samples per second of acceleration and 2 Hz of displacement data. It is expected to have an average error in displacement of ± 1.5 cm. The geodetic data will be also corrected using the recorded strong motion data based on a Kalman algorithm that estimates additional corrections in a predictive manner. The seismic instruments are high-resolution, forced balanced accelerographs. The objective of the project is to maintain a constant surveillance of the subduction zone along the Guerrero gap. Stations are deployed from Petatlán to the boundary between the states of Guerrero and Oaxaca at as regular spacing as allowed by site availability and communication means. One of the missions of the array will be to estimate the moment magnitude immediately after the occurrence of a large or great earthquake. Also, it is expected that the seismogeodetic network will provide information about the degree of coupling and the evolution of the seismic and geodetic behavior of the Guerrero gap. Together with the data of the Mexican Seismological Service (*SSN*) and the Seismic Early Warning System (*SASMEX*), the information gleaned from the array will help guide immediate civil protection measures. There are now a large number of seismic and geodetic stations in this same region: under water, on the coast and farther inland. The project also considers complementing the real time geodetic information with routine *InSAR* analyses.