

## **IMASW VS-DEPTH MEASUREMENTS AT CEUS SEISMIC STATIONS FOR USE IN GROUND MOTION CHARACTERIZATION OF THE 2011 PRAGUE, OK EARTHQUAKE**

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This presentation will discuss Interferometric Multi-channel Analysis of Surface Waves (IMASW) geophysical field surveys performed at eleven CEUS seismic stations located within a 2° radius surrounding the Oklahoma City region which recorded the 6 November 2011 Mw 5.6 Prague, Oklahoma earthquake. The new active source shallow seismic (shear-wave) measurements at the seismic monitoring station locations were used to determine horizontal to vertical spectral ratios (HVSR), Vs30, Vs-depth structure and develop NEHRP Site Classification and calculate empirical ground motion amplification functions. The information was used in a seismological site response investigation which employed existing ground motion data at the seismic monitoring stations from the 2011 earthquake.

The field-based Vs survey used 15 iSeis© Sigma4 three-component seismographs with varying array geometries and active sourcing to obtain new site-Vs structure profiles and HVSR at the seismic monitoring stations. In addition, the three component seismic data were processed and analyzed to develop NEHRP Soil Site Classifications, and calculate site-specific ground motion amplification functions. Local soil classes and/or velocity profiles are generally not available for CEUS stations, and obtaining site measurements helps calibrate or otherwise verify amplification factors identified using the Hartzell and Mendoza (2011) waveform-analysis approach. The surface-wave dispersion data provide site-specific 1D shear-wave velocity measurements that are compared directly with the inversion results to evaluate the performance of the estimated site amplification.