

Lg Attenuation in the Central and Eastern United States revealed by the Earthscope Transportable Array

Andrea Gallegos

Data from EarthScope's Transportable Array Network (TA) were used to generate a new and more comprehensive attenuation map of the regional Lg phase for the central and eastern United States (CEUS). The two-station method, which eliminates source effects, was used to measure interstation Q. Regional Lg phases generated by 39 events recorded from 2010 to 2012 resulted in 76,937 interstation Q measurements. Preliminary results show northeast trending high Q regions (low attenuation) through the majority of the CEUS. Regions of low Q (high attenuation) were seen along the Minnesota-Wisconsin border, the Mississippi embayment, and along the Oklahoma-Texas border. These results are the first step in creating a more detailed model of crustal attenuation in the CEUS. This model can improve ground motion predictions of future large earthquakes for more accurate hazard assessment and improve overall understanding of the structure and assemblage of the CEUS.

