

Comprehensive Seismic Monitoring: Developments at the USGS National Earthquake Information Center

The United States Geological Survey's National Earthquake Information Center (NEIC) operates real-time seismic monitoring systems that seamlessly integrate local, regional, national, and global seismic data for routine monitoring of earthquake activity and response to significant seismic events. These systems use real-time seismic data from more than 2,000 stations operated by more than 130 seismic monitoring organizations worldwide. The NEIC has automated the concepts of self-discovery of waveform data and station metadata, processing subsystem self-configuration of pickers, associators, correlators, and quality assurance testing. Implementing these concepts ensures NEIC uses the best available data and information to produce rapid and accurate reporting of earthquake source parameters and impact assessment. NEIC is working toward better integration of seismological source parameters (e.g. calibrated relocations) and seismotectonic constraints (e.g. new velocity models, slab geometry) to further improve location accuracy. We will provide illustrative examples utilizing these concepts.

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Track Classification: 3. Advances in sensors, networks and processing