

and Digitization of Soviet Peaceful Nuclear Explosions from Russian Legacy Analog Seismograms

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The Geophysical Survey of the Russian Academy of Sciences and Michigan State University are recovering, scanning, and digitizing the historic analog seismograms of Soviet Peaceful Nuclear Explosions (PNEs). The Soviet Union detonated 122 PNEs from the mid-1960s through the late 1980s. The PNEs were conducted in a wide range of geologic settings and geographic locations, thus representing a unique data set for geophysical studies. These explosions were well recorded by the regional seismic networks, where thousands of seismograms are retained. We are generating high resolution scans of the seismograms and digitizing the waveforms for analysis. Along with the seismograms, we are recovering the original station calibrations, responses, and metadata for each station and developed code to generate Dataless SEED files for use with the digitized data. Most seismograms are from short period instruments, and when combined with the correct station calibration information, the digitization process accurately recovers ground motion signals to at least 5 Hz. The resulting digital waveforms are of high quality and are usable for quantitative research.

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Promotional text

This project is producing research quality seismic waveforms of Soviet Peaceful Nuclear Explosions (PNE) through the digitization of analog seismograms held in Russian archives.

Oral preference format

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