

2.2-P10. IMPROVING THE GROUND TRUTH LOCATIONS OF SOVIET PEACEFUL NUCLEAR EXPLOSIONS

From the 1960's through the late 1980's, the Soviet Union conducted 122 Peaceful Nuclear Explosions across its territory. These PNEs are now very important to the seismological community as Ground Truth (GT) events. The PNE locations are widely distributed, thus GT0-1 locations, meaning that the true location is known to within 1 km or better, are used as calibration events for developing seismic velocity models, model validation, seismic discrimination, etc. The monitoring research community generally utilizes PNE locations from Sultanov et al. (1999) as known or verified GT events, though in reality there are errors and some PNEs are indicated as poorly located. We have determined or validated GT0-1 locations for more than 60 of the Soviet PNEs. Some PNE locations published as GT1 or better are found to have larger errors, the greatest of which exceeds 15 km. Our locations were determined using an integrated approach encompassing published literature, internet searches, analysis of open satellite imagery and regional seismic data. In addition, several PNE sites in Ukraine and Kazakhstan were visited allowing GPS coordinates to be obtained in the field.

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Track Classification: 2. Events and their characterization