ID: **P3.1-172** Type: **E-poster**

High Frequency Ground Motion Calibrations of Seismometers used at IMS Stations

Tuesday, June 20, 2023 10:01 AM (1 minute)

Calibration of seismometers used in nuclear explosion monitoring systems, such as the International Monitoring System, is important for providing confidence in the measurements of ground motion and the resulting analysis that is performed on the waveform time series data. Six models of seismometers widely used at International Monitoring System stations have been calibrated using high precision vertical and horizontal shake tables that utilize metrologically traceable measurements of instrument motion using a laser vibrometer. The results of these ground motion calibrations are compared to the instruments' nominal response provided by manufacturers and to their electrical calibration results which are obtained in a similar manner to in-field calibrations. This study focuses on the high frequency (up to 50Hz) performance of the instruments and offers insights into how the instruments perform.

SNL is managed and operated by NTESS under DOE NNSA contract DE-NA0003525

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Promotional text

Accurate seismometer calibrations are essential for obtaining accurate ground motion data. This study shows how high precision shake table systems can be used to calibrate instruments and offers insight into the high frequency performance of seismometers used at IMS stations.

Oral preference format

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Session Classification: Lightning talks: P1.2-1, P3.1, P3.4, P4.5

Track Classification: Theme 3. Monitoring and On-Site Inspection Technologies and Techniques: T3.1 Seismic, Hydroacoustic and Infrasound Technologies and Applications