ScholarWorks@UA collection

Supplemental analysis for: "Seismic response of Nenana sedimentary basin, central Alaska"

Kyle Smith

April 17, 2020

Attribution: This file is part of a collection archived at ScholarworksUA (`https://scholarworks.alaska.edu/`) (*Smith*, 2020). It supports a manuscript in preparation for submission *Smith et al.* (2020).

Description of files

A summary of files in the collection is listed in the following table:

file name	description
nbsr_scholarworks.pdf	
nenanabasin_metrics.pdf	Correlations between frequency-dependent earthquake ground motion metrics (duration, radiated energy, PGD, PGV, and PGA) and basin depth.
nenanabasin_spectral_ratios_LFBand.pdf	Earthquake spectral ratios of stations in Nenana and non-basin reference station on the low-frequency band. See *Smith et al.* (2020) for sorting order of earthquakes and stations.
nenanabasin_spectral_ratios_LFBand_N.pdf	Pre-earthquake spectral ratios of stations in Nenana and non-basin reference station on the low-frequency band. See *Smith et al.* (2020) for sorting order of earthquakes and stations.
nenanabasin_spectral_ratios_HFBand.pdf	Earthquake spectral ratios of stations in Nenana and non-basin reference station on the high-frequency band. See *Smith et al.* (2020) for sorting order of earthquakes and stations.

- **nbsr_scholarworks.pdf**

  this file: summary of collection

- **nenanabasin_metrics.pdf**

  - Figures M1, M3, M5,...M43 are the **matrix plot** of correlations of **local** earthquake metrics and basin depths. Earthquakes are sorted by Table 1 of *Smith et al.* (2020).
  - Figures M2, M4, M6,...M44 are the **scatterplots** of **local** earthquake metrics vs basin depth for the maximum correlation of all 28 frequency bands. Earthquakes are sorted by Table 1 of *Smith et al.* (2020).
  - Figures M45, M47, M49,...M85 are the **matrix plot** of correlations of **regional** earthquake metrics and basin depths. Earthquakes are sorted by Table 1 of *Smith et al.* (2020).

- Figures M46, M48, M50,…M86 are the **scatterplots** of **regional** earthquake metrics vs basin depth for the maximum correlation of all 28 frequency bands. Earthquakes are sorted by Table 1 of *Smith et al.* (2020).

- Figures M87, M89, M91, M93, and M95 are the **matrix plot** of correlations of **teleseismic** earthquake **P wave** metrics and basin depths. Earthquakes are sorted by Table 1 of *Smith et al.* (2020).

- Figures M88, M90, M92, M94, and M96 are the **scatterplots** of **teleseismic** earthquake **P wave** metrics vs basin depth for the maximum correlation of all 28 frequency bands. Earthquakes are sorted by Table 1 of *Smith et al.* (2020).

- Figures M97, M99, M101, and M103 are the **matrix plot** of correlations of **teleseismic** earthquake **S wave** metrics and basin depths. Earthquakes are sorted by Table 1 of *Smith et al.* (2020).

- Figures M98, M100, M102, and M104 are the **scatterplots** of **teleseismic** earthquake **S wave** metrics vs basin depth for the maximum correlation of all 28 frequency bands. Earthquakes are sorted by Table 1 of *Smith et al.* (2020).

- M105, M107, M109,…and M133 are the **matrix plots** of correllations of **local and regional** events sorted first by metrics and then subsorted by component. Earthquakes are sorted by Table 1 of *Smith et al.* (2020).

- M106, M108, M110,…and M134 are the **scatterplots** of **local and regional** earthquake metrics vs basin depth for the maximum correlation of all 28 frequency bands. Pages are sorted first by metrics and then subsorted by component. Earthquakes are sorted by Table 1 of *Smith et al.* (2020).

- **nenanabasin_spectral_ratios_ LFBand.pdf**

  - Figures SR1-SR11 are **low-frequency (0.1–0.5 Hz) earthquake** spectral ratios of all 16 stations to 5 reference bedrock stations for all 3 components. Events are sorted by Table 1 of *Smith et al.* (2020). The teleseismic events first show the P spectral ratio and then the S spectral ratio.

  - Figures SR12-SR14 are earthquake spectral ratios of all station-reference station pairs

- **nenanabasin_spectral_ratios_ LFBand_N.pdf**
  Same as previous but for **low-frequency (0.1–0.5 Hz) pre-earthquake seismic noise** spectral ratio.

- **nenanabasin_spectral_ratios_ HFBand.pdf**
  Same as previous but for **high-frequency (0.5–4 Hz) earthquake** spectral ratio.

References

Smith, K. (2020), Supplement to "Seismic response of Nenana sedimentary basin, central Alaska", ScholarWorks@UA at `http://hdl.handle.net/XXX/XXX` (last accessed XXX): descriptor file, figures of seismic noise spectra, ground motion metrics, and spectral ratios.

Smith, K., C. Tape, and V. Tsai (2020), Seismic response of Nenana sedimentary basin, central Alaska, *Bull. Seismol. Soc. Am.* (in prep.).