

ScholarWorks@UA collection

Supplemental analysis for: “Seismic response of Cook Inlet sedimentary basin, southern Alaska”

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Attribution: If you use these files, please cite *Smith* (2019) and *Smith and Tape* (2019a).**Description of files**

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

file name	description
<code>scholarworks_cookbasin.pdf</code>	
<code>cookbasin_noise_spectrograms.pdf</code>	Daily residual noise spectrograms for multiple years of data. See <i>Smith and Tape</i> (2019b) for processing information.
<code>cookbasin_eq_metrics_eq*sort.pdf</code>	Correlations between frequency-dependent earthquake ground motion metrics (duration, radiated energy, PGD, PGV, and PGA) and basin depth.
<code>cookbasin_spectral_ratios_eq*sort.pdf</code>	Earthquake and pre-earthquake spectral ratios of stations in Cook Inlet and non-basin reference station. Stations are sorted according to basin depth, and earthquakes are sorted according to the tag in the file name.

- **`scholarworks_cookbasin.pdf`**

this file: summary of collection, including, depth tests, beachballs, and subsets of waveform fits for double couple and full moment tensor solutions

- **`cookbasin_eq_metrics_eqmagsort.pdf`**

- Figure M1 is a plot of all non-zero basin depth for stations in the study region.
- Figures M2, M4, M6, . . . M68 are the matrix plot of correlations of earthquake metrics and basin depths. Earthquakes are sorted by magnitude.
- Figures M3, M5, M7, . . . M69 are the scatterplots of earthquake metrics vs basin depth for the maximum correlation of all 36 frequency bands. Earthquakes are sorted by magnitude.

- **`cookbasin_eq_metrics_eqdepsort.pdf`**

Same as previous but earthquakes are sorted by depth.

- **`cookbasin_eq_metrics_eqotimesort.pdf`**

Same as previous but earthquakes are sorted by origin time.

- **cookbasin_eq_metrics_eqdist2basinsort.pdf**

Same as previous but earthquakes are sorted by distance to the basin.

- **cookbasin_spectral_ratios_eqmagsort.pdf**

- Figure SR1 displays spectral ratio versus basin depth for all components on LFband and HFband.
- Figures SR2–SR10 show earthquake and pre-earthquake spectra for regional reference stations N19K, SLK and SSN on all components. Events are sorted by magnitude.
- Figures SR11–SR44 shows all station spectral ratios on Z for each event. Events are sorted by magnitude.
- Figures SR45–SR78 shows all station spectral ratios on R for each event. Events are sorted by magnitude.
- Figures SR79–SR112 shows all station spectral ratios on T for each event. Events are sorted by magnitude.
- Figures SR113–SR149 shows Z spectral ratios of all events for each station. Events are sorted by magnitude.
- Figures SR150–SR186 shows R spectral ratios of all events for each station. Events are sorted by magnitude.
- Figures SR187–SR223 shows T spectral ratios of all events for each station. Events are sorted by magnitude.

- **cookbasin_spectral_ratios_eqdepsort.pdf**

Same as previous but earthquakes are sorted by depth.

- **cookbasin_spectral_ratios_eqotimesort.pdf**

Same as previous but earthquakes are sorted by origin time.

- **cookbasin_spectral_ratios_eqdist2basinsort.pdf**

Same as previous but earthquakes are sorted by distance to the basin.

- **cookbasin_noise_spectrograms.pdf**

These show data coverage and time-dependent variations in seismic noise from the annual noise spectra in *Smith and Tape (2019a)*.

- Figures N1–N12 are vertical component spectrograms organized by basin stations, marginal basin stations, non-basin stations and other non-basin stations. Calculations of spectrograms and examples of spectrograms are in *Smith and Tape (2019b)*
- Figures N13–N26 are the spectrograms of all 3 components for each station.

References

- Smith, K. (2019), Supplement to “Seismic response of Cook Inlet sedimentary basin, southern Alaska”, ScholarWorks@UA at <http://hdl.handle.net/XXXX/XXXX> (last accessed XXXX): descriptor file, figures of seismic noise spectra, ground motion metrics, and spectral ratios.
- Smith, K., and C. Tape (2019a), Seismic response of Cook Inlet sedimentary basin, southern Alaska, *Seismol. Res. Lett.* (in prep).
- Smith, K., and C. Tape (2019b), Seismic noise in central Alaska and influences from rivers, wind, and sedimentary basins, *J. Geophys. Res. Solid Earth* (in review).