README

AlaskaDatasets/

Folder containing focal mechanism datasets and related products

This folder does not include the Alaska Earthquake Center’s (AEC) 5,899 focal mechanisms (Ruppert, written communication March 2023).

Please contact Natalia Ruppert at AEC for their data.

AlaskaMTs2.txt

SLU moment tensors (<https://www.eas.slu.edu/eqc/eqc_mt/MECH.NA/MECHFIG/mech.html>)

2999 earthquakes. Last accessed March 2023.

SLU moment tensors take precedence over AEC focal mechanisms for events contained in both.

CMT\_\*Alaska.txt

gCMT solutions for events not contained in AEC or SLU catalogs. There are some duplicates in CMT\_centralAlaska.txt, and there may still be some duplicates in …eastAlaska.txt and …westAlaska.txt

Crustal\_AKPaxes.txt

Format (compatible with gmt psxy): Longitude Latitude Pseudo-Aɸ SHtrend length

Pseudo-Aɸ: Faulting style for this event, following Zoback (1992) – NF=0.5, NS=1, SS=1.5, TS=2, TF=2.5

SHtrend: Maximum horizontal shortening direction, following Zoback (1992)

NF – B-axis trend

NS – T-axis trend+90°

SS1 – T-axis trend+90° (B plunge > 45, 20 < P plunge < 40, T plunge < 20)

SS2, TS, TF – P-axis trend

Length: set to 0.3 for plotting with GMT

WSM\_Alaska.txt

World Stress Map in-situ indicators

Format (compatible with gmt psxy): Longitude Latitude Pseudo-Aɸ SHtrend length

Length represents WSM quality ranking (A=0.3, B=0.2, C=0.1, D=0.05)

smoothPaxes.txt

Crustal earthquakes.

For each event, select all crustal events within 10 km epicentral distance, smooth P axis trends and pseudo-Aɸ with (2 km/epicentral distance) Gaussian weights

smootherPaxes.txt

Crustal earthquakes.

For each event, select all crustal events within 10 km epicentral distance, smooth P axis trends and pseudo-Aɸ with (5 km/epicentral distance) Gaussian.

Format (compatible with gmt psxy): Longitude Latitude Pseudo-Aɸ SHtrend length

smoothPaxesgrid.txt

Build ~11 km grid (0.1 degree latitude x 0.22 degrees longitude).

At each grid point, select crustal mechanisms within ~5.5 km. If there are any, average pseudo-Aɸ and SHtrends.

Format (compatible with gmt psxy): Longitude Latitude Pseudo-Aɸ SHtrend length