

Path-averaged seismic attenuation in southeast Alaska from USArray Transportable Array

Seismic attenuation is of considerable interest in southeast Alaska. With the advent of the Transportable Array in Alaska, it is now possible to investigate broad-scale path-averaged attenuation from a wealth of local earthquakes. The subduction of the Yakutat Block, an oceanic plateau, may lead to broad-scale structural contrasts across the two continental scale strike-slip faults in the region. Whether these contrasts in crustal structure can be detected with attenuation measurements at ~ 85 km spacing is unknown. We analyze 31 earthquakes < 20 km deep at 18 stations with 164 total t^* (integrated path attenuation) measurements. We find that four stations show moderate attenuation ($500 < Q_s < 1000$) and 11 stations show low attenuation ($Q_s > 1000$). Stations to the east of the Denali fault show lower attenuation than those between the Denali and Fairweather-Queen Charlotte Fault. There is considerable variation of high and low attenuation in the latter measurements from earthquakes of varying event-station azimuth. This hints at complex structure from the subduction of the Yakutat block and its interaction with the major strike-slip fault. We plan to expand the catalog and bin measurements by event-station azimuth to further investigate these observations.

