

Malaspina Glacier Active Seismic Experiment 2021

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Experiment Name: Malaspina Glacier Seismic Work June/July 2021

Purpose:

The purpose of this active seismic data collection is to detect subsurface ice in the Malaspina glacier forelands through refraction and surface-wave surveys. The location of the experiment is in the vegetated forelands of Malaspina Glacier near the town of Yakutat, Alaska, which are mostly composed of glacial outwash deposits and large amounts of remnant buried ice. The results will be used to evaluate active-source seismology as an exploration tool in this kind of environment and as a constraint for Time-Domain Electromagnetic (TEM) geophysical data.

Layout & Execution:

The active seismic data collected during the summer 2021 field campaign has 7 survey sites, a map of which is attached as 'SeismicSites.png'. The lat/long coordinates for the start and end of each linear array is attached as 'Seismic_Site_Coordinates.csv'. The system used for data acquisition was two Geometrics Geode 24-channel cabled seismographs using 40 Hz geophones. The sources included a 16-lb sledgehammer on steel plate and an 8-gauge Betsy Seis-gun. Detailed source location and array geometry for each site can be found in the '**GEOX**_SRC_LOG.csv' sheets. The SEG-Y files are separated by site and include geometry values in the headers.