Tonopah Test Range Surface Wave study

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Description of experiment

This is seismic data recorded on a 60-channel Geometrics reflection seismograph at three locations on the Tonopah Test Range in Nevada, USA. The three locations are on different rock/soil formations (Main Lake (a dry lake), Sidewinder Tuff, and Antelope Tuff). The goal was to get seismic shear velocity vs. depth using the ReMi method. Most of the shot gathers are not for single impulsive sources, but instead used multiple hammer blows per record. As such, the data is not suitable for seismic reflection processing. Data from vertical, in-line horizontal, and cross-line horizontal 4.5 Hz geophones, deployed in linear arrays with 1-meter spacing, was collected.

Dates

5/17/04 - 5/19/04

Line geometry

Main Lake: Two intersecting lines (roughly EW and NS) of 60 stations with 1-meter spacing
Sidewinder Tuff: One line (roughly N-S) of 60 stations with 1-meter spacing
Antelope Tuff: Two intersecting lines (roughly EW and NS) of 60 stations with 1-meter spacing

Geometry coordinate system

Header values are populated with relative distances in meters, with the southernmost and easternmost geophones being at x- and y-coordinate 0.
Main Lake: Center of arrays (WGS84) 37N 50.210' , 116W 44.101'
Sidewinder Tuff: 37N 37.667', 116W 35.453'
Antelope Tuff: 37N 38.686', 116W 34.4'

Sensors

Mark Products L28, 3-comp 4.5 Hz geophones

Acquisition system

Geometrics 60-channel Strataview

Observer's sheets

Scanned and attached

Source

Vertical impact hammer-on-plate. Also, some gathers used vehicle noise.

Data Reduction

The data was recorded in Seg2 format. The Seg-Y format presented here was made by importing the Seg2 data into Matlab, populating the headers with geometry and acquisition parameters, and exporting with SegyMat version 1.04 byThomas Mejer Hansen.

NOTE: Additional details are in the scanned observer's notes.