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Integrated workflow for surface-wave dispersion inversion and profiling

Sylvain PASQUET^{1,*} and Ludovic BODET²

While surface-wave prospecting methods are classically applied for the one-dimensional (1D) estimation of shear (S-) wave velocities (V_s), two-dimensional (2D) profiling still requires implementing specific processing and inversion tools that are not yet widely available in the community. We present here a MATLAB-based, free and open-source tool performing surface-wave inversion and profiling (SWIP) to retrieve 2D lateral variations of V_s from typical seismic shot records. The workflow is presented using real field data collected in a shallow hydrothermal system in Yellowstone National Park.

