

# MASW

(Multi-channel Analysis of Surface Waves)



## An Active Source Surface Wave Technique for Measuring Shear Wave Velocity ( $V_s$ )

### Advantages

- Non intrusive: no boreholes required, all equipment is deployed on the surface
- Fast: up to 1 km of MASW line can be collected in a day
- Portable and versatile: equipment can be deployed in most areas of open ground
- Insensitive to background noise when compared with other seismic methods such as refraction
- Sensitive to velocity inversions

### Specifications

- Twenty-four 4.5 Hz geophones deployed in a line at usually 1 - 3 m spacing
- Depth of investigation equal to approximately half the array length: up to 30 m
- Geophone array can be towed by a vehicle (landstreamer) or moved manually
- Source can be a sledgehammer or a vehicle mounted 40 kg Accelerated Weight Drop (AWD)
- Results can be displayed as 1D soundings, 2D profiles or a 3D model constructed from multiple profiles
- Topographic variation can be accommodated



### Applications

- Measurement of  $V_{s30}$  for Seismic Site Classification
- Inference of engineering parameters: Young's modulus, shear modulus
- Liquefaction Assessment
- Ground Improvement QA
- Drillhole Targeting

