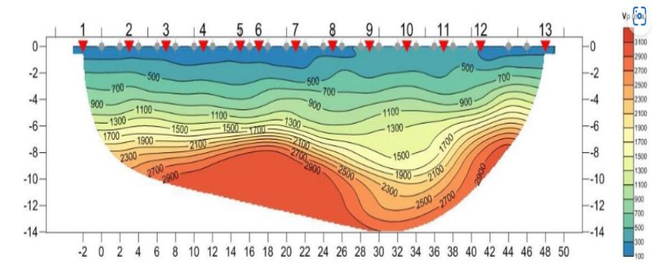
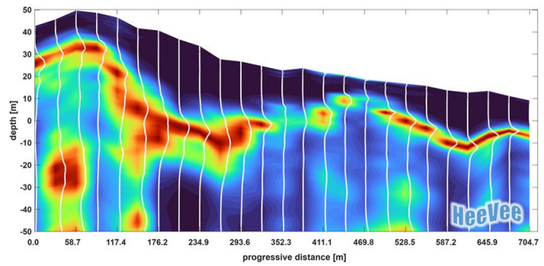
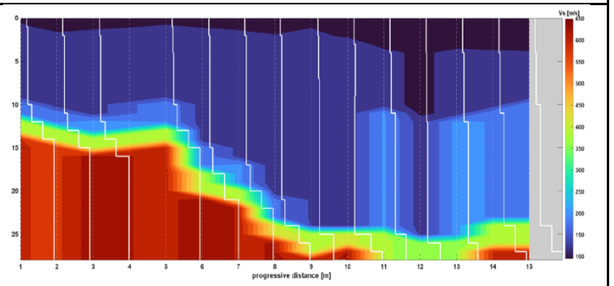
	A) SEISMIC REFRACTION TOMOGRAPHY	B) H/V CONTOURING	C) Vs CONTOURING FROM MASW
Main differences	 Colors indicate Vs or Vp values, from which you can infer the main seismic reflector geometries	 Colors are proportional to microtremor H/V amplitude, which maps the main seismic reflector geometries	 Colors indicate Vs values, from which you can infer the main seismic reflectors geometries
Hardware tools (Preferred instrumental configuration)	SoilSpy (multichannel acquisition system)	Tromino + trigger	SoilSpy (multichannel acquisition system) & Tromino + trigger are both fine
Software tools required to get the final result	A seismic refraction tomography software	1) Grilla + HeeVee (dedicated to this aim) *OR* 2) Grilla + a contouring software (e.g. Surfer, Matlab, Octave, Python similar)	1) Grilla + HeeVee OR 2) Grilla + a contouring software (e.g. Surfer, Matlab, Octave, Python similar)
Maximum investigation depth	¼ of the maximum array aperture (e.g., with 24 geophones at 5 m offset you reach a depth of approx. 28 m)	As deep as 0.1-0.2 Hz (which stand for several hundred meters)	In theory twice the array aperture. In practice much less (due to stratigraphic reasons). Depth can be considerably extended when MASW curves are interpreted together with H/V curves.
Field and office work	You need to set N geophones on the ground and acquire a seismic shot typically for each odd (or even) geophone (approx. $\frac{N}{2}$ shots). Then, you have to pick the first P or S wave breaks in the seismogram (N picks for each $\frac{N}{2}$ shot = $\frac{N^2}{2}$ breaks to pick).	You need to collect a number of H/V curves along the section of interest (the white vertical lines in the figure up here). The spacing between the recordings depends on the resolution you need and the duration of the recordings depends on the depth to reach. Having one (or more) MASW collected with Tromino + trigger even during the H/V acquisition provides more constraints to the results.	You need to collect a number of MASW dispersion curves along the section of interest. Each one will provide a Vs profile (the white vertical lines in the figure up here). The spacing between the recordings depends on the resolution you need.
Conclusions	This approach is preferred when one is interested in getting Vs values. Investigation depth is small compared to the other methods. Unless you have a land streamer (and you can use it at the site of interest), this is typically used to investigate rather short (compared to the other approaches) sections in detail.	This approach is preferred when one is interested in mapping the geometry of a seismic reflector and this is the approach reaching the largest depth with the lowest effort.	Using MASW alone to get Vs profiles and infer the bedrock depth from them is a high risk operation. Dispersion curves inversion or modeling in the absence of any other constraints is not much safe. Using MASW dispersion curves jointly fitted with H/V curves is much safer. However, working in this way takes more time than approach B (H/V CONTOURING), therefore we always recommend approach B (H/V CONTOURING) as the preliminary choice.

MoHo s.r.l.
c/o VEGA – Edificio Lybra
via delle Industrie 17/A - 30175 Marghera - Venice – ITALY
info@moho.world | www.moho.world