

SAN VITO N1 (T1_PUG)

Commitente		Comune di San Vito lo capo	
Oggetto dei lavori		Esecuzione di indagini geofisiche ai fini della redazione dello studio geologico propedeutico alla formazione del PUG del Comune di San Vito Lo Capo	
Nome base sismica		T1/PUG	
Coordinate	UTM	4226988.44 m	N 302478.13 m E
Strumento utilizzato		<i>Tromografo digitale TROMINO®</i>	
Operatore		Dott. Colla Vito	
Data e ora		04/02/2022, 11:09	
Nome file		T1/PUG	
Durata		40 min	
Frequenza campionamento		256 Hz	
Accoppiamento strumento-suolo		SUOLO	
Condizioni meteo	Vento	No	
	Pioggia	No	
Transienti nelle vicinanze	Traffico veicolare	Si	
	Pedoni	No	
	Altro	Presenza gregge di animali	



SAN VITO N1 (T1_PUG)

Instrument: TZB-0122/01-20

Data format: 32 byte

Full scale [mV]: 358

Start recording: 02/05/22 11:13:51 End recording: 02/05/22 11:53:51

Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN

GPS data not available

Trace length: 0h40'00". Analyzed 29% trace (manual window selection)

Sampling rate: 512 Hz

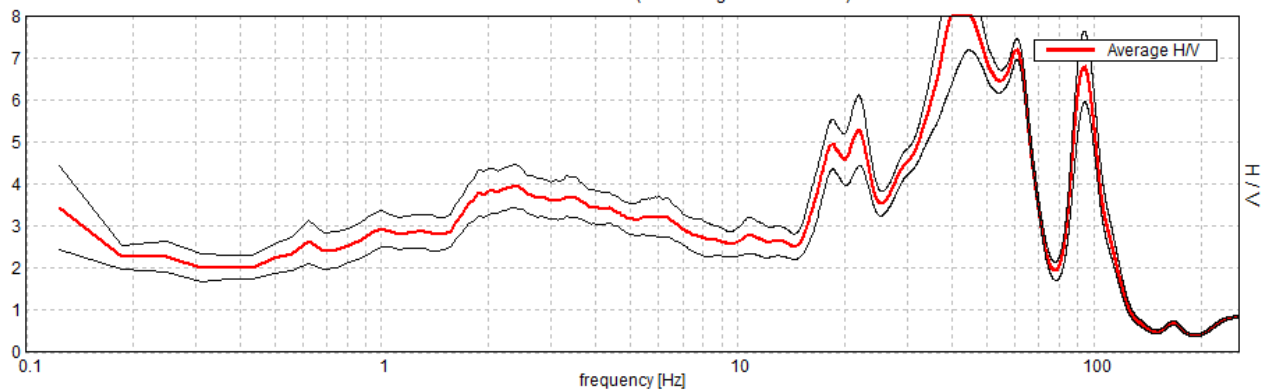
Window size: 10 s

Smoothing type: Triangular window

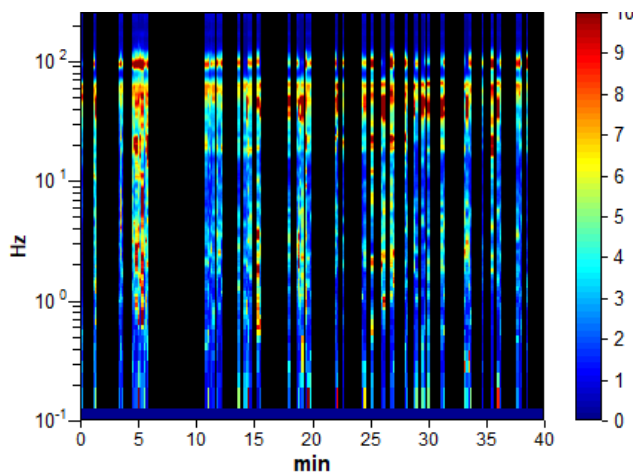
Smoothing: 10%

HORIZONTAL TO VERTICAL SPECTRAL RATIO

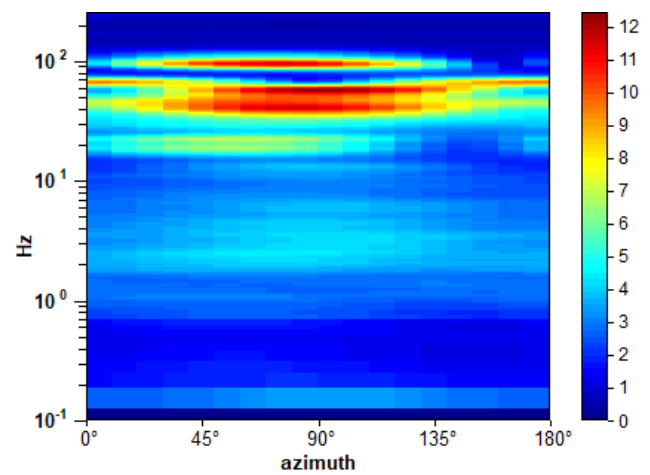
Max. H/V at 18.5 ± 7.93 Hz (in the range 0.0 - 20.0 Hz).



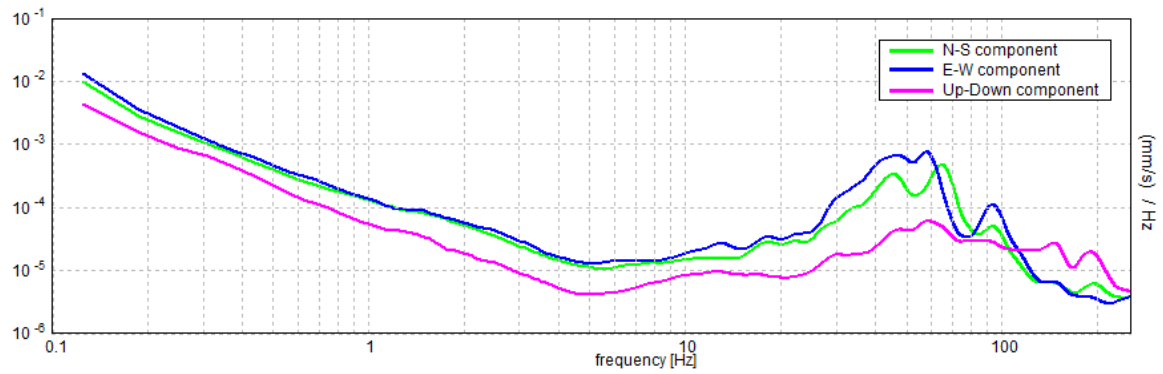
H/V TIME HISTORY



DIRECTIONAL H/V

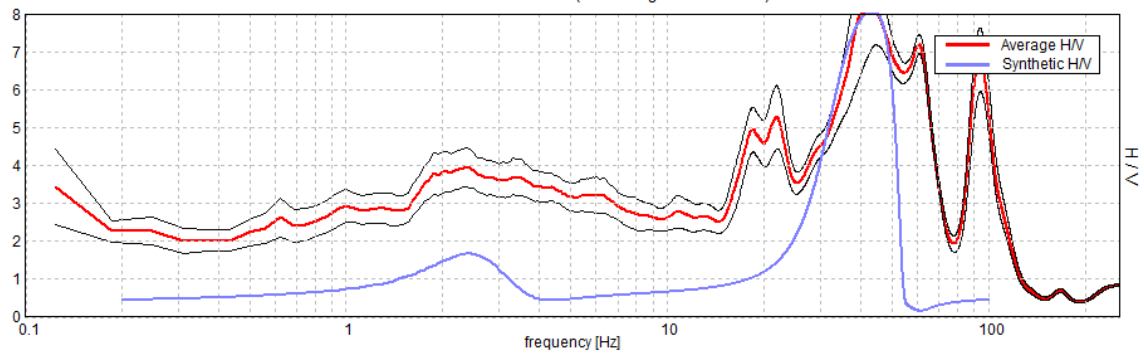


SINGLE COMPONENT SPECTRA



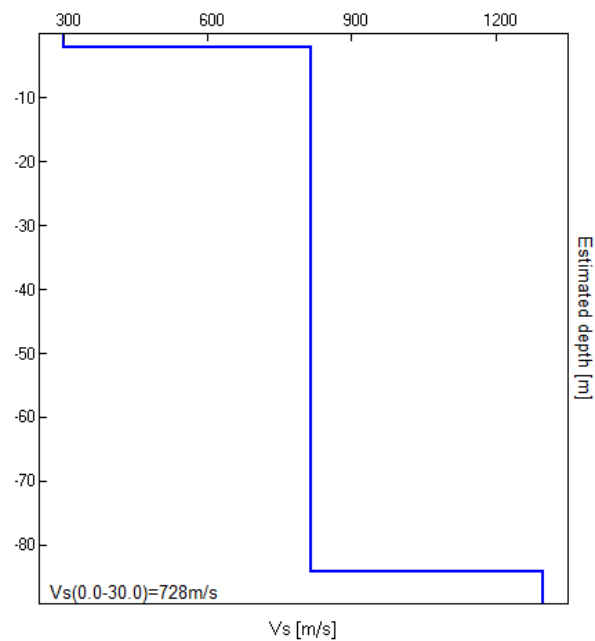
EXPERIMENTAL vs. SYNTHETIC H/V

Max. H/V at 18.5 ± 7.93 Hz (in the range 0.0 - 20.0 Hz).



Depth at the bottom of the layer [m]	Thickness [m]	Vs [m/s]	Poisson ratio
2.10	2.10	300	0.40
84.10	82.00	815	0.40
inf.	inf.	1300	0.45

Vs(0.0-30.0)=728m/s



[According to the SESAME, 2005 guidelines. **Please read carefully the [Grilla](#) manual before interpreting the following tables.**]

Max. H/V at 18.5 ± 7.93 Hz (in the range 0.0 - 20.0 Hz).

Criteria for a reliable H/V curve

[All 3 should be fulfilled]

$f_0 > 10 / L_w$	$18.50 > 1.00$	OK	
$n_c(f_0) > 200$	$12950.0 > 200$	OK	
$\sigma_A(f) < 2$ for $0.5f_0 < f < 2f_0$ if $f_0 > 0.5\text{Hz}$ $\sigma_A(f) < 3$ for $0.5f_0 < f < 2f_0$ if $f_0 < 0.5\text{Hz}$	Exceeded 0 out of 445 times	OK	

Criteria for a clear H/V peak

[At least 5 out of 6 should be fulfilled]

Exists f^- in $[f_0/4, f_0]$ $A_{H/V}(f^-) < A_0 / 2$			NO
Exists f^+ in $[f_0, 4f_0]$ $A_{H/V}(f^+) < A_0 / 2$	73.063 Hz	OK	
$A_0 > 2$	$4.94 > 2$	OK	
$f_{\text{peak}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	$ 0.42871 < 0.05$		NO
$\sigma_f < \varepsilon(f_0)$	$7.93117 < 0.925$		NO
$\sigma_A(f_0) < \theta(f_0)$	$0.5901 < 1.58$	OK	

L_w	window length
n_w	number of windows used in the analysis
$n_c = L_w n_w f_0$	number of significant cycles
f	current frequency
f_0	H/V peak frequency
σ_f	standard deviation of H/V peak frequency
$\varepsilon(f_0)$	threshold value for the stability condition $\sigma_f < \varepsilon(f_0)$
A_0	H/V peak amplitude at frequency f_0
$A_{H/V}(f)$	H/V curve amplitude at frequency f
f^-	frequency between $f_0/4$ and f_0 for which $A_{H/V}(f^-) < A_0/2$
f^+	frequency between f_0 and $4f_0$ for which $A_{H/V}(f^+) < A_0/2$
$\sigma_A(f)$	standard deviation of $A_{H/V}(f)$, $\sigma_A(f)$ is the factor by which the mean $A_{H/V}(f)$ curve should be multiplied or divided
$\sigma_{\log H/V}(f)$	standard deviation of $\log A_{H/V}(f)$ curve
$\theta(f_0)$	threshold value for the stability condition $\sigma_A(f) < \theta(f_0)$

Threshold values for σ_f and $\sigma_A(f_0)$

Freq. range [Hz]	< 0.2	0.2 – 0.5	0.5 – 1.0	1.0 – 2.0	> 2.0
$\varepsilon(f_0)$ [Hz]	$0.25 f_0$	$0.2 f_0$	$0.15 f_0$	$0.10 f_0$	$0.05 f_0$
$\theta(f_0)$ for $\sigma_A(f_0)$	3.0	2.5	2.0	1.78	1.58
$\log \theta(f_0)$ for $\sigma_{\log H/V}(f_0)$	0.48	0.40	0.30	0.25	0.20

SAN VITO N2 (T2_PUG)

Commitente		Comune di San Vito lo capo			
Oggetto dei lavori		Esecuzione di indagini geofisiche ai fini della redazione dello studio geologico propedeutico alla formazione del PUG del Comune di San Vito Lo Capo			
Nome base sismica		T2/PUG			
Coordinate	UTM	4227079.55 m	N	302128.97 m	E
Strumento utilizzato		Tromografo digitale TROMINO®			
Operatore		Dott. Colla Vito			
Data e ora		04/02/2022, 10:18			
Nome file		T2/PUG			
Durata		40 min			
Frequenza campionamento		256 Hz			
Accoppiamento strumento-suolo		SUOLO			
Condizioni meteo	Vento	No			
	Pioggia	No			
Transienti nelle vicinanze	Traffico veicolare	Si			
	Pedoni	No			
	Altro	No			



SAN VITO N2 (T2_PUG)

Instrument: TZB-0122/01-20

Data format: 32 byte

Full scale [mV]: 358

Start recording: 02/05/22 10:25:03 End recording: 02/05/22 11:05:03

Channel labels: NORTH SOUTH; EAST WEST; UP DOWN

GPS data not available

Trace length: 0h40'00". Analyzed 88% trace (manual window selection)

Sampling rate: 512 Hz

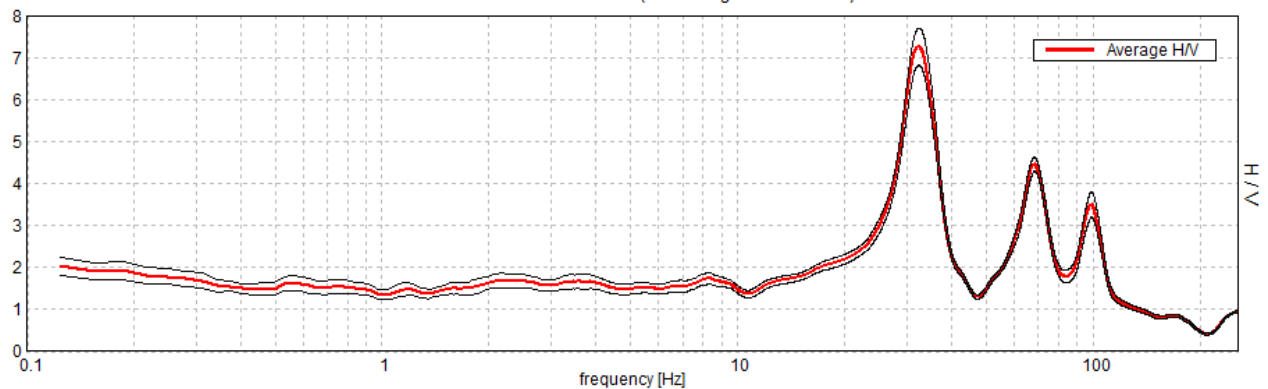
Window size: 20 s

Smoothing type: Triangular window

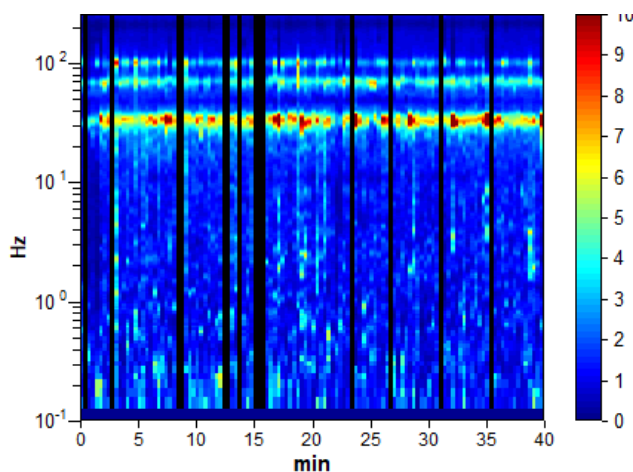
Smoothing: 10%

HORIZONTAL TO VERTICAL SPECTRAL RATIO

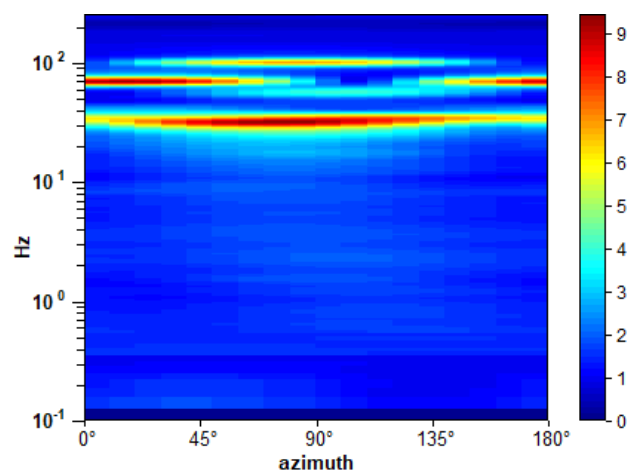
Max. H/V at 29.97 ± 0.03 Hz (in the range 0.0 - 30.0 Hz).



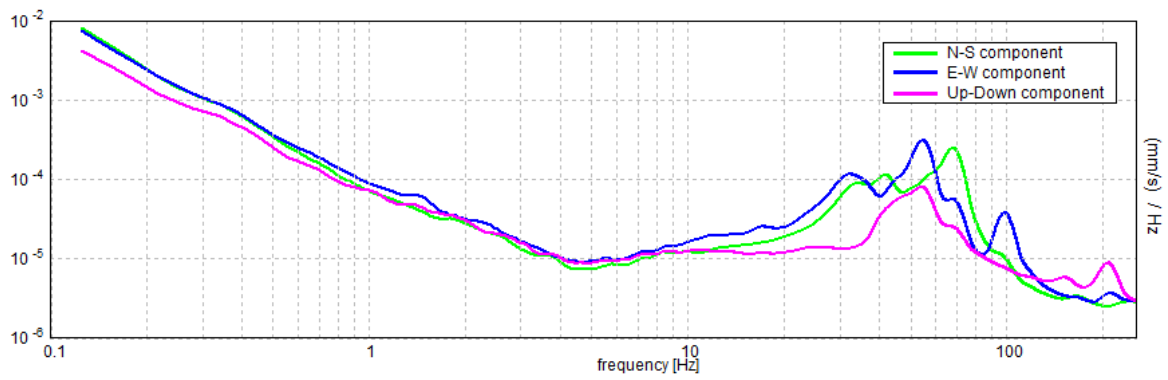
H/V TIME HISTORY



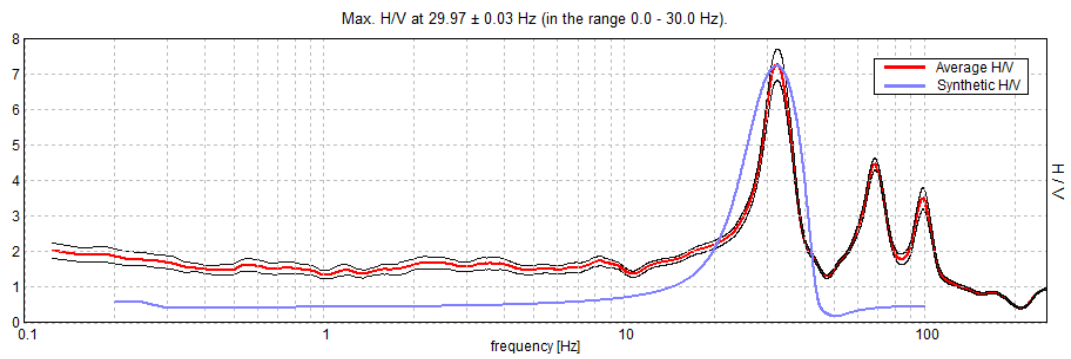
DIRECTIONAL H/V



SINGLE COMPONENT SPECTRA

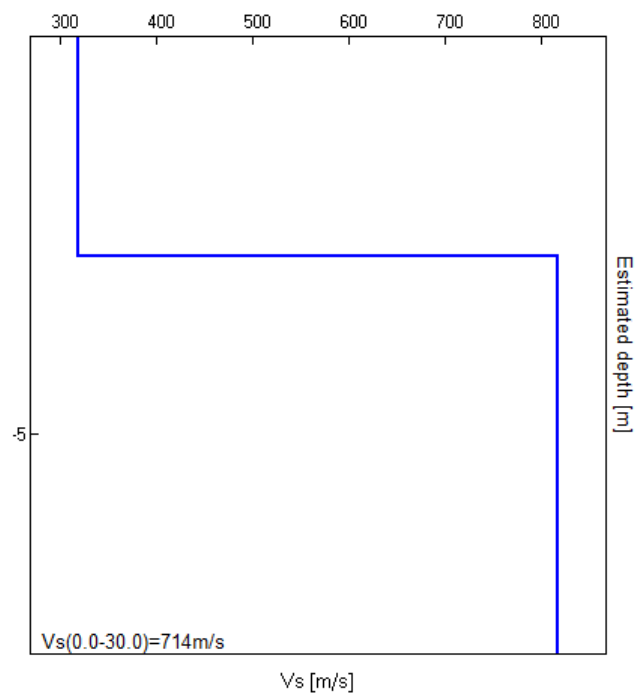


EXPERIMENTAL vs. SYNTHETIC H/V



Depth at the bottom of the layer [m]	Thickness [m]	Vs [m/s]	Poisson ratio
2.75	2.75	320	0.42
inf.	inf.	816	0.42

$V_s(0.0-30.0)=714\text{m/s}$



[According to the SESAME, 2005 guidelines. **Please read carefully the [Grilla](#) manual before interpreting the following tables.**]

Max. H/V at 29.97 ± 0.03 Hz (in the range 0.0 - 30.0 Hz).

Criteria for a reliable H/V curve

[All 3 should be fulfilled]

$f_0 > 10 / L_w$	$29.97 > 0.50$	OK	
$n_c(f_0) > 200$	$63533.8 > 200$	OK	
$\sigma_A(f) < 2$ for $0.5f_0 < f < 2f_0$ if $f_0 > 0.5\text{Hz}$ $\sigma_A(f) < 3$ for $0.5f_0 < f < 2f_0$ if $f_0 < 0.5\text{Hz}$	Exceeded 0 out of 1440 times	OK	

Criteria for a clear H/V peak

[At least 5 out of 6 should be fulfilled]

Exists f^- in $[f_0/4, f_0]$ $A_{H/V}(f^-) < A_0 / 2$	25.156 Hz	OK	
Exists f^+ in $[f_0, 4f_0]$ $A_{H/V}(f^+) < A_0 / 2$	38.406 Hz	OK	
$A_0 > 2$	$6.07 > 2$	OK	
$f_{\text{peak}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	$ 0.00104 < 0.05$	OK	
$\sigma_f < \varepsilon(f_0)$	$0.03125 < 1.49844$	OK	
$\sigma_A(f_0) < \theta(f_0)$	$0.3671 < 1.58$	OK	

L_w	window length
n_w	number of windows used in the analysis
$n_c = L_w n_w f_0$	number of significant cycles
f	current frequency
f_0	H/V peak frequency
σ_f	standard deviation of H/V peak frequency
$\varepsilon(f_0)$	threshold value for the stability condition $\sigma_f < \varepsilon(f_0)$
A_0	H/V peak amplitude at frequency f_0
$A_{H/V}(f)$	H/V curve amplitude at frequency f
f^-	frequency between $f_0/4$ and f_0 for which $A_{H/V}(f^-) < A_0/2$
f^+	frequency between f_0 and $4f_0$ for which $A_{H/V}(f^+) < A_0/2$
$\sigma_A(f)$	standard deviation of $A_{H/V}(f)$, $\sigma_A(f)$ is the factor by which the mean $A_{H/V}(f)$ curve should be multiplied or divided
$\sigma_{\log H/V}(f)$	standard deviation of $\log A_{H/V}(f)$ curve
$\theta(f_0)$	threshold value for the stability condition $\sigma_A(f) < \theta(f_0)$

Threshold values for σ_f and $\sigma_A(f_0)$

Freq. range [Hz]	< 0.2	0.2 – 0.5	0.5 – 1.0	1.0 – 2.0	> 2.0
$\varepsilon(f_0)$ [Hz]	$0.25 f_0$	$0.2 f_0$	$0.15 f_0$	$0.10 f_0$	$0.05 f_0$
$\theta(f_0)$ for $\sigma_A(f_0)$	3.0	2.5	2.0	1.78	1.58
$\log \theta(f_0)$ for $\sigma_{\log H/V}(f_0)$	0.48	0.40	0.30	0.25	0.20

SAN VITO N3 (T3/PUG)

Commitente		Comune di San Vito lo capo			
Oggetto dei lavori		Esecuzione di indagini geofisiche ai fini della redazione dello studio geologico propedeutico alla formazione del PUG del Comune di San Vito Lo Capo			
Nome base sismica		T3/PUG			
Coordinate	UTM	4227006.61 m	N	301827.96 m	E
Strumento utilizzato		Tromografo digitale TROMINO®			
Operatore		Dott. Colla Vito			
Data e ora		04/02/2022, 09:28			
Nome file		T3/PUG			
Durata		40 min			
Frequenza campionamento		256 Hz			
Accoppiamento strumento-suolo		SUOLO			
Condizioni meteo	Vento	No			
	Pioggia	No			
Transienti nelle vicinanze	Traffico veicolare	Si			
	Pedoni	No			
	Altro	No			



SANVITON N3 (T3/PUG)

Instrument: TZB-0122/01-20

Data format: 32 byte

Full scale [mV]: 358

Start recording: 02/05/22 09:36:41 End recording: 02/05/22 10:16:41

Channel labels: NORTH SOUTH; EAST WEST; UP DOWN

GPS data not available

Trace length: 0h40'00". Analyzed 55% trace (manual window selection)

Sampling rate: 512 Hz

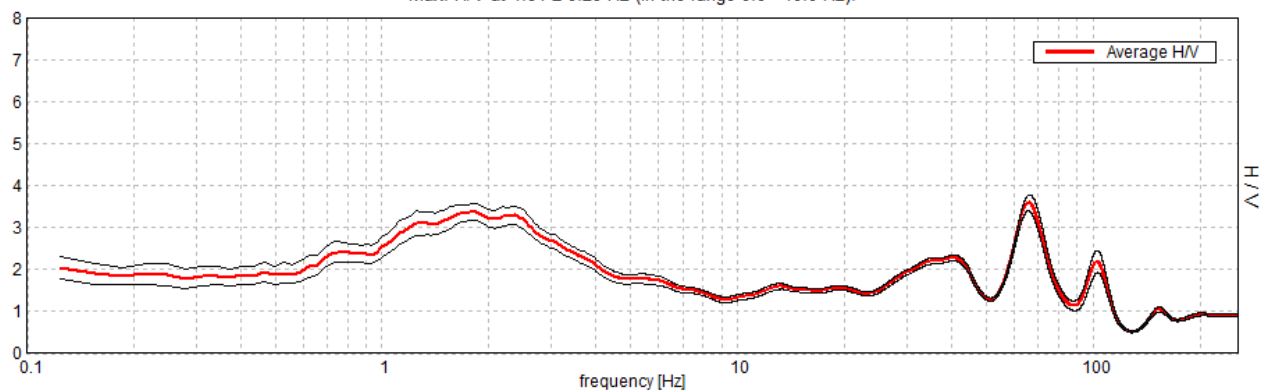
Window size: 20 s

Smoothing type: Triangular window

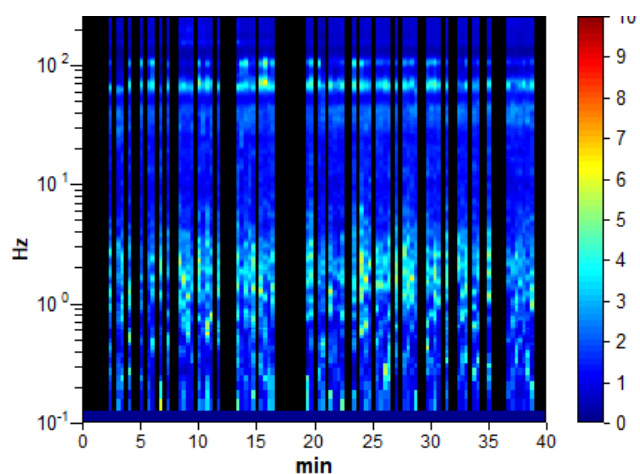
Smoothing: 10%

HORIZONTAL TO VERTICAL SPECTRAL RATIO

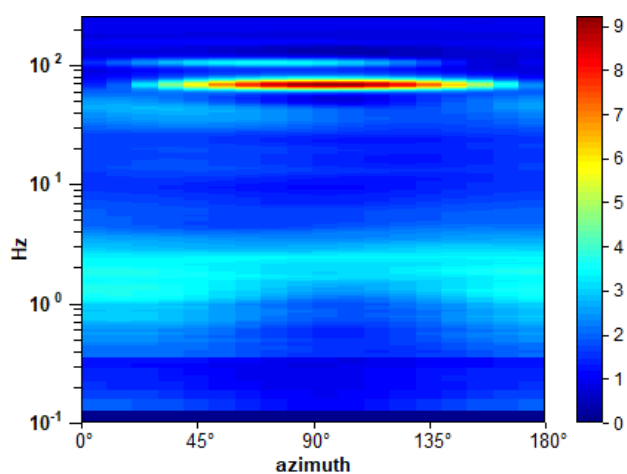
Max. H/V at 1.81 ± 0.29 Hz (in the range 0.0 - 40.0 Hz).



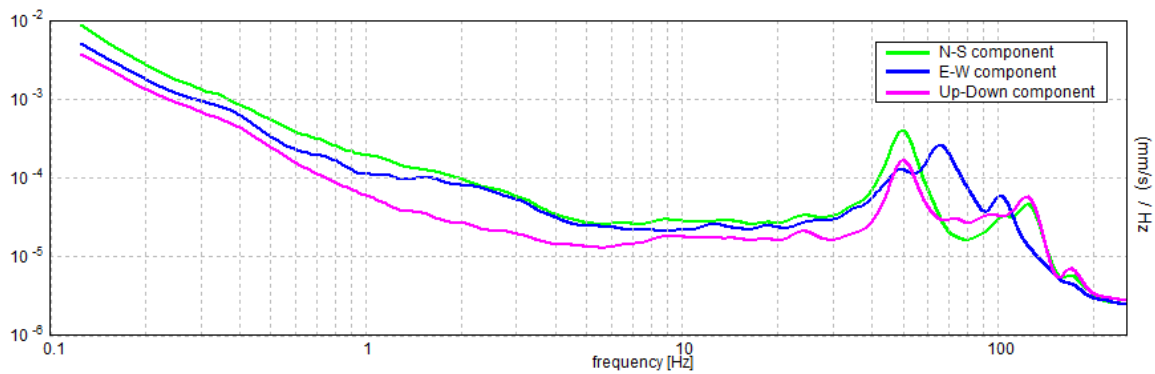
H/V TIME HISTORY



DIRECTIONAL H/V

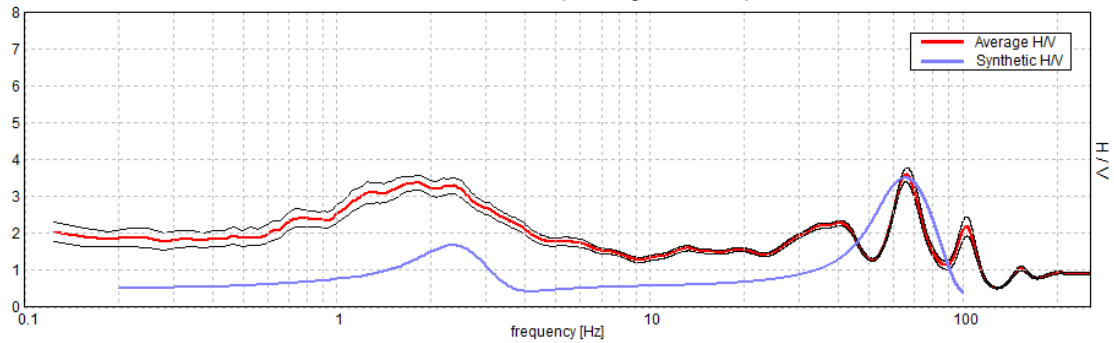


SINGLE COMPONENT SPECTRA



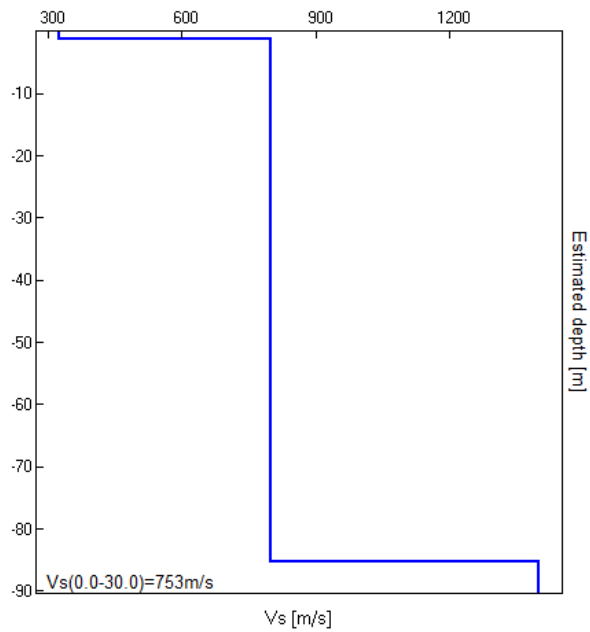
EXPERIMENTAL vs. SYNTHETIC H/V

Max. H/V at 1.81 ± 0.29 Hz (in the range 0.0 - 40.0 Hz).



Depth at the bottom of the layer [m]	Thickness [m]	Vs [m/s]	Poisson ratio
1.28	1.28	324	0.35
85.28	84.00	800	0.35
inf.	inf.	1400	0.35

Vs(0.0-30.0)=753m/s



[According to the SESAME, 2005 guidelines. **Please read carefully the [Grilla](#) manual before interpreting the following tables.**]

Max. H/V at 1.81 ± 0.29 Hz (in the range 0.0 - 40.0 Hz).

Criteria for a reliable H/V curve

[All 3 should be fulfilled]

$f_0 > 10 / L_w$	$1.81 > 0.50$	OK	
$n_c(f_0) > 200$	$2392.5 > 200$	OK	
$\sigma_A(f) < 2$ for $0.5f_0 < f < 2f_0$ if $f_0 > 0.5\text{Hz}$ $\sigma_A(f) < 3$ for $0.5f_0 < f < 2f_0$ if $f_0 < 0.5\text{Hz}$	Exceeded 0 out of 88 times	OK	

Criteria for a clear H/V peak

[At least 5 out of 6 should be fulfilled]

Exists f^- in $[f_0/4, f_0]$ $A_{H/V}(f^-) < A_0 / 2$			NO
Exists f^+ in $[f_0, 4f_0]$ $A_{H/V}(f^+) < A_0 / 2$	6.281 Hz	OK	
$A_0 > 2$	$3.37 > 2$	OK	
$f_{\text{peak}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	$ 0.16146 < 0.05$		NO
$\sigma_f < \varepsilon(f_0)$	$0.29265 < 0.18125$		NO
$\sigma_A(f_0) < \theta(f_0)$	$0.2022 < 1.78$	OK	

L_w	window length
n_w	number of windows used in the analysis
$n_c = L_w n_w f_0$	number of significant cycles
f	current frequency
f_0	H/V peak frequency
σ_f	standard deviation of H/V peak frequency
$\varepsilon(f_0)$	threshold value for the stability condition $\sigma_f < \varepsilon(f_0)$
A_0	H/V peak amplitude at frequency f_0
$A_{H/V}(f)$	H/V curve amplitude at frequency f
f^-	frequency between $f_0/4$ and f_0 for which $A_{H/V}(f^-) < A_0/2$
f^+	frequency between f_0 and $4f_0$ for which $A_{H/V}(f^+) < A_0/2$
$\sigma_A(f)$	standard deviation of $A_{H/V}(f)$, $\sigma_A(f)$ is the factor by which the mean $A_{H/V}(f)$ curve should be multiplied or divided
$\sigma_{\log H/V}(f)$	standard deviation of $\log A_{H/V}(f)$ curve
$\theta(f_0)$	threshold value for the stability condition $\sigma_A(f) < \theta(f_0)$

Threshold values for σ_f and $\sigma_A(f_0)$

Freq. range [Hz]	< 0.2	0.2 – 0.5	0.5 – 1.0	1.0 – 2.0	> 2.0
$\varepsilon(f_0)$ [Hz]	$0.25 f_0$	$0.2 f_0$	$0.15 f_0$	$0.10 f_0$	$0.05 f_0$
$\theta(f_0)$ for $\sigma_A(f_0)$	3.0	2.5	2.0	1.78	1.58
$\log \theta(f_0)$ for $\sigma_{\log H/V}(f_0)$	0.48	0.40	0.30	0.25	0.20

SAN VITO N4 (T4/PUG)

Commitente		Comune di San Vito lo capo			
Oggetto dei lavori		Esecuzione di indagini geofisiche ai fini della redazione dello studio geologico propedeutico alla formazione del PUG del Comune di San Vito Lo Capo			
Nome base sismica		T4/PUG			
Coordinate	UTM	4226068.88 m	N	302300.18 m	E
Strumento utilizzato		Tromografo digitale TROMINO®			
Operatore		Dott. Colla Vito			
Data e ora		04/02/2022, 12:01			
Nome file		T4/PUG			
Durata		40 min			
Frequenza campionamento		256 Hz			
Accoppiamento strumento-suolo		SUOLO			
Condizioni meteo	Vento	No			
	Pioggia	No			
Transienti nelle vicinanze	Traffico veicolare	Si			
	Pedoni	No			
	Altro	No			



SAN VITO N4 (T4/PUG)

Instrument: TZB-0122/01-20

Data format: 32 byte

Full scale [mV]: 358

Start recording: 02/05/22 12:14:13 End recording: 02/05/22 12:54:13

Channel labels: NORTH SOUTH; EAST WEST; UP DOWN

GPS data not available

Trace length: 0h40'00". Analyzed 38% trace (manual window selection)

Sampling rate: 512 Hz

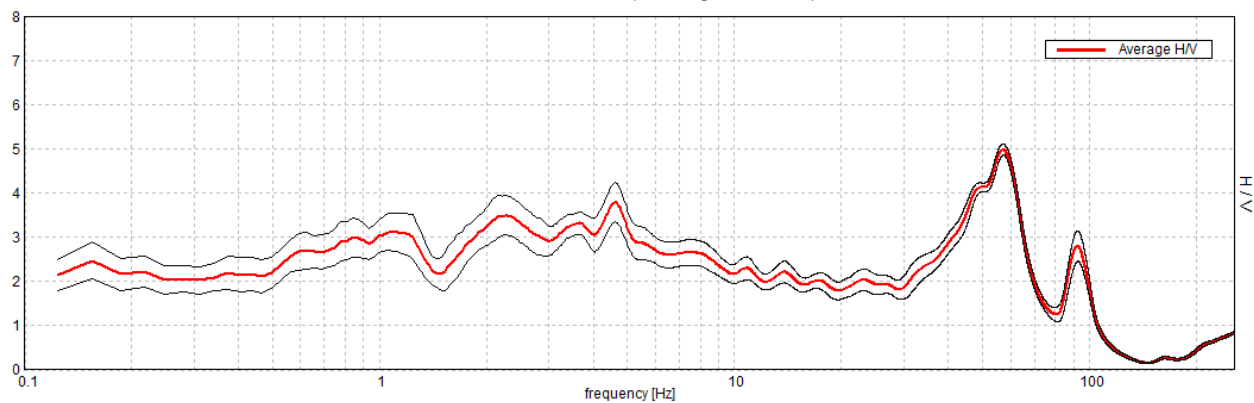
Window size: 20 s

Smoothing type: Triangular window

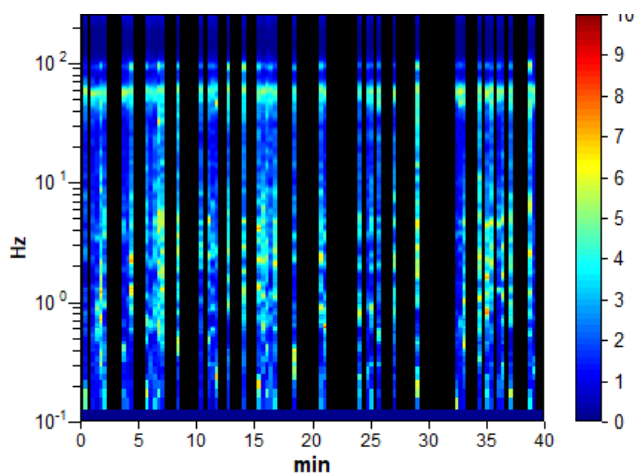
Smoothing: 10%

HORIZONTAL TO VERTICAL SPECTRAL RATIO

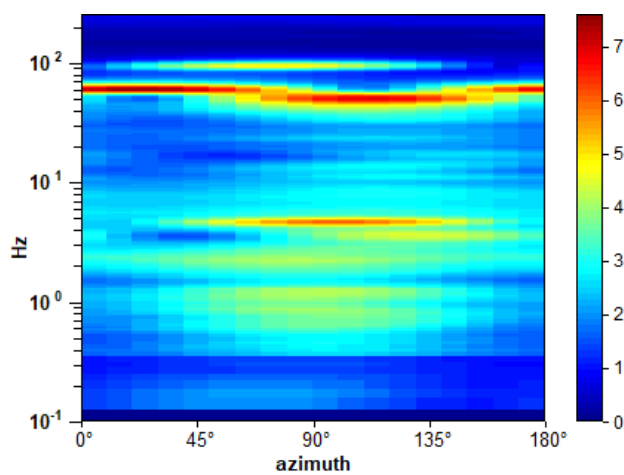
Max. H/V at 4.63 ± 1.65 Hz (in the range 0.0 - 40.0 Hz).



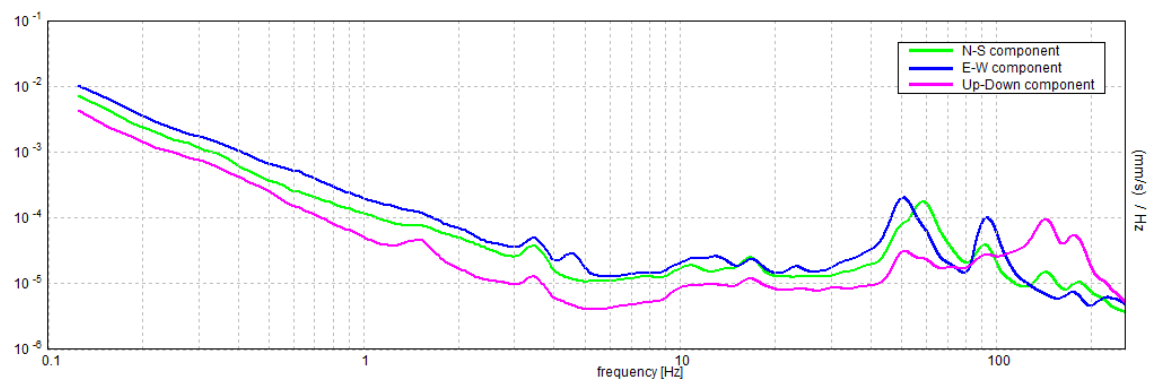
H/V TIME HISTORY



DIRECTIONAL H/V

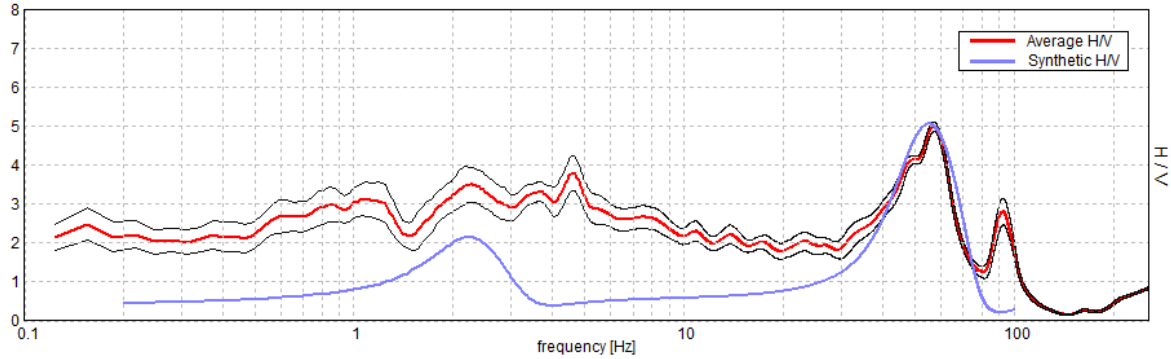


SINGLE COMPONENT SPECTRA



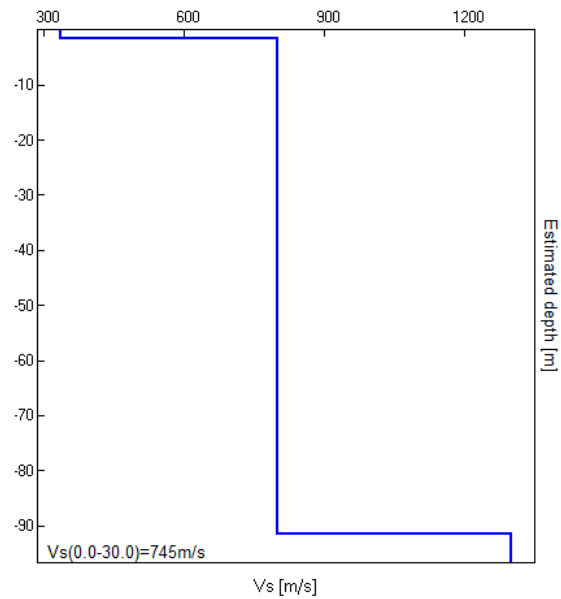
EXPERIMENTAL vs. SYNTHETIC H/V

Max. H/V at 4.63 ± 1.65 Hz (in the range 0.0 - 40.0 Hz).



Depth at the bottom of the layer [m]	Thickness [m]	Vs [m/s]	Poisson ratio
1.60	1.60	337	0.42
91.60	90.00	800	0.42
inf.	inf.	1300	0.48

Vs(0.0-30.0)=745m/s



[According to the SESAME, 2005 guidelines. **Please read carefully the [Grilla](#) manual before interpreting the following tables.**]

Max. H/V at 4.63 ± 1.65 Hz (in the range 0.0 - 40.0 Hz).

Criteria for a reliable H/V curve

[All 3 should be fulfilled]

$f_0 > 10 / L_w$	$4.63 > 0.50$	OK	
$n_c(f_0) > 200$	$4162.5 > 200$	OK	
$\sigma_A(f) < 2$ for $0.5f_0 < f < 2f_0$ if $f_0 > 0.5\text{Hz}$ $\sigma_A(f) < 3$ for $0.5f_0 < f < 2f_0$ if $f_0 < 0.5\text{Hz}$	Exceeded 0 out of 223 times	OK	

Criteria for a clear H/V peak

[At least 5 out of 6 should be fulfilled]

Exists f^- in $[f_0/4, f_0]$ $A_{H/V}(f^-) < A_0 / 2$			NO
Exists f^+ in $[f_0, 4f_0]$ $A_{H/V}(f^+) < A_0 / 2$	18.406 Hz	OK	
$A_0 > 2$	$3.79 > 2$	OK	
$f_{\text{peak}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	$ 0.3572 < 0.05$		NO
$\sigma_f < \varepsilon(f_0)$	$1.65205 < 0.23125$		NO
$\sigma_A(f_0) < \theta(f_0)$	$0.4437 < 1.58$	OK	

L_w	window length
n_w	number of windows used in the analysis
$n_c = L_w n_w f_0$	number of significant cycles
f	current frequency
f_0	H/V peak frequency
σ_f	standard deviation of H/V peak frequency
$\varepsilon(f_0)$	threshold value for the stability condition $\sigma_f < \varepsilon(f_0)$
A_0	H/V peak amplitude at frequency f_0
$A_{H/V}(f)$	H/V curve amplitude at frequency f
f^-	frequency between $f_0/4$ and f_0 for which $A_{H/V}(f^-) < A_0/2$
f^+	frequency between f_0 and $4f_0$ for which $A_{H/V}(f^+) < A_0/2$
$\sigma_A(f)$	standard deviation of $A_{H/V}(f)$, $\sigma_A(f)$ is the factor by which the mean $A_{H/V}(f)$ curve should be multiplied or divided
$\sigma_{\log H/V}(f)$	standard deviation of $\log A_{H/V}(f)$ curve
$\theta(f_0)$	threshold value for the stability condition $\sigma_A(f) < \theta(f_0)$

Threshold values for σ_f and $\sigma_A(f_0)$

Freq. range [Hz]	< 0.2	0.2 – 0.5	0.5 – 1.0	1.0 – 2.0	> 2.0
$\varepsilon(f_0)$ [Hz]	$0.25 f_0$	$0.2 f_0$	$0.15 f_0$	$0.10 f_0$	$0.05 f_0$
$\theta(f_0)$ for $\sigma_A(f_0)$	3.0	2.5	2.0	1.78	1.58
$\log \theta(f_0)$ for $\sigma_{\log H/V}(f_0)$	0.48	0.40	0.30	0.25	0.20

SAN VITO N5 (T5_PUG)

Commitente		Comune di San Vito lo capo			
Oggetto dei lavori		Esecuzione di indagini geofisiche ai fini della redazione dello studio geologico propedeutico alla formazione del PUG del Comune di San Vito Lo Capo			
Nome base sismica		T5/PUG			
Coordinate	UTM	4227667.18 m	N	301351.75 m	E
Strumento utilizzato		Tromografo digitale TROMINO®			
Operatore		Dott. Colla Vito			
Data e ora		04/02/2022, 16:24			
Nome file		T5/PUG			
Durata		40 min			
Frequenza campionamento		256 Hz			
Accoppiamento strumento-suolo		SUOLO			
Condizioni meteo	Vento	No			
	Pioggia	No			
Transienti nelle vicinanze	Traffico veicolare	Si			
	Pedoni	No			
	Altro	No			



SAN VITO N5 (T5_PUG)

Instrument: TZB-0122/01-20

Data format: 32 byte

Full scale [mV]: 358

Start recording: 02/02/22 16:24:46 End recording: 02/02/22 17:04:46

Channel labels: NORTH SOUTH; EAST WEST; UP DOWN

GPS data not available

Trace length: 0h40'00". Analyzed 98% trace (manual window selection)

Sampling rate: 256 Hz

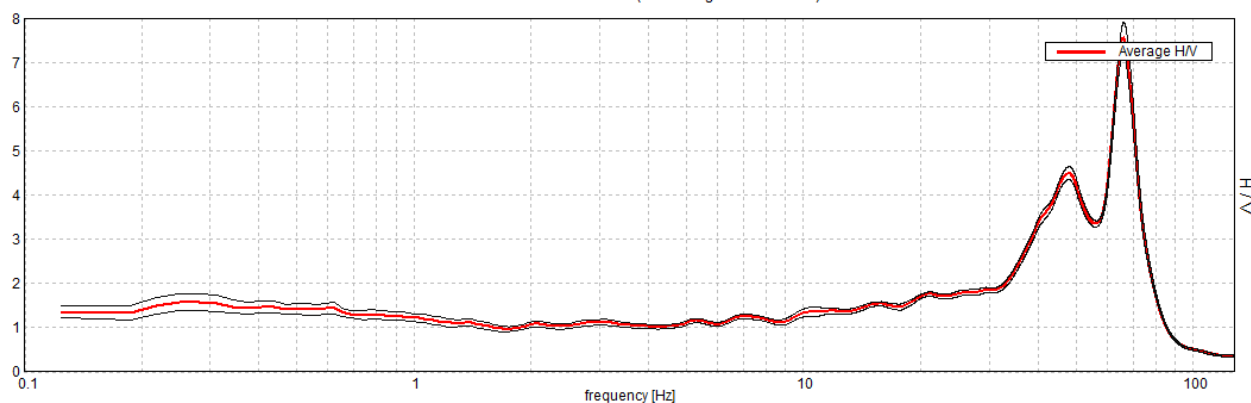
Window size: 20 s

Smoothing type: Triangular window

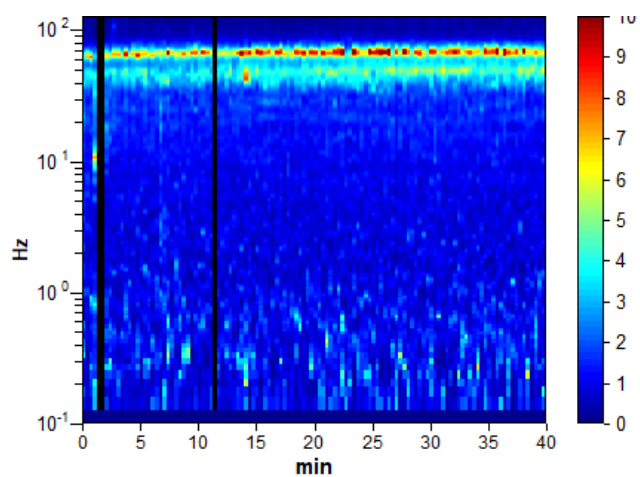
Smoothing: 10%

HORIZONTAL TO VERTICAL SPECTRAL RATIO

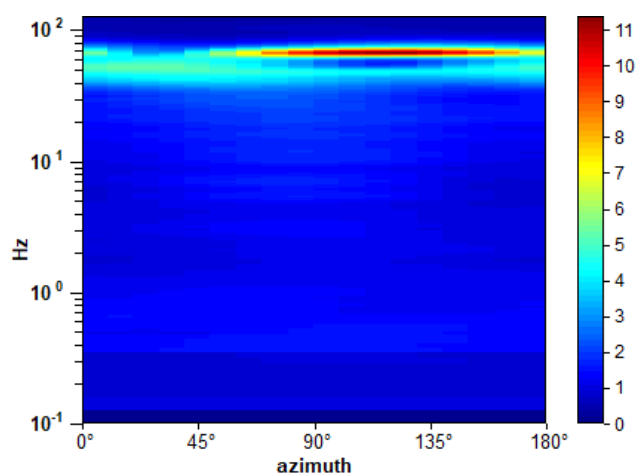
Max. H/V at 29.59 ± 6.32 Hz (in the range 0.0 - 30.0 Hz).



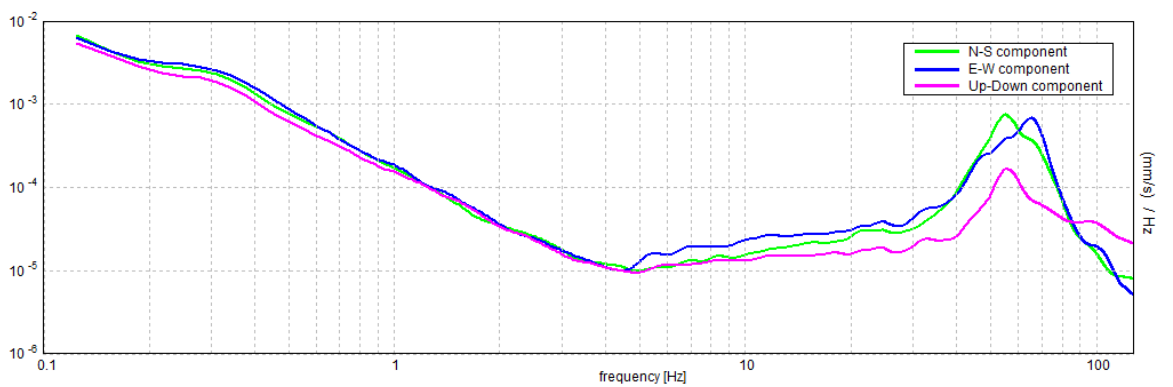
H/V TIME HISTORY



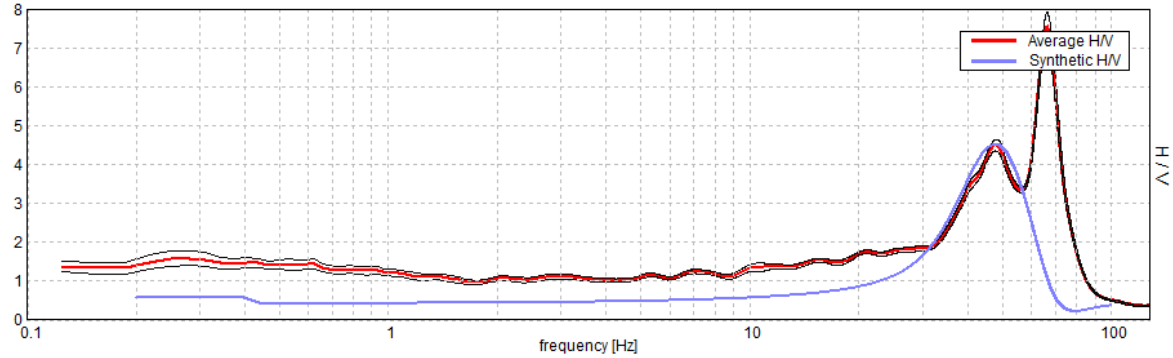
DIRECTIONAL H/V



SINGLE COMPONENT SPECTRA

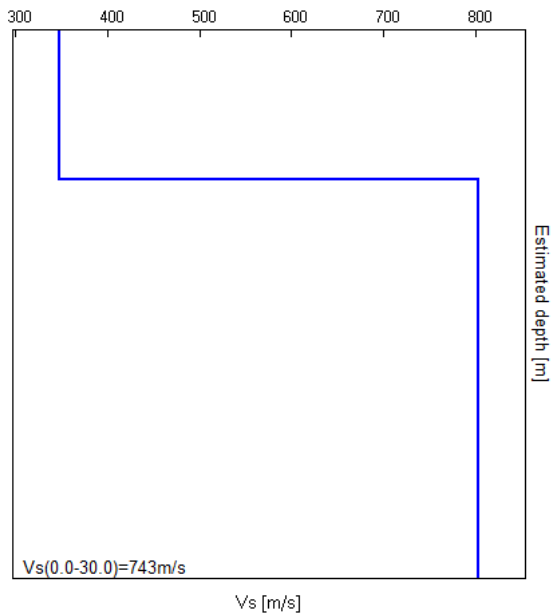


EXPERIMENTAL vs. SYNTHETIC H/V
Max. H/V at 29.59 ± 6.32 Hz (in the range 0.0 - 30.0 Hz).



Depth at the bottom of the layer [m]	Thickness [m]	Vs [m/s]	Poisson ratio
1.88	1.88	347	0.42
inf.	inf.	804	0.42

Vs(0.0-30.0)=743m/s



[According to the SESAME, 2005 guidelines. **Please read carefully the [Grilla](#) manual before interpreting the following tables.**]

Max. H/V at 29.59 ± 6.32 Hz (in the range 0.0 - 30.0 Hz).

Criteria for a reliable H/V curve

[All 3 should be fulfilled]

$f_0 > 10 / L_w$	$29.59 > 0.50$	OK	
$n_c(f_0) > 200$	$69249.4 > 200$	OK	
$\sigma_A(f) < 2$ for $0.5f_0 < f < 2f_0$ if $f_0 > 0.5\text{Hz}$ $\sigma_A(f) < 3$ for $0.5f_0 < f < 2f_0$ if $f_0 < 0.5\text{Hz}$	Exceeded 0 out of 1422 times	OK	

Criteria for a clear H/V peak

[At least 5 out of 6 should be fulfilled]

Exists f^- in $[f_0/4, f_0]$ $A_{H/V}(f^-) < A_0 / 2$			NO
Exists f^+ in $[f_0, 4f_0]$ $A_{H/V}(f^+) < A_0 / 2$	86.406 Hz	OK	
$A_0 > 2$	$1.85 > 2$		NO
$f_{\text{peak}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	$ 0.21368 < 0.05$		NO
$\sigma_f < \varepsilon(f_0)$	$6.32351 < 1.47969$		NO
$\sigma_A(f_0) < \theta(f_0)$	$0.0613 < 1.58$	OK	

L_w	window length
n_w	number of windows used in the analysis
$n_c = L_w n_w f_0$	number of significant cycles
f	current frequency
f_0	H/V peak frequency
σ_f	standard deviation of H/V peak frequency
$\varepsilon(f_0)$	threshold value for the stability condition $\sigma_f < \varepsilon(f_0)$
A_0	H/V peak amplitude at frequency f_0
$A_{H/V}(f)$	H/V curve amplitude at frequency f
f^-	frequency between $f_0/4$ and f_0 for which $A_{H/V}(f^-) < A_0/2$
f^+	frequency between f_0 and $4f_0$ for which $A_{H/V}(f^+) < A_0/2$
$\sigma_A(f)$	standard deviation of $A_{H/V}(f)$, $\sigma_A(f)$ is the factor by which the mean $A_{H/V}(f)$ curve should be multiplied or divided
$\sigma_{\log H/V}(f)$	standard deviation of $\log A_{H/V}(f)$ curve
$\theta(f_0)$	threshold value for the stability condition $\sigma_A(f) < \theta(f_0)$

Threshold values for σ_f and $\sigma_A(f_0)$

Freq. range [Hz]	< 0.2	0.2 – 0.5	0.5 – 1.0	1.0 – 2.0	> 2.0
$\varepsilon(f_0)$ [Hz]	$0.25 f_0$	$0.2 f_0$	$0.15 f_0$	$0.10 f_0$	$0.05 f_0$
$\theta(f_0)$ for $\sigma_A(f_0)$	3.0	2.5	2.0	1.78	1.58
$\log \theta(f_0)$ for $\sigma_{\log H/V}(f_0)$	0.48	0.40	0.30	0.25	0.20

SAN VITO N6 (T6/PUG)

Commitente		Comune di San Vito lo capo			
Oggetto dei lavori		Esecuzione di indagini geofisiche ai fini della redazione dello studio geologico propedeutico alla formazione del PUG del Comune di San Vito Lo Capo			
Nome base sismica		T6/PUG			
Coordinate	UTM	4228807.31 m	N	301330.56 m	E
Strumento utilizzato		Tromografo digitale TROMINO®			
Operatore		Dott. Colla Vito			
Data e ora		04/02/2022, 14:09			
Nome file		T6/PUG			
Durata		40 min			
Frequenza campionamento		256 Hz			
Accoppiamento strumento-suolo		SUOLO			
Condizioni meteo	Vento	No			
	Pioggia	No			
Transienti nelle vicinanze	Traffico veicolare	No			
	Pedoni	No			
	Altro	No			



SAN VITO N6 (T6/PUG)

Instrument: TZB-0122/01-20

Data format: 32 byte

Full scale [mV]: 358

Start recording: 02/05/22 13:13:17 End recording: 02/05/22 13:53:17

Channel labels: NORTH SOUTH; EAST WEST; UP DOWN

GPS data not available

Trace length: 0h40'00". Analyzed 21% trace (manual window selection)

Sampling rate: 512 Hz

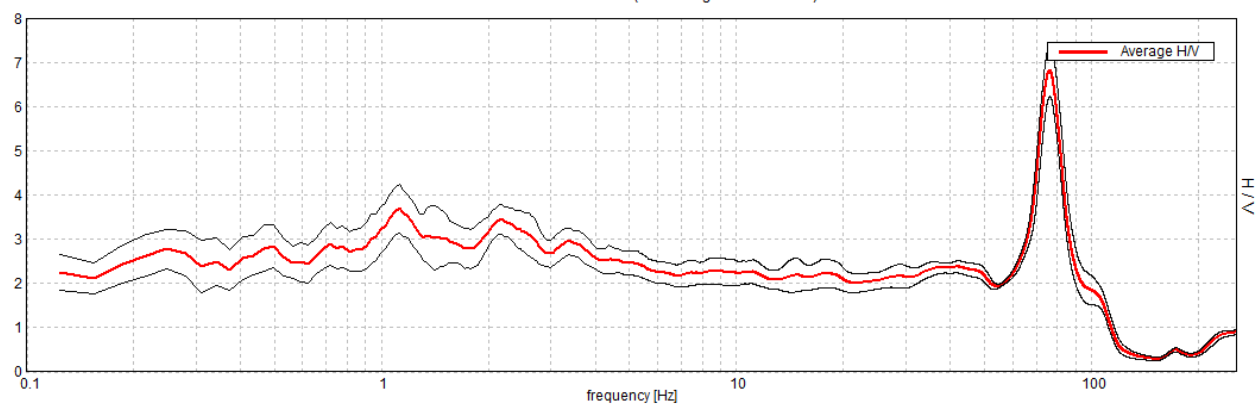
Window size: 20 s

Smoothing type: Triangular window

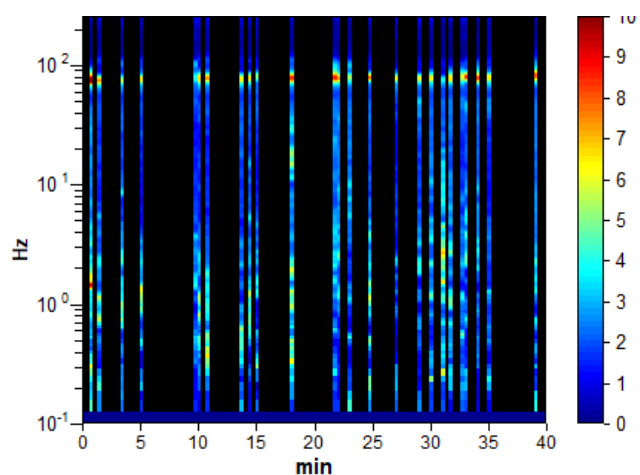
Smoothing: 10%

HORIZONTAL TO VERTICAL SPECTRAL RATIO

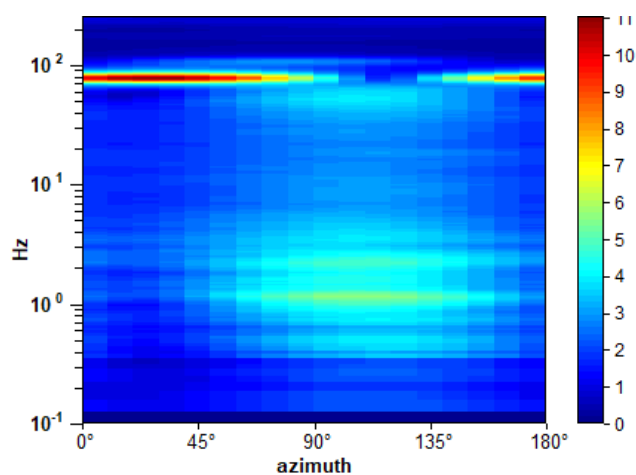
Max. H/V at 1.13 ± 0.16 Hz (in the range 0.0 - 40.0 Hz).



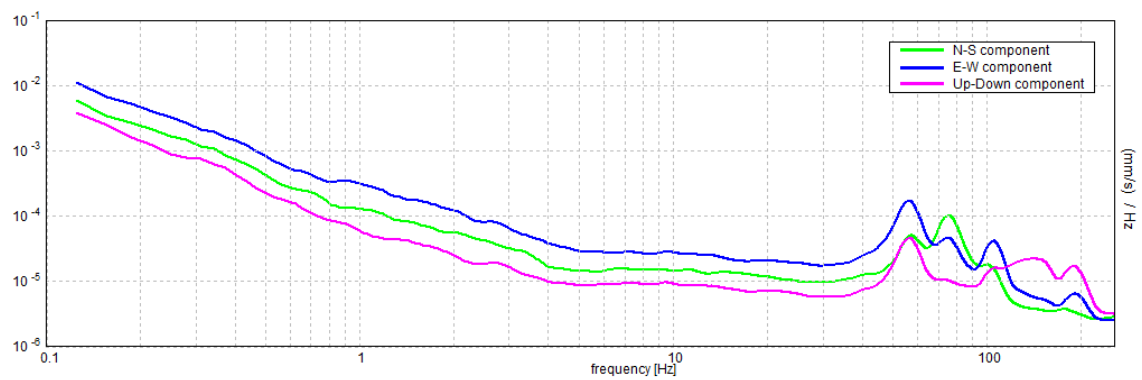
H/V TIME HISTORY



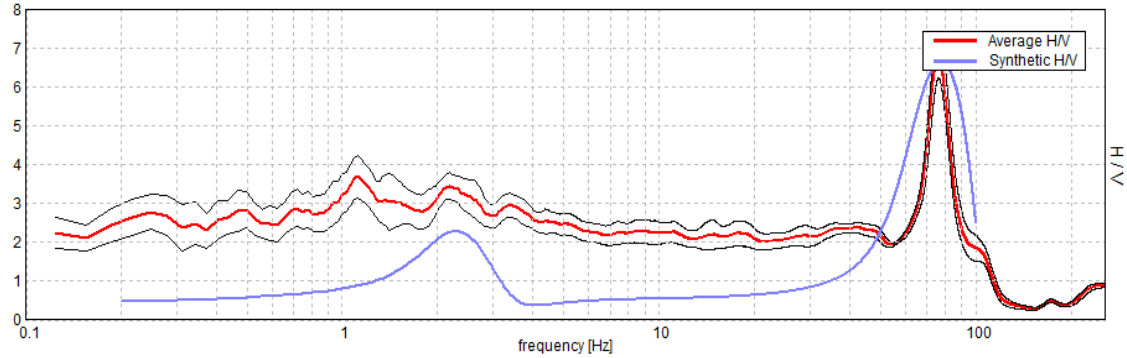
DIRECTIONAL H/V



SINGLE COMPONENT SPECTRA

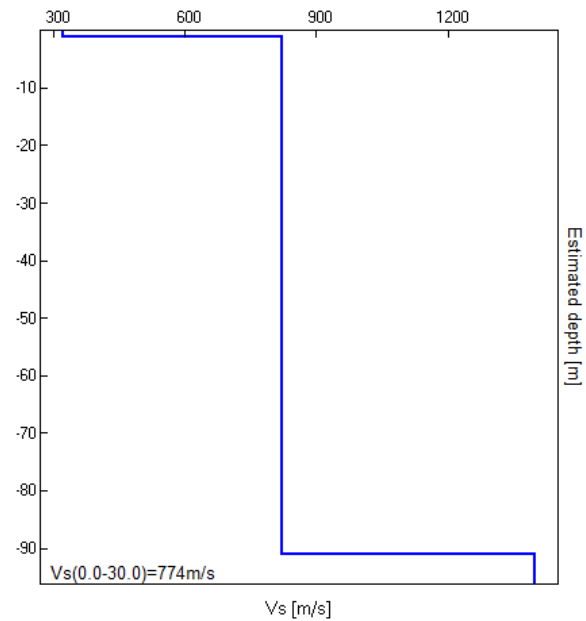


EXPERIMENTAL vs. SYNTHETIC H/V
Max. H/V at 1.13 ± 0.16 Hz (in the range 0.0 - 40.0 Hz).



Depth at the bottom of the layer [m]	Thickness [m]	Vs [m/s]	Poisson ratio
1.13	1.13	320	0.42
91.13	90.00	820	0.42
inf.	inf.	1400	0.42

Vs(0.0-30.0)=774m/s



[According to the SESAME, 2005 guidelines. **Please read carefully the [Grilla](#) manual before interpreting the following tables.**]

Max. H/V at 1.13 ± 0.16 Hz (in the range 0.0 - 40.0 Hz).

Criteria for a reliable H/V curve

[All 3 should be fulfilled]

$f_0 > 10 / L_w$	$1.13 > 0.50$	OK	
$n_c(f_0) > 200$	$562.5 > 200$	OK	
$\sigma_A(f) < 2$ for $0.5f_0 < f < 2f_0$ if $f_0 > 0.5\text{Hz}$ $\sigma_A(f) < 3$ for $0.5f_0 < f < 2f_0$ if $f_0 < 0.5\text{Hz}$	Exceeded 0 out of 55 times	OK	

Criteria for a clear H/V peak

[At least 5 out of 6 should be fulfilled]

Exists f^- in $[f_0/4, f_0]$ $A_{H/V}(f^-) < A_0 / 2$			NO
Exists f^+ in $[f_0, 4f_0]$ $A_{H/V}(f^+) < A_0 / 2$			NO
$A_0 > 2$	$3.69 > 2$	OK	
$f_{\text{peak}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	$ 0.14604 < 0.05$		NO
$\sigma_f < \varepsilon(f_0)$	$0.16429 < 0.1125$		NO
$\sigma_A(f_0) < \theta(f_0)$	$0.5495 < 1.78$	OK	

L_w	window length
n_w	number of windows used in the analysis
$n_c = L_w n_w f_0$	number of significant cycles
f	current frequency
f_0	H/V peak frequency
σ_f	standard deviation of H/V peak frequency
$\varepsilon(f_0)$	threshold value for the stability condition $\sigma_f < \varepsilon(f_0)$
A_0	H/V peak amplitude at frequency f_0
$A_{H/V}(f)$	H/V curve amplitude at frequency f
f^-	frequency between $f_0/4$ and f_0 for which $A_{H/V}(f^-) < A_0/2$
f^+	frequency between f_0 and $4f_0$ for which $A_{H/V}(f^+) < A_0/2$
$\sigma_A(f)$	standard deviation of $A_{H/V}(f)$, $\sigma_A(f)$ is the factor by which the mean $A_{H/V}(f)$ curve should be multiplied or divided
$\sigma_{\log H/V}(f)$	standard deviation of $\log A_{H/V}(f)$ curve
$\theta(f_0)$	threshold value for the stability condition $\sigma_A(f) < \theta(f_0)$

Threshold values for σ_f and $\sigma_A(f_0)$

Freq. range [Hz]	< 0.2	0.2 – 0.5	0.5 – 1.0	1.0 – 2.0	> 2.0
$\varepsilon(f_0)$ [Hz]	$0.25 f_0$	$0.2 f_0$	$0.15 f_0$	$0.10 f_0$	$0.05 f_0$
$\theta(f_0)$ for $\sigma_A(f_0)$	3.0	2.5	2.0	1.78	1.58
$\log \theta(f_0)$ for $\sigma_{\log H/V}(f_0)$	0.48	0.40	0.30	0.25	0.20

SAN VITO N7 (T7/PUG)

Commitente		Comune di San Vito lo capo			
Oggetto dei lavori		Esecuzione di indagini geofisiche ai fini della redazione dello studio geologico propedeutico alla formazione del PUG del Comune di San Vito Lo Capo			
Nome base sismica		T7/PUG			
Coordinate	UTM	4227457.10 m	N	301707.84 m	E
Strumento utilizzato		Tromografo digitale TROMINO®			
Operatore		Dott. Colla Vito			
Data e ora		04/02/2022, 12:54			
Nome file		T7/PUG			
Durata		40 min			
Frequenza campionamento		256 Hz			
Accoppiamento strumento-suolo		SUOLO			
Condizioni meteo	Vento	No			
	Pioggia	No			
Transienti nelle vicinanze	Traffico veicolare	Si			
	Pedoni	No			
	Altro	Presenza di mezzi meccanici in opera			



SAN VITO N7 (T7/PUG)

Instrument: TZB-0122/01-20

Data format: 32 byte

Full scale [mV]: 358

Start recording: 02/05/22 08:22:05 End recording: 02/05/22 09:02:05

Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN

GPS data not available

Trace length: 0h40'00". Analyzed 58% trace (manual window selection)

Sampling rate: 512 Hz

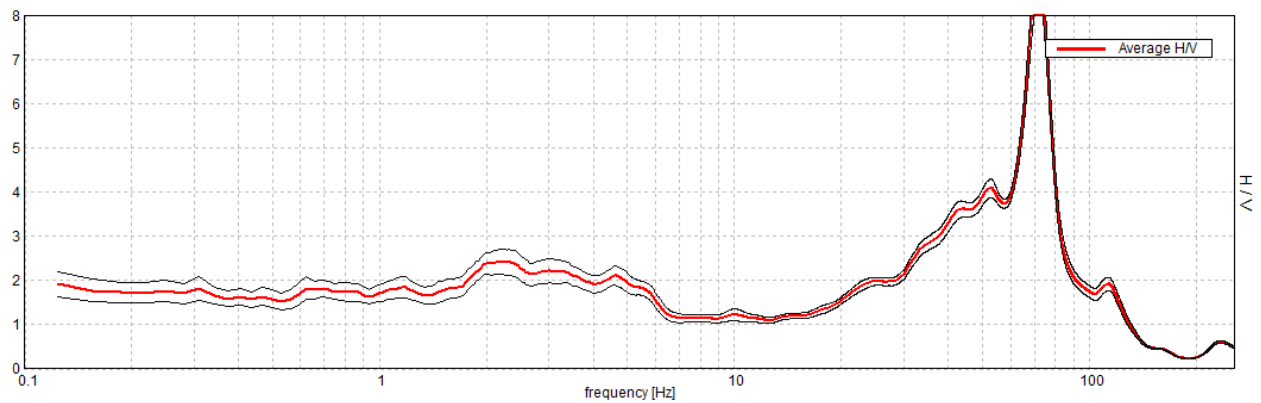
Window size: 20 s

Smoothing type: Triangular window

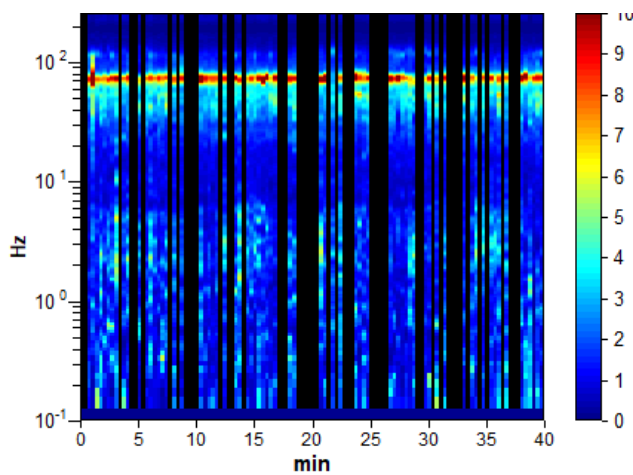
Smoothing: 10%

HORIZONTAL TO VERTICAL SPECTRAL RATIO

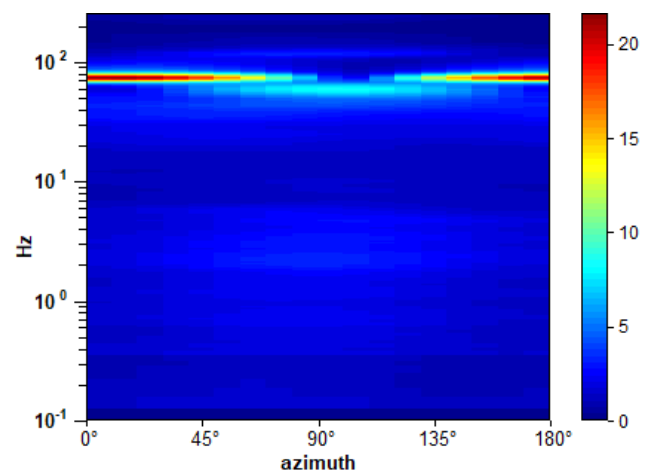
Max. H/V at 39.97 ± 0.06 Hz (in the range 0.0 - 40.0 Hz).



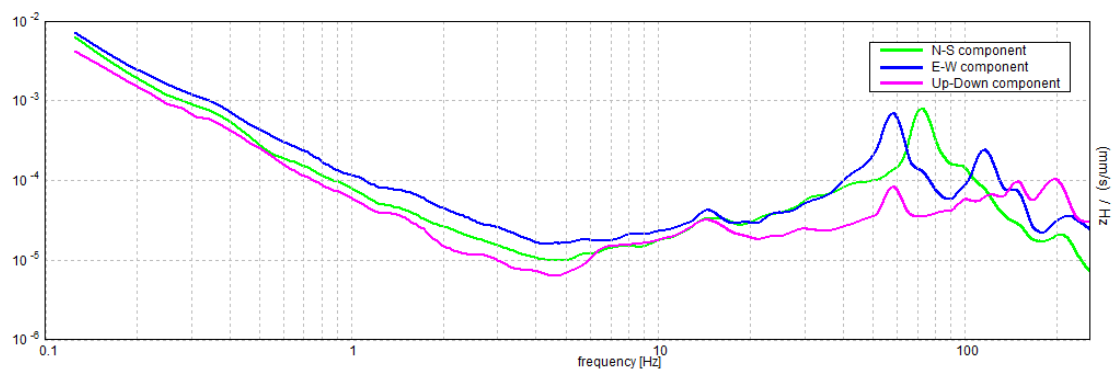
H/V TIME HISTORY



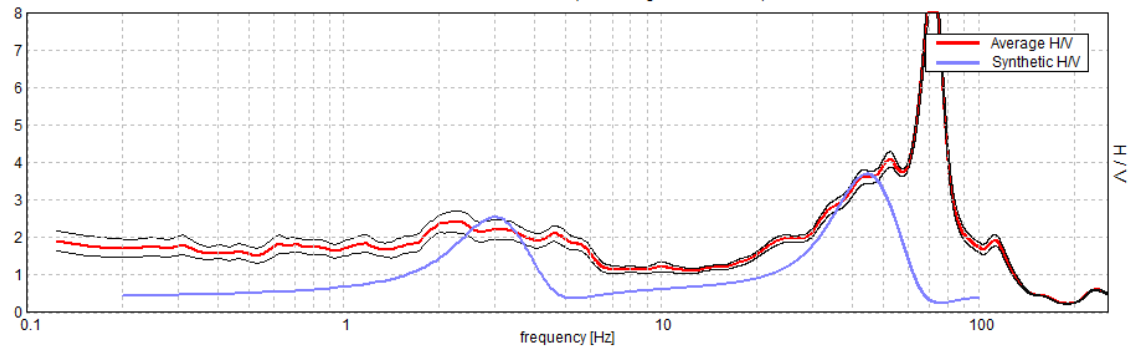
DIRECTIONAL H/V



SINGLE COMPONENT SPECTRA

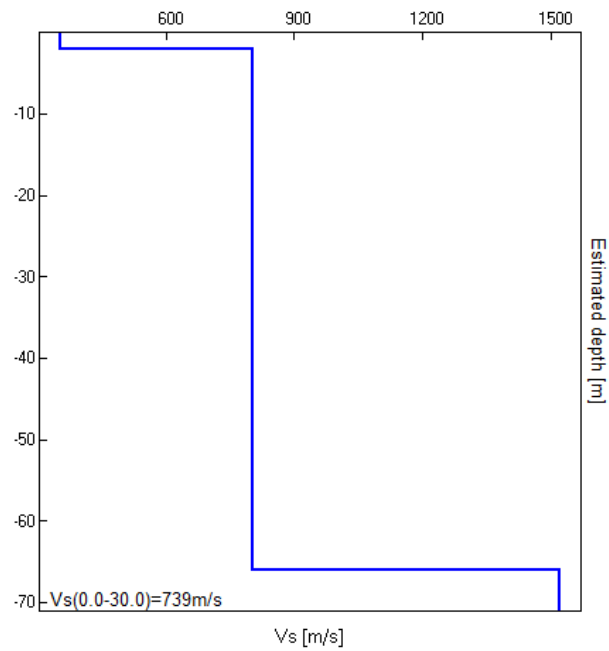


EXPERIMENTAL vs. SYNTHETIC H/V
Max. H/V at 39.97 ± 0.06 Hz (in the range 0.0 - 40.0 Hz).



Depth at the bottom of the layer [m]	Thickness [m]	Vs [m/s]	Poisson ratio
2.00	2.00	353	0.42
66.00	64.00	802	0.42
inf.	inf.	1520	0.45

Vs(0.0-30.0)=739m/s



[According to the SESAME, 2005 guidelines. **Please read carefully the [Grilla](#) manual before interpreting the following tables.**]

Max. H/V at 39.97 ± 0.06 Hz (in the range 0.0 - 40.0 Hz).

Criteria for a reliable H/V curve

[All 3 should be fulfilled]

$f_0 > 10 / L_w$	$39.97 > 0.50$	OK	
$n_c(f_0) > 200$	$55956.3 > 200$	OK	
$\sigma_A(f) < 2$ for $0.5f_0 < f < 2f_0$ if $f_0 > 0.5\text{Hz}$ $\sigma_A(f) < 3$ for $0.5f_0 < f < 2f_0$ if $f_0 < 0.5\text{Hz}$	Exceeded 0 out of 1920 times	OK	

Criteria for a clear H/V peak

[At least 5 out of 6 should be fulfilled]

Exists f^- in $[f_0/4, f_0]$ $A_{H/V}(f^-) < A_0 / 2$	20.75 Hz	OK	
Exists f^+ in $[f_0, 4f_0]$ $A_{H/V}(f^+) < A_0 / 2$	118.75 Hz	OK	
$A_0 > 2$	$3.29 > 2$	OK	
$f_{\text{peak}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	$ 0.0016 < 0.05$	OK	
$\sigma_f < \varepsilon(f_0)$	$0.06404 < 1.99844$	OK	
$\sigma_A(f_0) < \theta(f_0)$	$0.1832 < 1.58$	OK	

L_w	window length
n_w	number of windows used in the analysis
$n_c = L_w n_w f_0$	number of significant cycles
f	current frequency
f_0	H/V peak frequency
σ_f	standard deviation of H/V peak frequency
$\varepsilon(f_0)$	threshold value for the stability condition $\sigma_f < \varepsilon(f_0)$
A_0	H/V peak amplitude at frequency f_0
$A_{H/V}(f)$	H/V curve amplitude at frequency f
f^-	frequency between $f_0/4$ and f_0 for which $A_{H/V}(f^-) < A_0/2$
f^+	frequency between f_0 and $4f_0$ for which $A_{H/V}(f^+) < A_0/2$
$\sigma_A(f)$	standard deviation of $A_{H/V}(f)$, $\sigma_A(f)$ is the factor by which the mean $A_{H/V}(f)$ curve should be multiplied or divided
$\sigma_{\log H/V}(f)$	standard deviation of $\log A_{H/V}(f)$ curve
$\theta(f_0)$	threshold value for the stability condition $\sigma_A(f) < \theta(f_0)$

Threshold values for σ_f and $\sigma_A(f_0)$

Freq. range [Hz]	< 0.2	0.2 – 0.5	0.5 – 1.0	1.0 – 2.0	> 2.0
$\varepsilon(f_0)$ [Hz]	$0.25 f_0$	$0.2 f_0$	$0.15 f_0$	$0.10 f_0$	$0.05 f_0$
$\theta(f_0)$ for $\sigma_A(f_0)$	3.0	2.5	2.0	1.78	1.58
$\log \theta(f_0)$ for $\sigma_{\log H/V}(f_0)$	0.48	0.40	0.30	0.25	0.20

MACARI N8 (T8/PUG)

Commitente		Comune di San Vito lo capo	
Oggetto dei lavori		Esecuzione di indagini geofisiche ai fini della redazione dello studio geologico propedeutico alla formazione del PUG del Comune di San Vito Lo Capo	
Nome base sismica		T8/PUG	
Coordinate	UTM	4223027.84 m	N 301771.32 m E
Strumento utilizzato		<i>Tromografo digitale TROMINO®</i>	
Operatore		Dott. Colla Vito	
Data e ora		02/02/2022, 14:37	
Nome file		T8/PUG	
Durata		40 min	
Frequenza campionamento		256 Hz	
Accoppiamento strumento-suolo		SUOLO	
Condizioni meteo	Vento	No	
	Pioggia	No	
Transienti nelle vicinanze	Traffico veicolare	No	
	Pedoni	No	
	Altro	No	



MACARI N8 (T8/PUG)

Instrument: TZB-0122/01-20

Data format: 32 byte

Full scale [mV]: 358

Start recording: 02/02/22 14:37:21 End recording: 02/02/22 15:17:21

Channel labels: NORTH SOUTH; EAST WEST; UP DOWN

GPS data not available

Trace length: 0h40'00". Analyzed 97% trace (manual window selection)

Sampling rate: 256 Hz

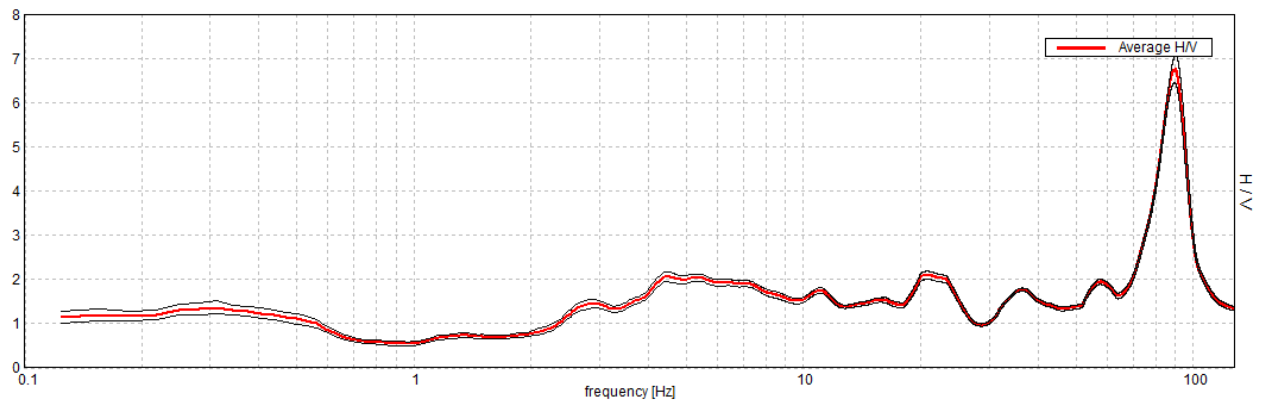
Window size: 20 s

Smoothing type: Triangular window

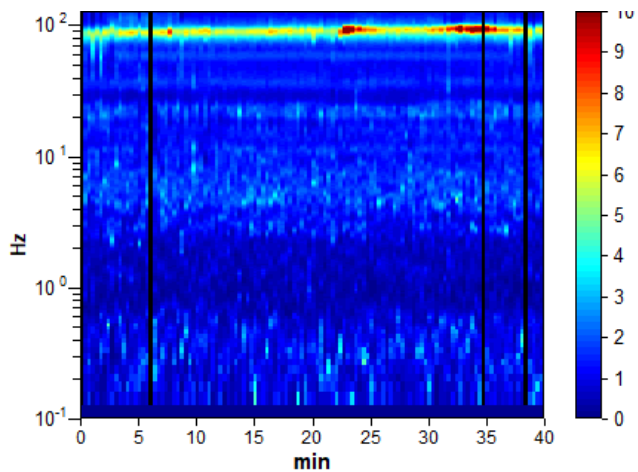
Smoothing: 10%

HORIZONTAL TO VERTICAL SPECTRAL RATIO

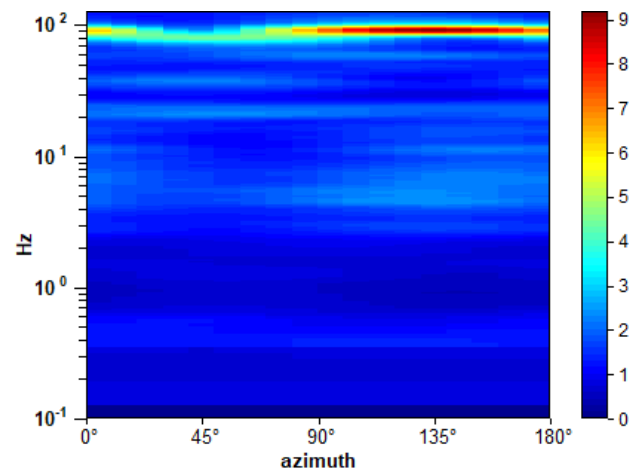
Max. H/V at 20.78 ± 13.74 Hz (in the range 0.0 - 40.0 Hz).



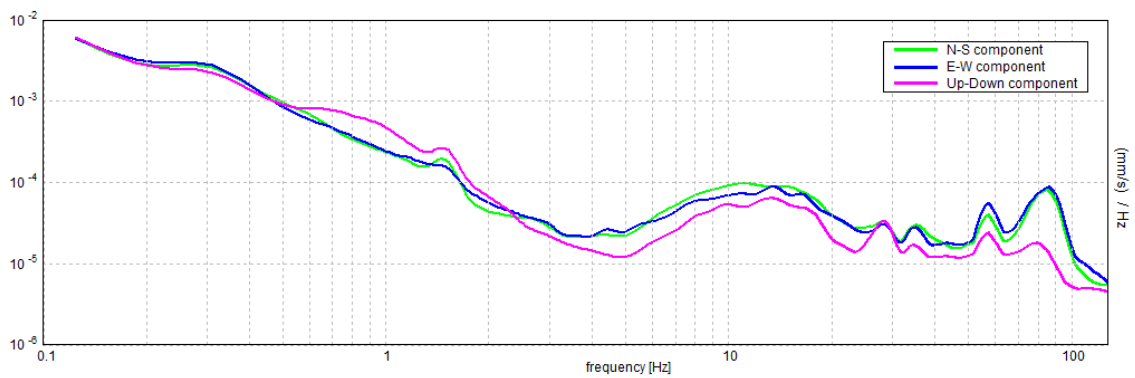
H/V TIME HISTORY



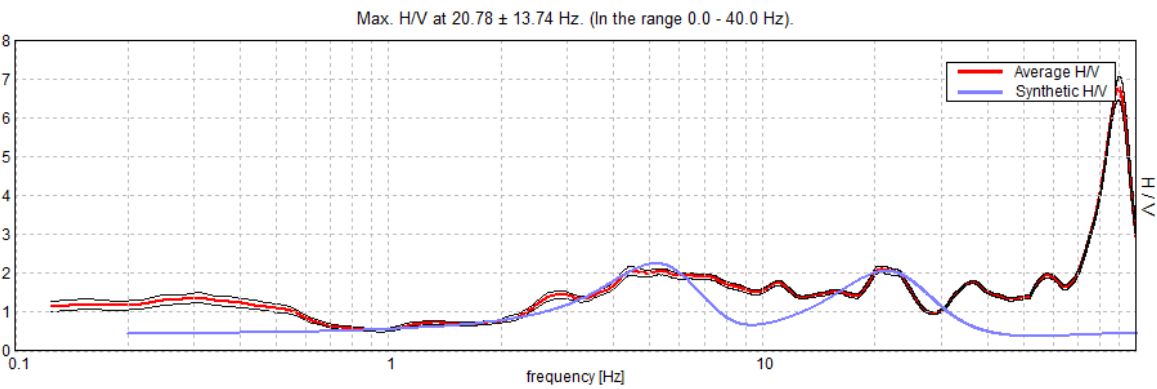
DIRECTIONAL H/V



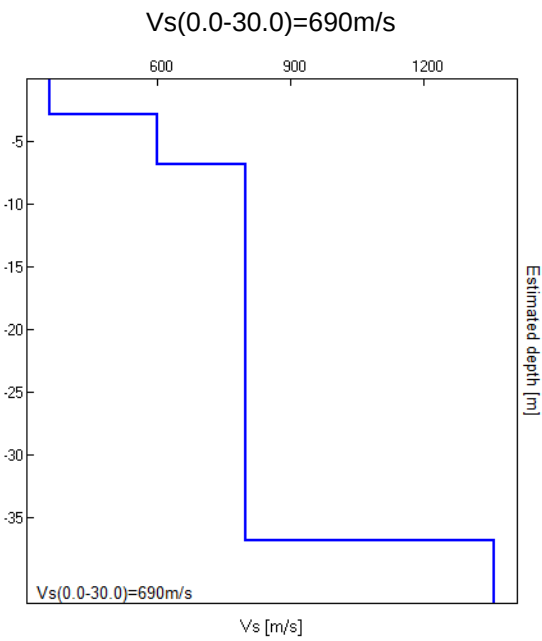
SINGLE COMPONENT SPECTRA



EXPERIMENTAL vs. SYNTHETIC H/V



Depth at the bottom of the layer [m]	Thickness [m]	Vs [m/s]	Poisson ratio
2.80	2.80	358	0.45
6.80	4.00	600	0.45
36.80	30.00	800	0.45
inf.	inf.	1360	0.42



[According to the SESAME, 2005 guidelines. **Please read carefully the [Grilla](#) manual before interpreting the following tables.**]

Max. H/V at 20.78 ± 13.74 Hz (in the range 0.0 - 40.0 Hz).

Criteria for a reliable H/V curve

[All 3 should be fulfilled]

$f_0 > 10 / L_w$	$20.78 > 0.50$	OK	
$n_c(f_0) > 200$	$48212.5 > 200$	OK	
$\sigma_A(f) < 2$ for $0.5f_0 < f < 2f_0$ if $f_0 > 0.5\text{Hz}$ $\sigma_A(f) < 3$ for $0.5f_0 < f < 2f_0$ if $f_0 < 0.5\text{Hz}$	Exceeded 0 out of 998 times	OK	

Criteria for a clear H/V peak

[At least 5 out of 6 should be fulfilled]

Exists f^- in $[f_0/4, f_0]$ $A_{H/V}(f^-) < A_0 / 2$			NO
Exists f^+ in $[f_0, 4f_0]$ $A_{H/V}(f^+) < A_0 / 2$	27.188 Hz	OK	
$A_0 > 2$	$2.10 > 2$	OK	
$f_{\text{peak}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	$ 0.66115 < 0.05$		NO
$\sigma_f < \varepsilon(f_0)$	$13.73947 < 1.03906$		NO
$\sigma_A(f_0) < \theta(f_0)$	$0.0896 < 1.58$	OK	

L_w	window length
n_w	number of windows used in the analysis
$n_c = L_w n_w f_0$	number of significant cycles
f	current frequency
f_0	H/V peak frequency
σ_f	standard deviation of H/V peak frequency
$\varepsilon(f_0)$	threshold value for the stability condition $\sigma_f < \varepsilon(f_0)$
A_0	H/V peak amplitude at frequency f_0
$A_{H/V}(f)$	H/V curve amplitude at frequency f
f^-	frequency between $f_0/4$ and f_0 for which $A_{H/V}(f^-) < A_0/2$
f^+	frequency between f_0 and $4f_0$ for which $A_{H/V}(f^+) < A_0/2$
$\sigma_A(f)$	standard deviation of $A_{H/V}(f)$, $\sigma_A(f)$ is the factor by which the mean $A_{H/V}(f)$ curve should be multiplied or divided
$\sigma_{\log H/V}(f)$	standard deviation of $\log A_{H/V}(f)$ curve
$\theta(f_0)$	threshold value for the stability condition $\sigma_A(f) < \theta(f_0)$

Threshold values for σ_f and $\sigma_A(f_0)$

Freq. range [Hz]	< 0.2	0.2 – 0.5	0.5 – 1.0	1.0 – 2.0	> 2.0
$\varepsilon(f_0)$ [Hz]	$0.25 f_0$	$0.2 f_0$	$0.15 f_0$	$0.10 f_0$	$0.05 f_0$
$\theta(f_0)$ for $\sigma_A(f_0)$	3.0	2.5	2.0	1.78	1.58
$\log \theta(f_0)$ for $\sigma_{\log H/V}(f_0)$	0.48	0.40	0.30	0.25	0.20

MACARI N9 (T9/PUG)

Commitente		Comune di San Vito lo capo			
Oggetto dei lavori		Esecuzione di indagini geofisiche ai fini della redazione dello studio geologico propedeutico alla formazione del PUG del Comune di San Vito Lo Capo			
Nome base sismica		T9/PUG			
Coordinate	UTM	4222648.82 m	N	301576.98 m	E
Strumento utilizzato		Tromografo digitale TROMINO®			
Operatore		Dott. Colla Vito			
Data e ora		02/02/2022, 13:43			
Nome file		T9/PUG			
Durata		40 min			
Frequenza campionamento		256 Hz			
Accoppiamento strumento-suolo		SUOLO			
Condizioni meteo	Vento	No			
	Pioggia	No			
Transienti nelle vicinanze	Traffico veicolare	No			
	Pedoni	No			
	Altro	No			



MACARI N9 (T9/PUG)

Instrument: TZB-0122/01-20

Data format: 32 byte

Full scale [mV]: 358

Start recording: 02/02/22 13:43:25 End recording: 02/02/22 14:23:25

Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN

GPS data not available

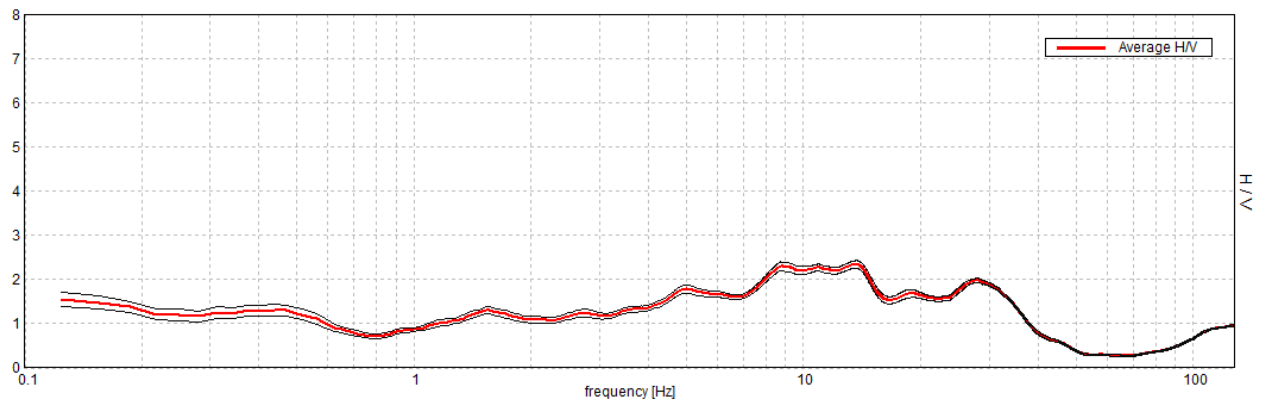
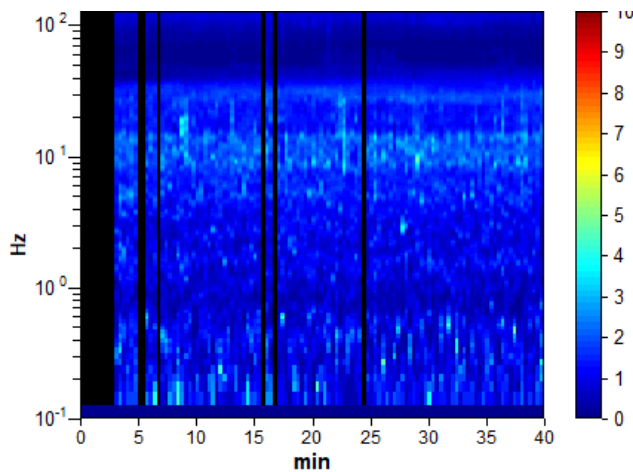
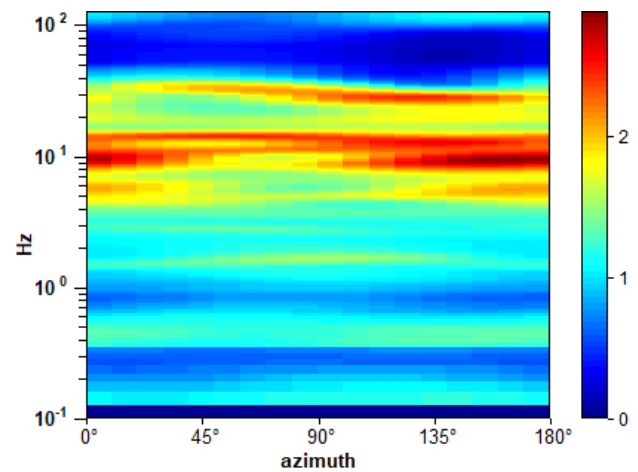
Trace length: 0h40'00". Analyzed 88% trace (manual window selection)

Sampling rate: 256 Hz

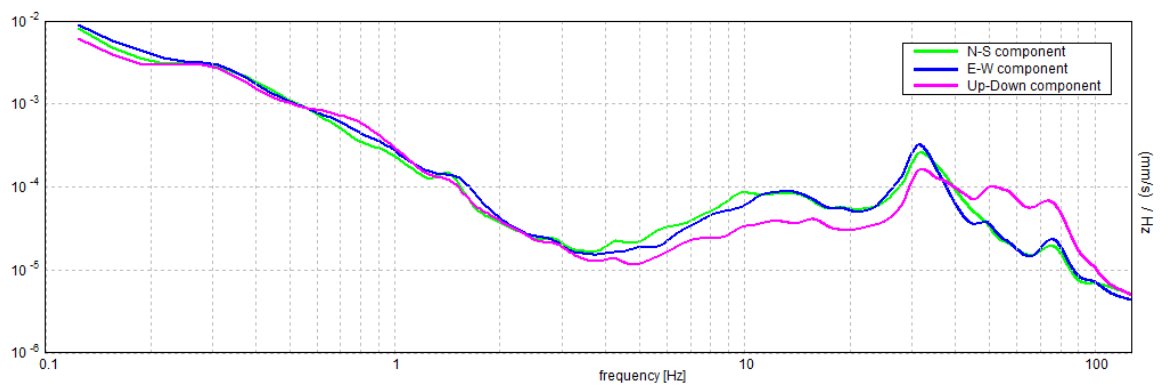
Window size: 20 s

Smoothing type: Triangular window

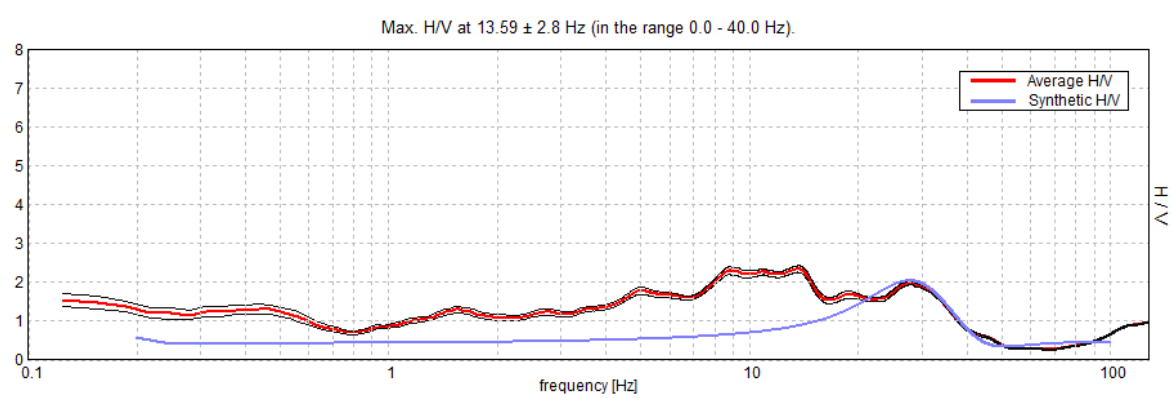
Smoothing: 10%

HORIZONTAL TO VERTICAL SPECTRAL RATIOMax. H/V at 13.59 ± 2.8 Hz (in the range 0.0 - 40.0 Hz).**H/V TIME HISTORY****DIRECTIONAL H/V**

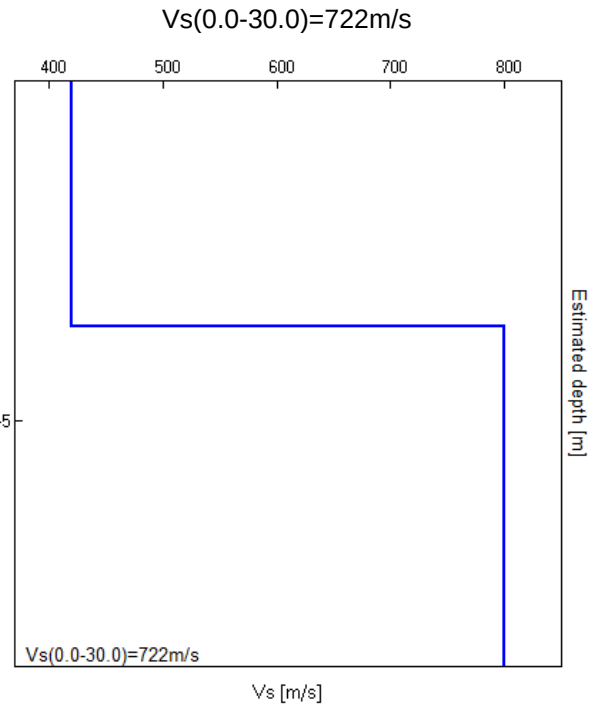
SINGLE COMPONENT SPECTRA



EXPERIMENTAL vs. SYNTHETIC H/V



Depth at the bottom of the layer [m]	Thickness [m]	Vs [m/s]	Poisson ratio
3.60	3.60	420	0.42
inf.	inf.	800	0.42



[According to the SESAME, 2005 guidelines. **Please read carefully the [Grilla](#) manual before interpreting the following tables.**]

Max. H/V at 13.59 ± 2.8 Hz (in the range 0.0 - 40.0 Hz).

Criteria for a reliable H/V curve

[All 3 should be fulfilled]

$f_0 > 10 / L_w$	$13.59 > 0.50$	OK	
$n_c(f_0) > 200$	$28546.9 > 200$	OK	
$\sigma_A(f) < 2$ for $0.5f_0 < f < 2f_0$ if $f_0 > 0.5\text{Hz}$ $\sigma_A(f) < 3$ for $0.5f_0 < f < 2f_0$ if $f_0 < 0.5\text{Hz}$	Exceeded 0 out of 654 times	OK	

Criteria for a clear H/V peak

[At least 5 out of 6 should be fulfilled]

Exists f^- in $[f_0/4, f_0]$ $A_{H/V}(f^-) < A_0 / 2$			NO
Exists f^+ in $[f_0, 4f_0]$ $A_{H/V}(f^+) < A_0 / 2$	36.594 Hz	OK	
$A_0 > 2$	$2.34 > 2$	OK	
$f_{\text{peak}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	$ 0.20566 < 0.05$		NO
$\sigma_f < \varepsilon(f_0)$	$2.79574 < 0.67969$		NO
$\sigma_A(f_0) < \theta(f_0)$	$0.0837 < 1.58$	OK	

L_w	window length
n_w	number of windows used in the analysis
$n_c = L_w n_w f_0$	number of significant cycles
f	current frequency
f_0	H/V peak frequency
σ_f	standard deviation of H/V peak frequency
$\varepsilon(f_0)$	threshold value for the stability condition $\sigma_f < \varepsilon(f_0)$
A_0	H/V peak amplitude at frequency f_0
$A_{H/V}(f)$	H/V curve amplitude at frequency f
f^-	frequency between $f_0/4$ and f_0 for which $A_{H/V}(f^-) < A_0/2$
f^+	frequency between f_0 and $4f_0$ for which $A_{H/V}(f^+) < A_0/2$
$\sigma_A(f)$	standard deviation of $A_{H/V}(f)$, $\sigma_A(f)$ is the factor by which the mean $A_{H/V}(f)$ curve should be multiplied or divided
$\sigma_{\log H/V}(f)$	standard deviation of $\log A_{H/V}(f)$ curve
$\theta(f_0)$	threshold value for the stability condition $\sigma_A(f) < \theta(f_0)$

Threshold values for σ_f and $\sigma_A(f_0)$

Freq. range [Hz]	< 0.2	0.2 – 0.5	0.5 – 1.0	1.0 – 2.0	> 2.0
$\varepsilon(f_0)$ [Hz]	$0.25 f_0$	$0.2 f_0$	$0.15 f_0$	$0.10 f_0$	$0.05 f_0$
$\theta(f_0)$ for $\sigma_A(f_0)$	3.0	2.5	2.0	1.78	1.58
$\log \theta(f_0)$ for $\sigma_{\log H/V}(f_0)$	0.48	0.40	0.30	0.25	0.20

MACARI N10 (T10/PUG)

Commitente		Comune di San Vito lo capo			
Oggetto dei lavori		Esecuzione di indagini geofisiche ai fini della redazione dello studio geologico propedeutico alla formazione del PUG del Comune di San Vito LoCapo			
Nome base sismica		T10/PUG			
Coordinate	UTM	4223467.60 m	N	301667.67 m	E
Strumento utilizzato		<i>Tromografo digitale TROMINO®</i>			
Operatore		Dott. Colla Vito			
Data e ora		02/02/2022, 15:29			
Nome file		T10/PUG			
Durata		40 min			
Frequenza campionamento		256 Hz			
Accoppiamento strumento-suolo		SUOLO			
Condizioni meteo	Vento	No			
	Pioggia	No			
Transienti nelle vicinanze	Traffico veicolare	No			
	Pedoni	No			
	Altro	No			



MACARI N10 (T10/PUG)

Instrument: TZB-0122/01-20

Data format: 32 byte

Full scale [mV]: 358

Start recording: 02/02/22 15:29:43 End recording: 02/02/22 16:09:43

Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN

GPS data not available

Trace length: 0h40'00". Analyzed 98% trace (manual window selection)

Sampling rate: 256 Hz

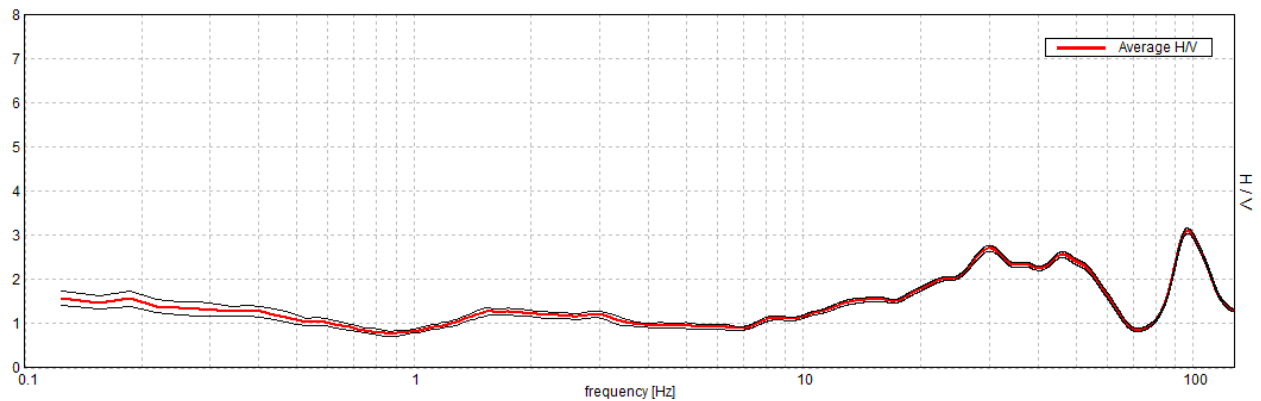
Window size: 20 s

Smoothing type: Triangular window

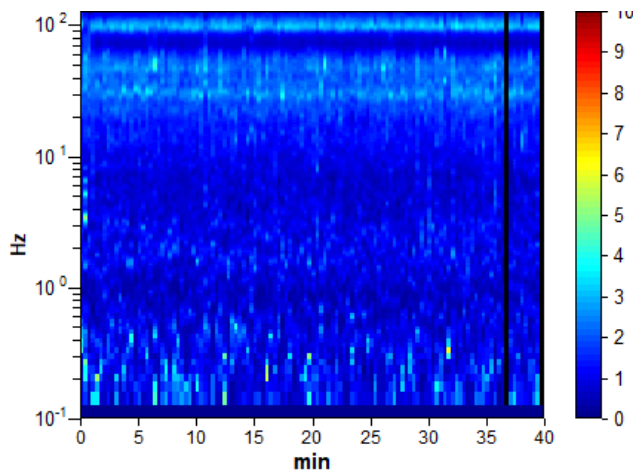
Smoothing: 10%

HORIZONTAL TO VERTICAL SPECTRAL RATIO

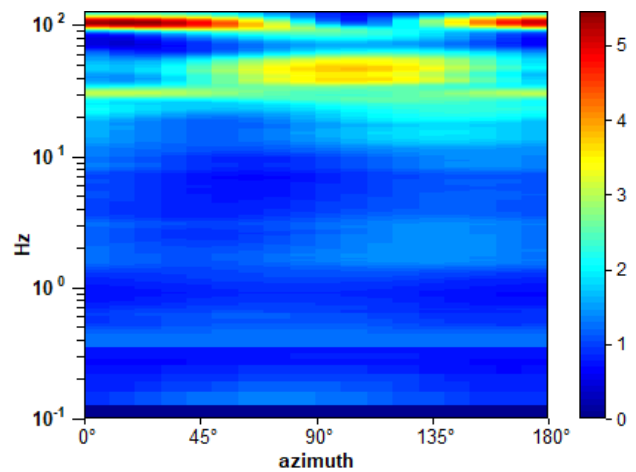
Max. H/V at 30.0 ± 5.37 Hz (in the range 0.0 - 40.0 Hz).



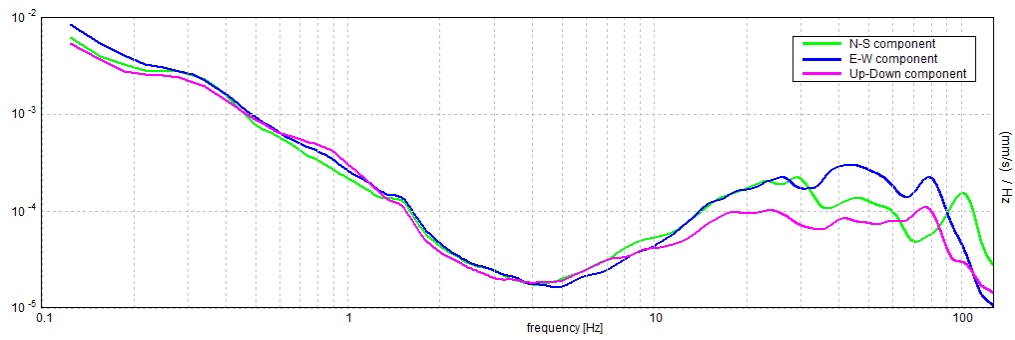
H/V TIME HISTORY



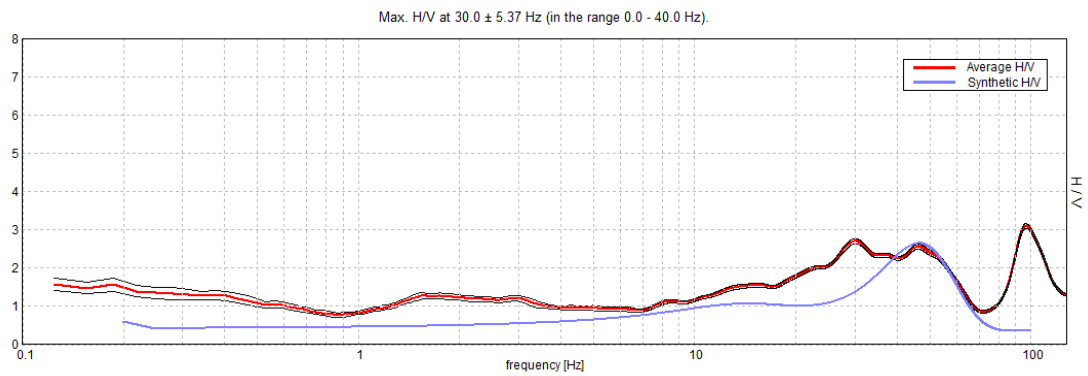
DIRECTIONAL H/V



SINGLE COMPONENT SPECTRA

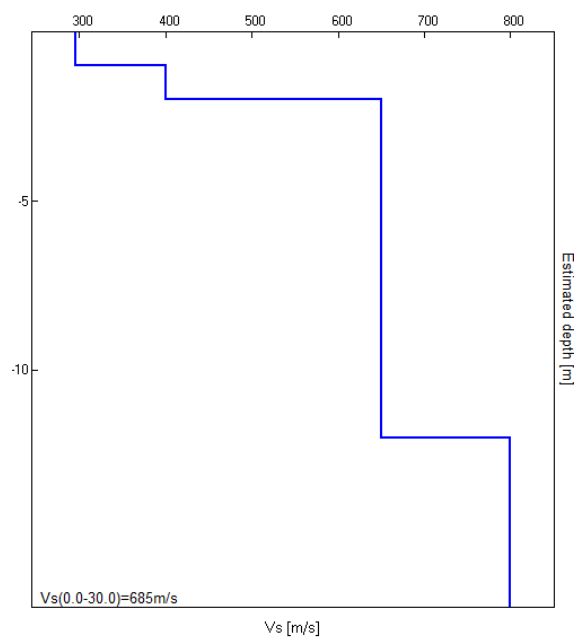


EXPERIMENTAL vs. SYNTHETIC H/V



Depth at the bottom of the layer [m]	Thickness [m]	Vs [m/s]	Poisson ratio
1.00	1.00	295	0.45
2.00	1.00	400	0.45
12.00	10.00	650	0.45
inf.	inf.	800	0.42

$V_s(0.0-30.0)=685\text{m/s}$



[According to the SESAME, 2005 guidelines. **Please read carefully the [Grilla](#) manual before interpreting the following tables.**]

Max. H/V at 30.0 ± 5.37 Hz (in the range 0.0 - 40.0 Hz).

Criteria for a reliable H/V curve

[All 3 should be fulfilled]

$f_0 > 10 / L_w$	$30.00 > 0.50$	OK	
$n_c(f_0) > 200$	$70800.0 > 200$	OK	
$\sigma_A(f) < 2$ for $0.5f_0 < f < 2f_0$ if $f_0 > 0.5\text{Hz}$ $\sigma_A(f) < 3$ for $0.5f_0 < f < 2f_0$ if $f_0 < 0.5\text{Hz}$	Exceeded 0 out of 1441 times	OK	

Criteria for a clear H/V peak

[At least 5 out of 6 should be fulfilled]

Exists f^- in $[f_0/4, f_0]$ $A_{H/V}(f^-) < A_0 / 2$	11.813 Hz	OK	
Exists f^+ in $[f_0, 4f_0]$ $A_{H/V}(f^+) < A_0 / 2$	63.25 Hz	OK	
$A_0 > 2$	$2.70 > 2$	OK	
$f_{\text{peak}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	$ 0.1791 < 0.05$		NO
$\sigma_f < \varepsilon(f_0)$	$5.37299 < 1.5$		NO
$\sigma_A(f_0) < \theta(f_0)$	$0.066 < 1.58$	OK	

L_w	window length
n_w	number of windows used in the analysis
$n_c = L_w n_w f_0$	number of significant cycles
f	current frequency
f_0	H/V peak frequency
σ_f	standard deviation of H/V peak frequency
$\varepsilon(f_0)$	threshold value for the stability condition $\sigma_f < \varepsilon(f_0)$
A_0	H/V peak amplitude at frequency f_0
$A_{H/V}(f)$	H/V curve amplitude at frequency f
f^-	frequency between $f_0/4$ and f_0 for which $A_{H/V}(f^-) < A_0/2$
f^+	frequency between f_0 and $4f_0$ for which $A_{H/V}(f^+) < A_0/2$
$\sigma_A(f)$	standard deviation of $A_{H/V}(f)$, $\sigma_A(f)$ is the factor by which the mean $A_{H/V}(f)$ curve should be multiplied or divided
$\sigma_{\log H/V}(f)$	standard deviation of $\log A_{H/V}(f)$ curve
$\theta(f_0)$	threshold value for the stability condition $\sigma_A(f) < \theta(f_0)$

Threshold values for σ_f and $\sigma_A(f_0)$

Freq. range [Hz]	< 0.2	0.2 – 0.5	0.5 – 1.0	1.0 – 2.0	> 2.0
$\varepsilon(f_0)$ [Hz]	$0.25 f_0$	$0.2 f_0$	$0.15 f_0$	$0.10 f_0$	$0.05 f_0$
$\theta(f_0)$ for $\sigma_A(f_0)$	3.0	2.5	2.0	1.78	1.58
$\log \theta(f_0)$ for $\sigma_{\log H/V}(f_0)$	0.48	0.40	0.30	0.25	0.20

CASTELLUZZO N11 (T11/PUG)

Commitente		Comune di San Vito lo capo			
Oggetto dei lavori		Esecuzione di indagini geofisiche ai fini della redazione dello studio geologico propedeutico alla formazione del PUG del Comune di San Vito Lo Capo			
Nome base sismica		T11/PUG			
Coordinate	UTM	4220028.20 m	N	300617.36 m	E
Strumento utilizzato		Tromografo digitale TROMINO®			
Operatore		Dott. Colla Vito			
Data e ora		02/02/2022, 11:57			
Nome file		T11/PUG			
Durata		40 min			
Frequenza campionamento		256 Hz			
Accoppiamento strumento-suolo		SUOLO			
Condizioni meteo	Vento	No			
	Pioggia	No			
Transienti nelle vicinanze	Traffico veicolare	Si			
	Pedoni	No			
	Altro	No			



CASTELLUZZO N11 (T11/PUG)

Instrument: TZB-0122/01-20

Data format: 32 byte

Full scale [mV]: 358

Start recording: 02/02/22 11:57:12 End recording: 02/02/22 12:37:12

Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN

GPS data not available

Trace length: 0h40'00". Analysis performed on the entire trace.

Sampling rate: 256 Hz

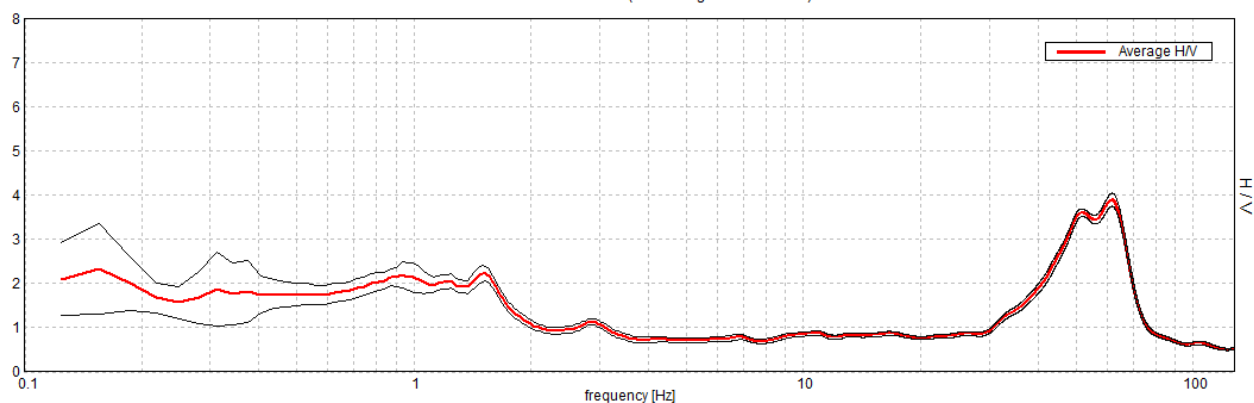
Window size: 20 s

Smoothing type: Triangular window

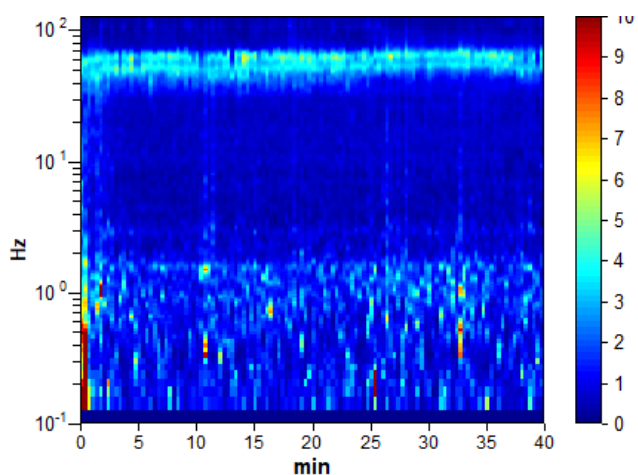
Smoothing: 10%

HORIZONTAL TO VERTICAL SPECTRAL RATIO

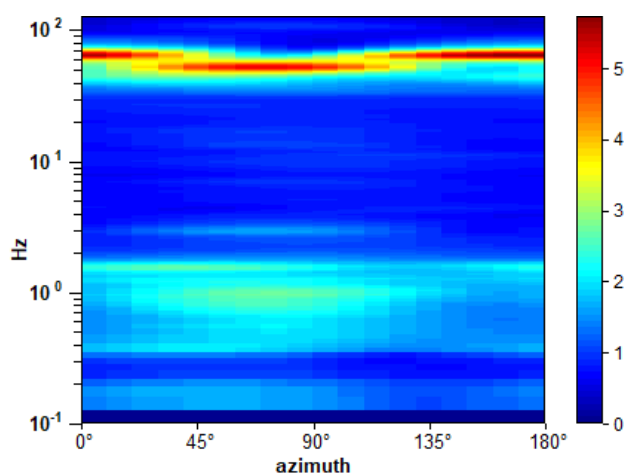
Max. H/V at 0.16 ± 0.0 Hz (in the range 0.0 - 35.0 Hz).



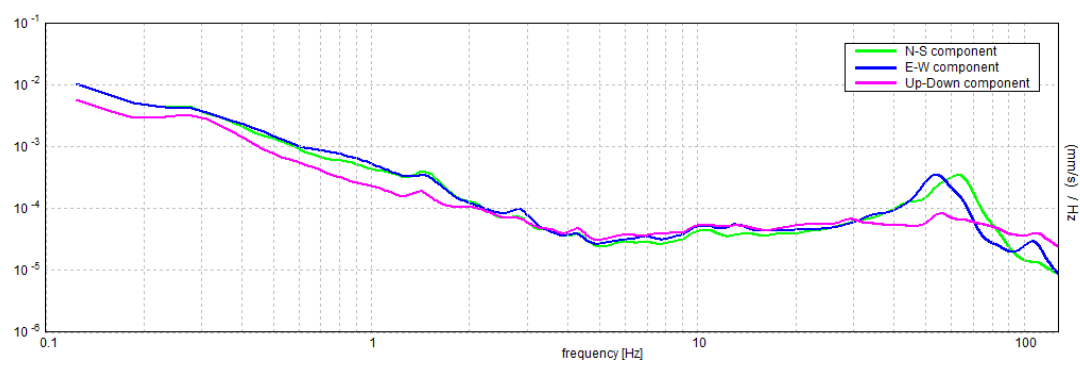
H/V TIME HISTORY



DIRECTIONAL H/V

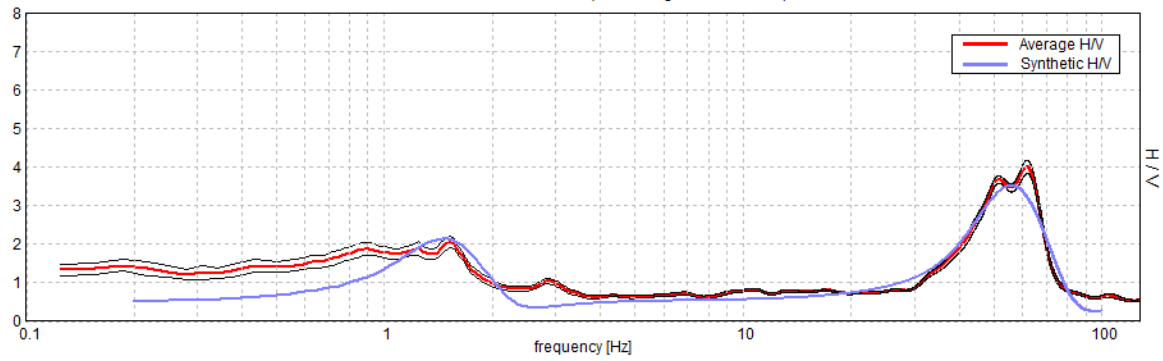


SINGLE COMPONENT SPECTRA



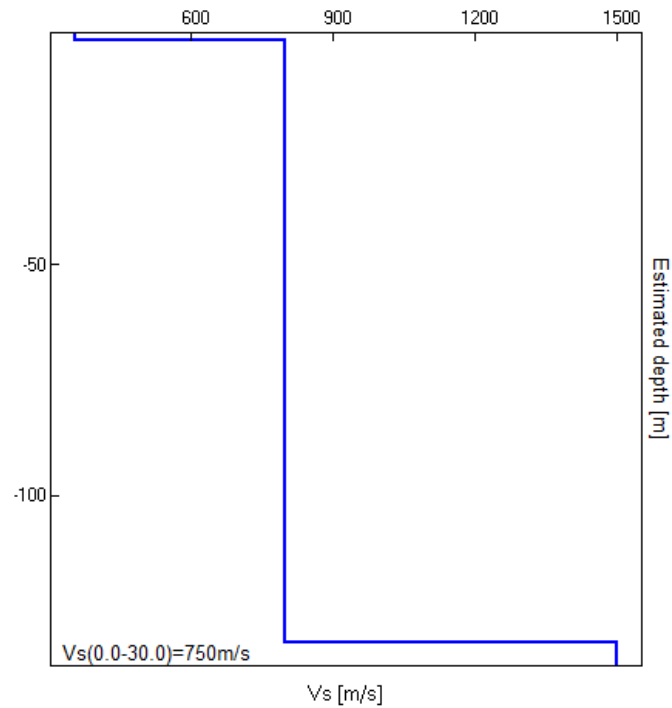
EXPERIMENTAL vs. SYNTHETIC H/V

Max. H/V at 1.53 ± 27.67 Hz (in the range 0.0 - 40.0 Hz).



Depth at the bottom of the layer [m]	Thickness [m]	Vs [m/s]	Poisson ratio
1.60	1.60	356	0.42
131.60	130.00	800	0.42
inf.	inf.	1500	0.42

Vs(0.0-30.0)=750m/s



[According to the SESAME, 2005 guidelines. **Please read carefully the [Grilla](#) manual before interpreting the following tables.**]

Max. H/V at 0.16 ± 0.0 Hz (in the range 0.0 - 35.0 Hz).

Criteria for a reliable H/V curve

[All 3 should be fulfilled]

$f_0 > 10 / L_w$	$0.16 > 0.50$		NO
$n_c(f_0) > 200$	$375.0 > 200$	OK	
$\sigma_A(f) < 2$ for $0.5f_0 < f < 2f_0$ if $f_0 > 0.5\text{Hz}$ $\sigma_A(f) < 3$ for $0.5f_0 < f < 2f_0$ if $f_0 < 0.5\text{Hz}$	Exceeded 0 out of 8 times	OK	

Criteria for a clear H/V peak

[At least 5 out of 6 should be fulfilled]

Exists f^- in $[f_0/4, f_0]$ $A_{H/V}(f^-) < A_0 / 2$	0.094 Hz	OK	
Exists f^+ in $[f_0, 4f_0]$ $A_{H/V}(f^+) < A_0 / 2$			NO
$A_0 > 2$	$2.33 > 2$	OK	
$f_{\text{peak}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	$ 0.01826 < 0.05$	OK	
$\sigma_f < \varepsilon(f_0)$	$0.00285 < 0.03906$	OK	
$\sigma_A(f_0) < \theta(f_0)$	$1.0315 < 3.0$	OK	

L_w	window length
n_w	number of windows used in the analysis
$n_c = L_w n_w f_0$	number of significant cycles
f	current frequency
f_0	H/V peak frequency
σ_f	standard deviation of H/V peak frequency
$\varepsilon(f_0)$	threshold value for the stability condition $\sigma_f < \varepsilon(f_0)$
A_0	H/V peak amplitude at frequency f_0
$A_{H/V}(f)$	H/V curve amplitude at frequency f
f^-	frequency between $f_0/4$ and f_0 for which $A_{H/V}(f^-) < A_0/2$
f^+	frequency between f_0 and $4f_0$ for which $A_{H/V}(f^+) < A_0/2$
$\sigma_A(f)$	standard deviation of $A_{H/V}(f)$, $\sigma_A(f)$ is the factor by which the mean $A_{H/V}(f)$ curve should be multiplied or divided
$\sigma_{\log H/V}(f)$	standard deviation of $\log A_{H/V}(f)$ curve
$\theta(f_0)$	threshold value for the stability condition $\sigma_A(f) < \theta(f_0)$

Threshold values for σ_f and $\sigma_A(f_0)$

Freq. range [Hz]	< 0.2	0.2 – 0.5	0.5 – 1.0	1.0 – 2.0	> 2.0
$\varepsilon(f_0)$ [Hz]	$0.25 f_0$	$0.2 f_0$	$0.15 f_0$	$0.10 f_0$	$0.05 f_0$
$\theta(f_0)$ for $\sigma_A(f_0)$	3.0	2.5	2.0	1.78	1.58
$\log \theta(f_0)$ for $\sigma_{\log H/V}(f_0)$	0.48	0.40	0.30	0.25	0.20

CASTELLUZZO N12 (T12/PUG)

Commitente		Comune di San Vito lo capo	
Oggetto dei lavori		Esecuzione di indagini geofisiche ai fini della redazione dello studio geologico propedeutico alla formazione del PUG del Comune di San Vito Lo Capo	
Nome base sismica		T12/PUG	
Coordinate	UTM	4220296.63 m N	301417.57 m E
Strumento utilizzato		<i>Tromografo digitale TROMINO®</i>	
Operatore		Dott. Colla Vito	
Data e ora		02/02/2022, 12:47	
Nome file		T12/PUG	
Durata		40 min	
Frequenza campionamento		256 Hz	
Accoppiamento strumento-suolo		SUOLO	
Condizioni meteo	Vento	No	
	Pioggia	No	
Transienti nelle vicinanze	Traffico veicolare	Si	
	Pedoni	No	
	Altro	No	



CASTELLUZZO N12 (T12/PUG)

Instrument: TZB-0122/01-20

Data format: 32 byte

Full scale [mV]: 358

Start recording: 02/02/22 12:47:46 End recording: 02/02/22 13:27:46

Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN

GPS data not available

Trace length: 0h40'00". Analyzed 78% trace (manual window selection)

Sampling rate: 256 Hz

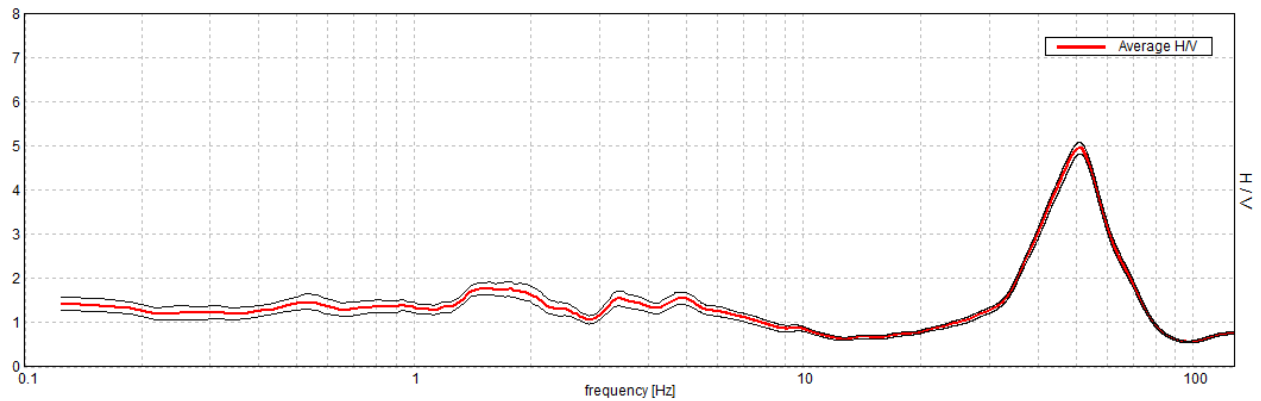
Window size: 20 s

Smoothing type: Triangular window

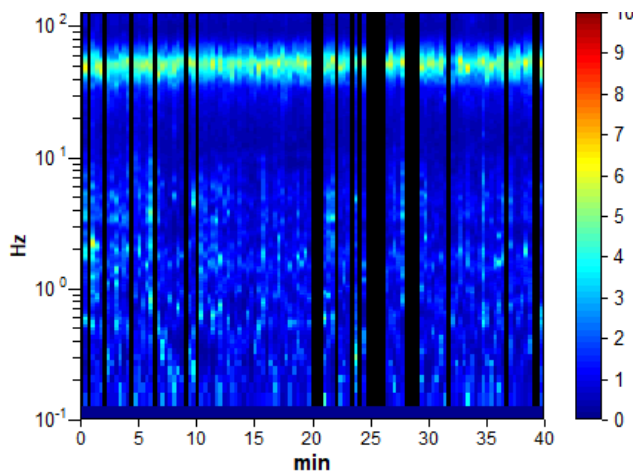
Smoothing: 10%

HORIZONTAL TO VERTICAL SPECTRAL RATIO

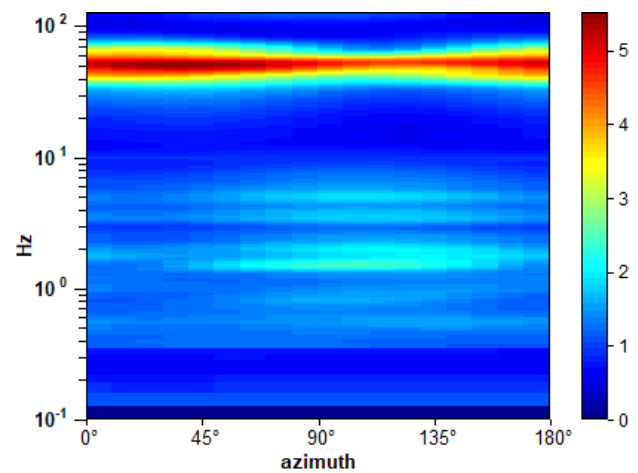
Max. H/V at 39.97 ± 7.83 Hz (in the range 0.0 - 40.0 Hz).



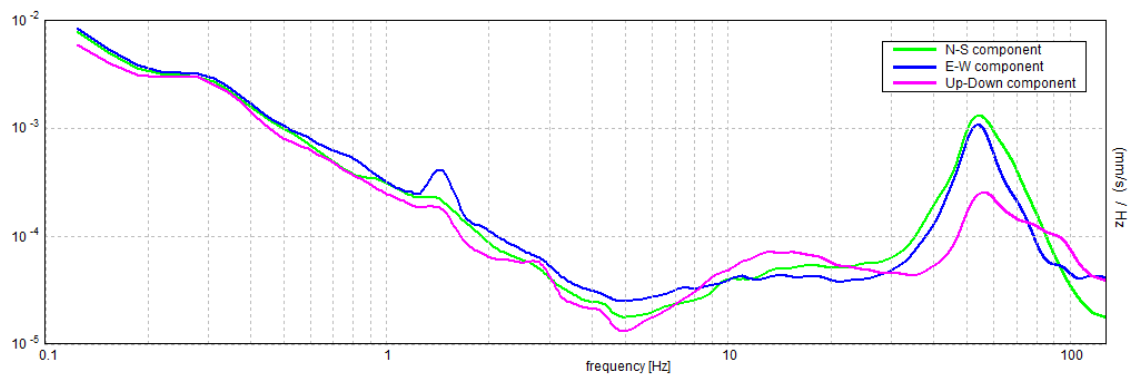
H/V TIME HISTORY



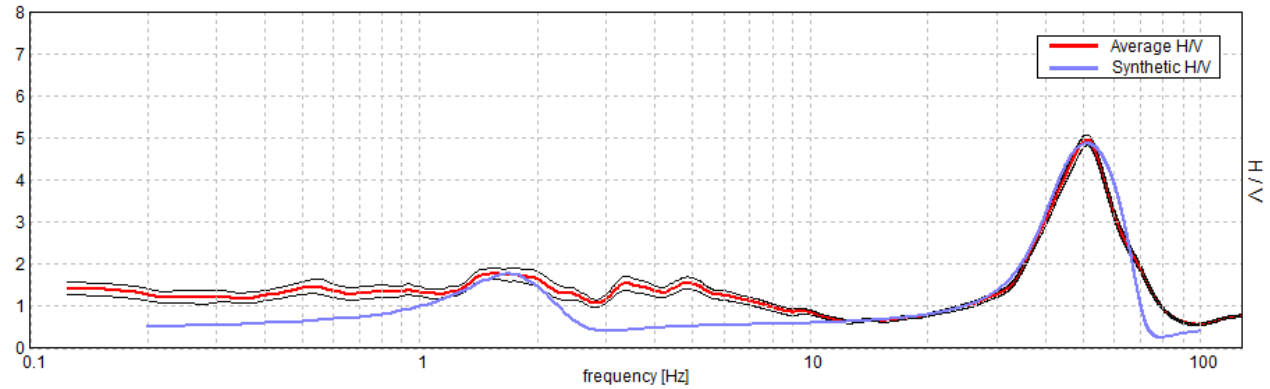
DIRECTIONAL H/V



SINGLE COMPONENT SPECTRA

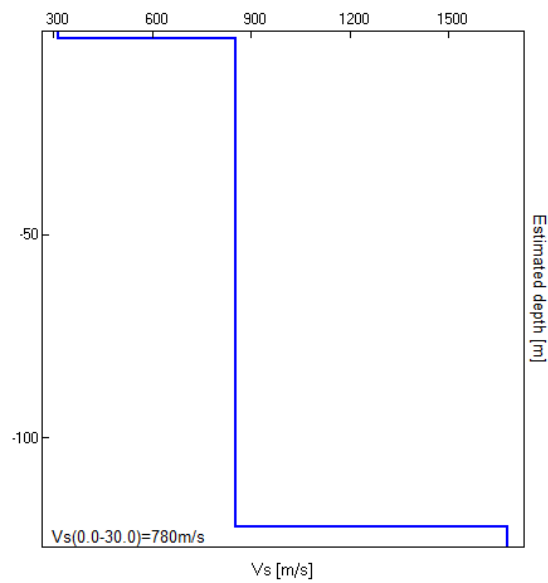


EXPERIMENTAL vs. SYNTHETIC H/V
Max. H/V at 39.97 ± 7.83 Hz (in the range 0.0 - 40.0 Hz).



Depth at the bottom of the layer [m]	Thickness [m]	Vs [m/s]	Poisson ratio
1.68	1.68	316	0.35
121.68	120.00	855	0.35
inf.	inf.	1677	0.35

Vs(0.0-30.0)=780m/s



[According to the SESAME, 2005 guidelines. **Please read carefully the [Grilla](#) manual before interpreting the following tables.**]

Max. H/V at 39.97 ± 7.83 Hz (in the range 0.0 - 40.0 Hz).

Criteria for a reliable H/V curve

[All 3 should be fulfilled]

$f_0 > 10 / L_w$	$39.97 > 0.50$	OK	
$n_c(f_0) > 200$	$75141.3 > 200$	OK	
$\sigma_A(f) < 2$ for $0.5f_0 < f < 2f_0$ if $f_0 > 0.5\text{Hz}$ $\sigma_A(f) < 3$ for $0.5f_0 < f < 2f_0$ if $f_0 < 0.5\text{Hz}$	Exceeded 0 out of 1920 times	OK	

Criteria for a clear H/V peak

[At least 5 out of 6 should be fulfilled]

Exists f^- in $[f_0/4, f_0]$ $A_{H/V}(f^-) < A_0 / 2$	32.75 Hz	OK	
Exists f^+ in $[f_0, 4f_0]$ $A_{H/V}(f^+) < A_0 / 2$	73.344 Hz	OK	
$A_0 > 2$	$3.02 > 2$	OK	
$f_{\text{peak}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	$ 0.19601 < 0.05$		NO
$\sigma_f < \varepsilon(f_0)$	$7.83408 < 1.99844$		NO
$\sigma_A(f_0) < \theta(f_0)$	$0.1234 < 1.58$	OK	

L_w	window length
n_w	number of windows used in the analysis
$n_c = L_w n_w f_0$	number of significant cycles
f	current frequency
f_0	H/V peak frequency
σ_f	standard deviation of H/V peak frequency
$\varepsilon(f_0)$	threshold value for the stability condition $\sigma_f < \varepsilon(f_0)$
A_0	H/V peak amplitude at frequency f_0
$A_{H/V}(f)$	H/V curve amplitude at frequency f
f^-	frequency between $f_0/4$ and f_0 for which $A_{H/V}(f^-) < A_0/2$
f^+	frequency between f_0 and $4f_0$ for which $A_{H/V}(f^+) < A_0/2$
$\sigma_A(f)$	standard deviation of $A_{H/V}(f)$, $\sigma_A(f)$ is the factor by which the mean $A_{H/V}(f)$ curve should be multiplied or divided
$\sigma_{\log H/V}(f)$	standard deviation of $\log A_{H/V}(f)$ curve
$\theta(f_0)$	threshold value for the stability condition $\sigma_A(f) < \theta(f_0)$

Threshold values for σ_f and $\sigma_A(f_0)$

Freq. range [Hz]	< 0.2	0.2 – 0.5	0.5 – 1.0	1.0 – 2.0	> 2.0
$\varepsilon(f_0)$ [Hz]	$0.25 f_0$	$0.2 f_0$	$0.15 f_0$	$0.10 f_0$	$0.05 f_0$
$\theta(f_0)$ for $\sigma_A(f_0)$	3.0	2.5	2.0	1.78	1.58
$\log \theta(f_0)$ for $\sigma_{\log H/V}(f_0)$	0.48	0.40	0.30	0.25	0.20

CASTELLUZZO N13 (T13/PUG)

Commitente		Comune di San Vito lo capo	
Oggetto dei lavori		Esecuzione di indagini geofisiche ai fini della redazione dello studio geologico propedeutico alla formazione del PUG del Comune di San Vito Lo Capo	
Nome base sismica		T13/PUG	
Coordinate	UTM	4219219.95 m	N 302125.10 m E
Strumento utilizzato		<i>Tromografo digitale TROMINO®</i>	
Operatore		Dott. Colla Vito	
Data e ora		02/02/2022, 10:09	
Nome file		T13/PUG	
Durata		40 min	
Frequenza campionamento		256 Hz	
Accoppiamento strumento-suolo		SUOLO	
Condizioni meteo	Vento	No	
	Pioggia	No	
Transienti nelle vicinanze	Traffico veicolare	Si	
	Pedoni	No	
	Altro	No	



CASTELLUZZO N13 (T13/PUG)

Instrument: TZB-0122/01-20

Data format: 32 byte

Full scale [mV]: 358

Start recording: 02/02/22 10:09:48 End recording: 02/02/22 10:49:48

Channel labels: NORTH SOUTH; EAST WEST; UP DOWN

GPS data not available

Trace length: 0h40'00". Analyzed 60% trace (manual window selection)

Sampling rate: 256 Hz

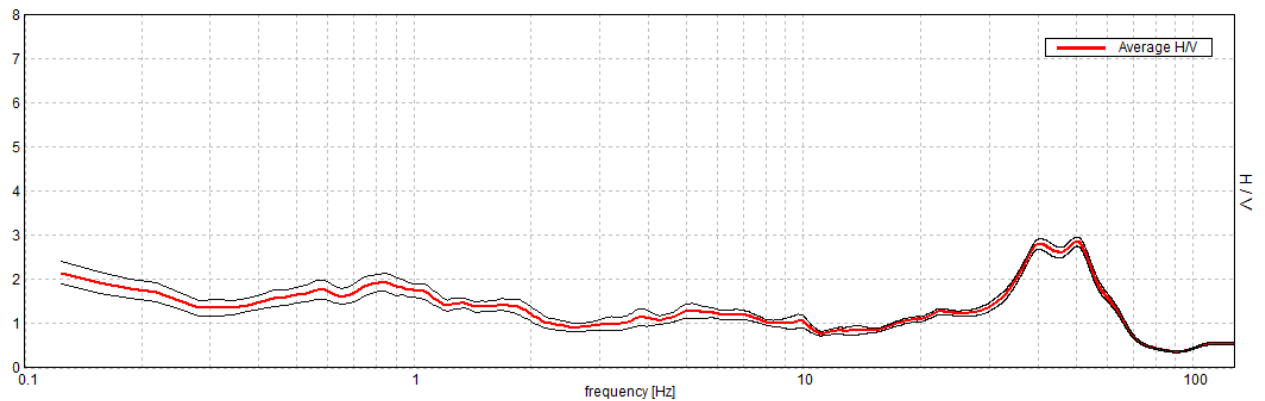
Window size: 20 s

Smoothing type: Triangular window

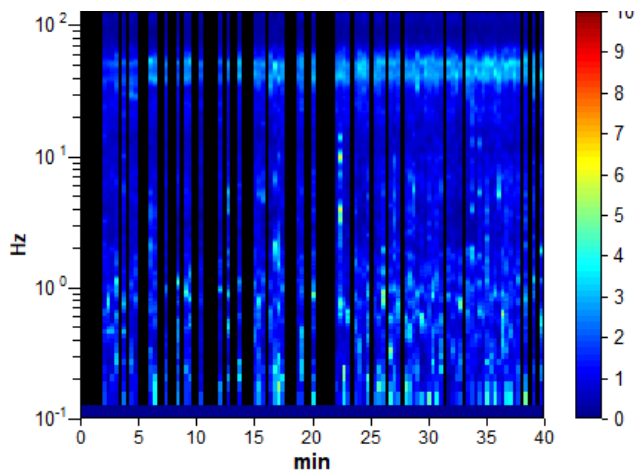
Smoothing: 10%

HORIZONTAL TO VERTICAL SPECTRAL RATIO

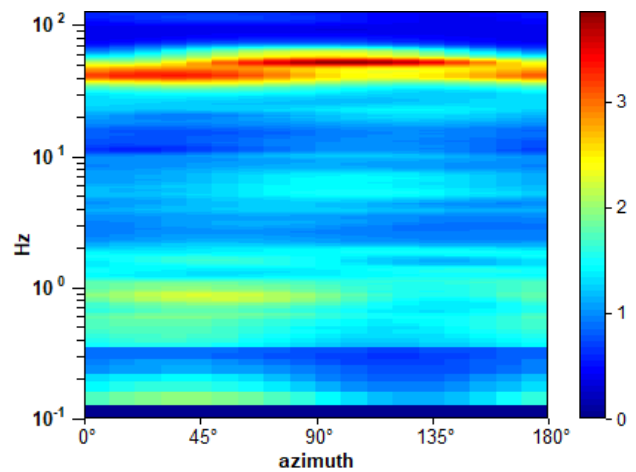
Max. H/V at 0.13 ± 0.36 Hz (in the range 0.0 - 30.0 Hz).



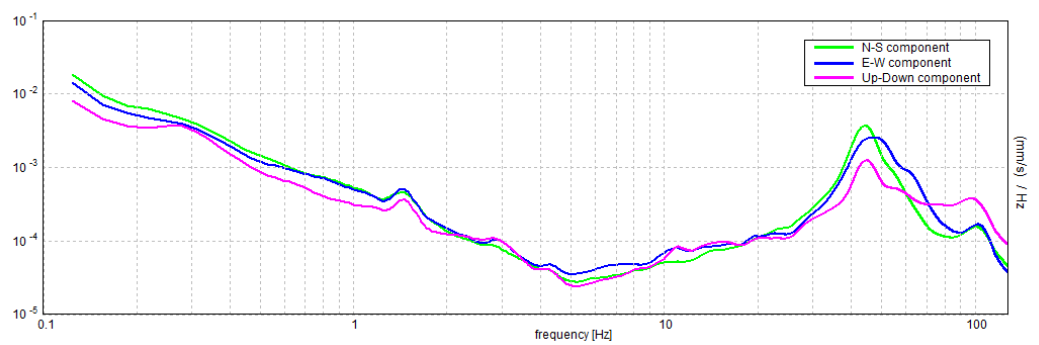
H/V TIME HISTORY



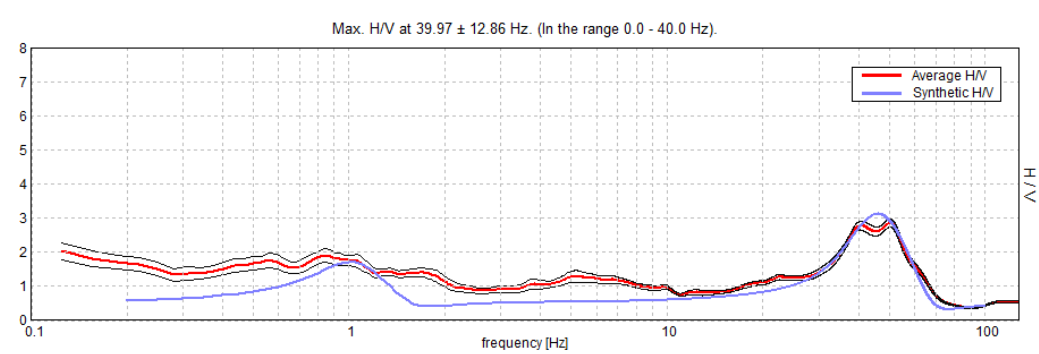
DIRECTIONAL H/V



SINGLE COMPONENT SPECTRA

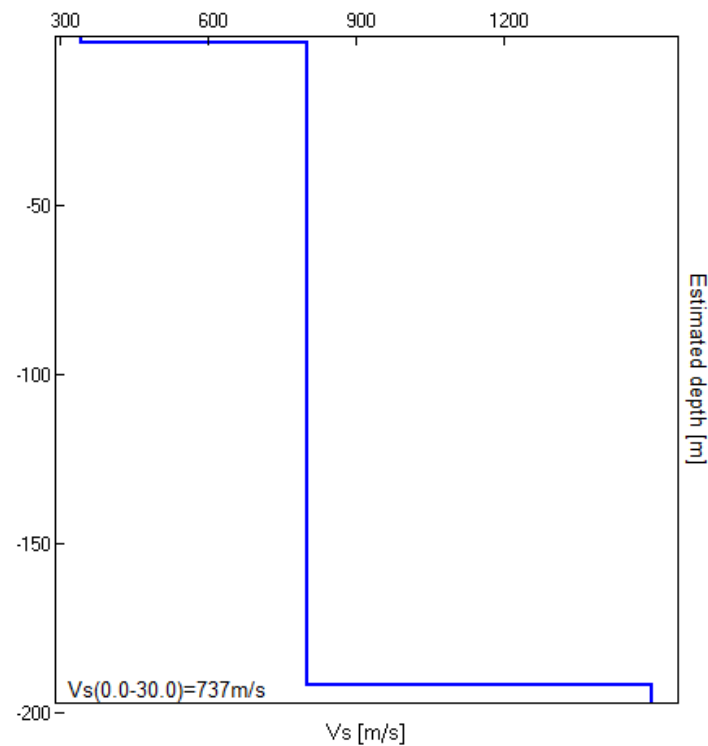


EXPERIMENTAL vs. SYNTHETIC H/V



Depth at the bottom of the layer [m]	Thickness [m]	Vs [m/s]	Poisson ratio
1.90	1.90	342	0.35
191.90	190.00	800	0.35
inf.	inf.	1500	0.35

Vs(0.0-30.0)=737m/s



[According to the SESAME, 2005 guidelines. **Please read carefully the [Grilla](#) manual before interpreting the following tables.**]

Max. H/V at 0.13 ± 0.36 Hz (in the range 0.0 - 30.0 Hz).

Criteria for a reliable H/V curve

[All 3 should be fulfilled]

$f_0 > 10 / L_w$	$0.13 > 0.50$		NO
$n_c(f_0) > 200$	$180.0 > 200$		NO
$\sigma_A(f) < 2$ for $0.5f_0 < f < 2f_0$ if $f_0 > 0.5\text{Hz}$ $\sigma_A(f) < 3$ for $0.5f_0 < f < 2f_0$ if $f_0 < 0.5\text{Hz}$	Exceeded 0 out of 7 times	OK	

Criteria for a clear H/V peak

[At least 5 out of 6 should be fulfilled]

Exists f^- in $[f_0/4, f_0]$ $A_{H/V}(f^-) < A_0 / 2$	0.094 Hz	OK	
Exists f^+ in $[f_0, 4f_0]$ $A_{H/V}(f^+) < A_0 / 2$			NO
$A_0 > 2$	$2.15 > 2$	OK	
$f_{\text{peak}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	$ 2.84129 < 0.05$		NO
$\sigma_f < \varepsilon(f_0)$	$0.35516 < 0.03125$		NO
$\sigma_A(f_0) < \theta(f_0)$	$0.2585 < 3.0$	OK	

L_w	window length
n_w	number of windows used in the analysis
$n_c = L_w n_w f_0$	number of significant cycles
f	current frequency
f_0	H/V peak frequency
σ_f	standard deviation of H/V peak frequency
$\varepsilon(f_0)$	threshold value for the stability condition $\sigma_f < \varepsilon(f_0)$
A_0	H/V peak amplitude at frequency f_0
$A_{H/V}(f)$	H/V curve amplitude at frequency f
f^-	frequency between $f_0/4$ and f_0 for which $A_{H/V}(f^-) < A_0/2$
f^+	frequency between f_0 and $4f_0$ for which $A_{H/V}(f^+) < A_0/2$
$\sigma_A(f)$	standard deviation of $A_{H/V}(f)$, $\sigma_A(f)$ is the factor by which the mean $A_{H/V}(f)$ curve should be multiplied or divided
$\sigma_{\log H/V}(f)$	standard deviation of $\log A_{H/V}(f)$ curve
$\theta(f_0)$	threshold value for the stability condition $\sigma_A(f) < \theta(f_0)$

Threshold values for σ_f and $\sigma_A(f_0)$

Freq. range [Hz]	< 0.2	0.2 – 0.5	0.5 – 1.0	1.0 – 2.0	> 2.0
$\varepsilon(f_0)$ [Hz]	$0.25 f_0$	$0.2 f_0$	$0.15 f_0$	$0.10 f_0$	$0.05 f_0$
$\theta(f_0)$ for $\sigma_A(f_0)$	3.0	2.5	2.0	1.78	1.58
$\log \theta(f_0)$ for $\sigma_{\log H/V}(f_0)$	0.48	0.40	0.30	0.25	0.20

CASTELLUZZO N14 (T14/PUG)

Commitente		Comune di San Vito lo capo			
Oggetto dei lavori		Esecuzione di indagini geofisiche ai fini della redazione dello studio geologico propedeutico alla formazione del PUG del Comune di San Vito Lo Capo			
Nome base sismica		T14/PUG			
Coordinate	UTM	4219655.18 m	N	301120.44 m	E
Strumento utilizzato		Tromografo digitale TROMINO®			
Operatore		Dott. Colla Vito			
Data e ora		02/02/2022, 11:02			
Nome file		T14/PUG			
Durata		40 min			
Frequenza campionamento		256 Hz			
Accoppiamento strumento-suolo		SUOLO			
Condizioni meteo	Vento	No			
	Pioggia	No			
Transienti nelle vicinanze	Traffico veicolare	Si			
	Pedoni	No			
	Altro	No			



CASTELLUZZO N14 (T14/PUG)

Strumento: TZB-0122/01-20

Formato dati: 32 bit

Fondo scala [mV]: 358

Inizio registrazione: 02/02/2022 11:02:50 Fine registrazione: 02/02/2022 11:42:50

Nomi canali: NORTH SOUTH; EAST WEST ; UP DOWN

Dato GPS non disponibile

Durata registrazione: 0h40'00". Analisi effettuata sull'intera traccia.

Freq. campionamento: 256 Hz

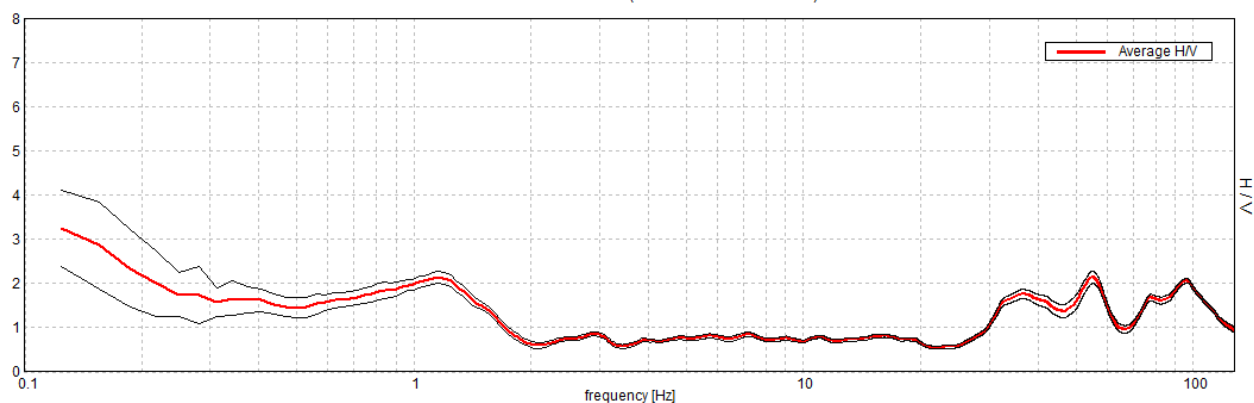
Lunghezza finestre: 20 s

Tipo di lisciamento: Triangular window

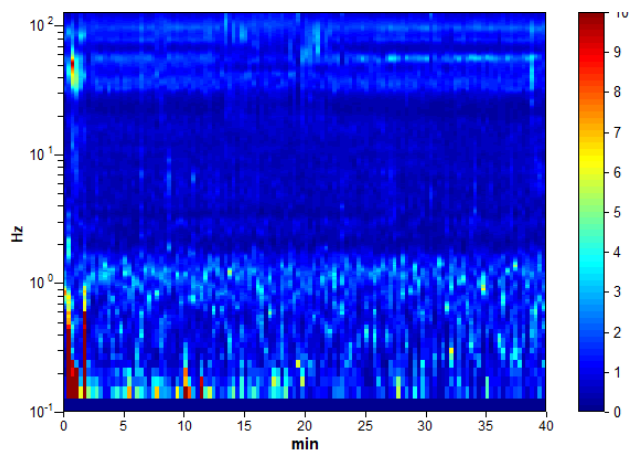
Lisciamento: 10%

HORIZONTAL TO VERTICAL SPECTRAL RATIO

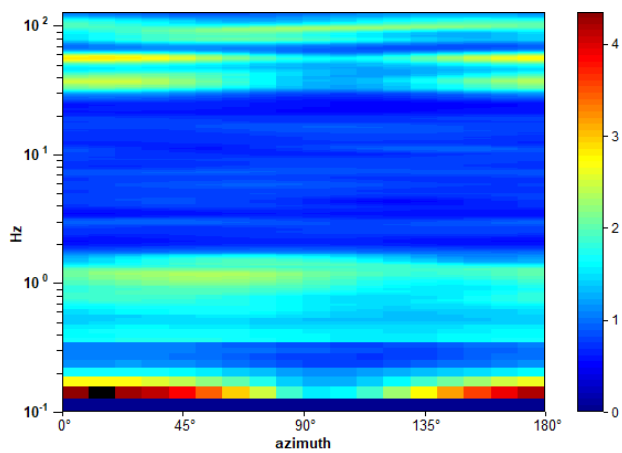
Picco H/V a 1.16 ± 0.41 Hz (nell'intervallo 0.3 - 30.0 Hz).



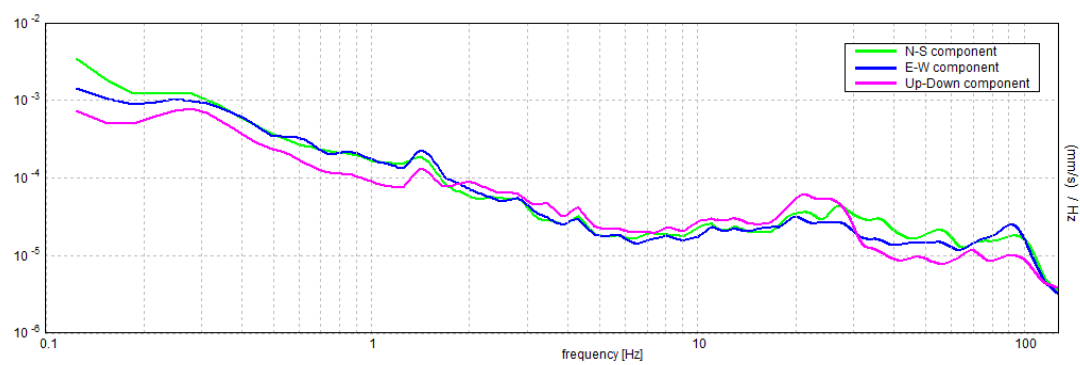
H/V TIME HISTORY



DIRECTIONAL H/V

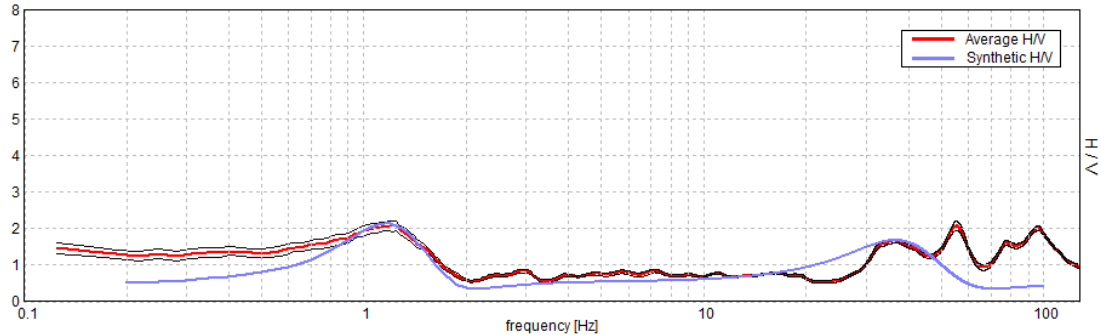


SINGLE COMPONENT SPECTRA



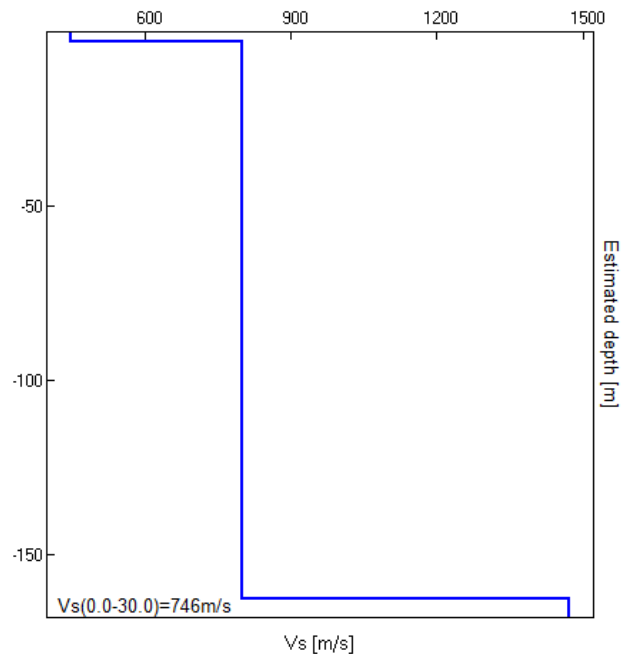
EXPERIMENTAL vs. SYNTHETIC H/V

Max. H/V at 1.19 ± 0.04 Hz. (In the range 0.0 - 40.0 Hz).



Depth at the bottom of the layer [m]	Thickness [m]	Vs [m/s]	Poisson ratio
2.80	2.80	450	0.45
162.80	160.00	800	0.45
inf.	inf.	1470	0.45

$V_s(0.0-30.0)=746\text{m/s}$



[According to the SESAME, 2005 guidelines. **Please read carefully the [Grilla](#) manual before interpreting the following tables.**]

Picco H/V a 1.16 ± 0.41 Hz (nell'intervallo 0.3 - 30.0 Hz).

Criteria for a reliable H/V curve

[All 3 should be fulfilled]

$f_0 > 10 / L_w$	$1.16 > 0.50$	OK	
$n_c(f_0) > 200$	$2775.0 > 200$	OK	
$\sigma_A(f) < 2$ for $0.5f_0 < f < 2f_0$ if $f_0 > 0.5\text{Hz}$ $\sigma_A(f) < 3$ for $0.5f_0 < f < 2f_0$ if $f_0 < 0.5\text{Hz}$	Exceeded 0 out of 56 times	OK	

Criteria for a clear H/V peak

[At least 5 out of 6 should be fulfilled]

Exists f^- in $[f_0/4, f_0]$ $A_{H/V}(f^-) < A_0 / 2$			NO
Exists f^+ in $[f_0, 4f_0]$ $A_{H/V}(f^+) < A_0 / 2$	1.719 Hz	OK	
$A_0 > 2$	$2.13 > 2$	OK	
$f_{\text{peak}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	$ 0.35804 < 0.05$		NO
$\sigma_f < \varepsilon(f_0)$	$0.41399 < 0.11563$		NO
$\sigma_A(f_0) < \theta(f_0)$	$0.1355 < 1.78$	OK	

L_w	window length
n_w	number of windows used in the analysis
$n_c = L_w n_w f_0$	number of significant cycles
f	current frequency
f_0	H/V peak frequency
σ_f	standard deviation of H/V peak frequency
$\varepsilon(f_0)$	threshold value for the stability condition $\sigma_f < \varepsilon(f_0)$
A_0	H/V peak amplitude at frequency f_0
$A_{H/V}(f)$	H/V curve amplitude at frequency f
f^-	frequency between $f_0/4$ and f_0 for which $A_{H/V}(f^-) < A_0/2$
f^+	frequency between f_0 and $4f_0$ for which $A_{H/V}(f^+) < A_0/2$
$\sigma_A(f)$	standard deviation of $A_{H/V}(f)$, $\sigma_A(f)$ is the factor by which the mean $A_{H/V}(f)$ curve should be multiplied or divided
$\sigma_{\log H/V}(f)$	standard deviation of $\log A_{H/V}(f)$ curve
$\theta(f_0)$	threshold value for the stability condition $\sigma_A(f) < \theta(f_0)$

Threshold values for σ_f and $\sigma_A(f_0)$

Freq. range [Hz]	< 0.2	0.2 – 0.5	0.5 – 1.0	1.0 – 2.0	> 2.0
$\varepsilon(f_0)$ [Hz]	$0.25 f_0$	$0.2 f_0$	$0.15 f_0$	$0.10 f_0$	$0.05 f_0$
$\theta(f_0)$ for $\sigma_A(f_0)$	3.0	2.5	2.0	1.78	1.58
$\log \theta(f_0)$ for $\sigma_{\log H/V}(f_0)$	0.48	0.40	0.30	0.25	0.20

CASTELLUZZO N15 (T15/PUG)

Commitente		Comune di San Vito lo capo			
Oggetto dei lavori		Esecuzione di indagini geofisiche ai fini della redazione dello studio geologico propedeutico alla formazione del PUG del Comune di San Vito Lo Capo			
Nome base sismica		T15/PUG			
Coordinate	UTM	4219896.92 m	N	301408.71 m	E
Strumento utilizzato		<i>Tromografo digitale TROMINO®</i>			
Operatore		Dott. Colla Vito			
Data e ora		02/02/2022, 10:09			
Nome file		T15/PUG			
Durata		40 min			
Frequenza campionamento		256 Hz			
Accoppiamento strumento-suolo		SUOLO			
Condizioni meteo	Vento	No			
	Pioggia	No			
Transienti nelle vicinanze	Traffico veicolare	Si			
	Pedoni	No			
	Altro	No			



CASTELLUZZO N15 (T15/PUG)

Instrument: TZB-0122/01-20

Data format: 32 byte

Full scale [mV]: 358

Start recording: 02/02/22 10:09:48 End recording: 02/02/22 10:49:48

Channel labels: NORTH SOUTH; EAST WEST; UP DOWN

GPS data not available

Trace length: 0h40'00". Analyzed 55% trace (manual window selection)

Sampling rate: 256 Hz

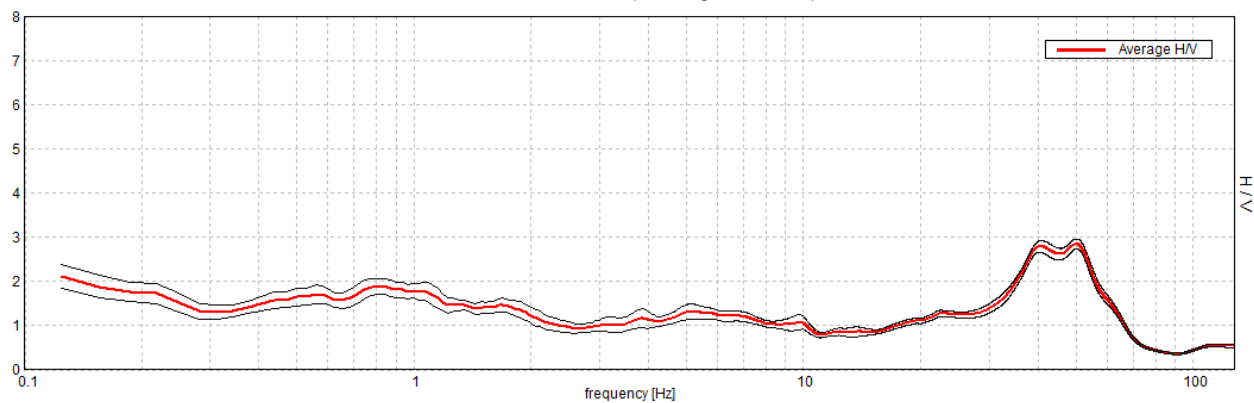
Window size: 20 s

Smoothing type: Triangular window

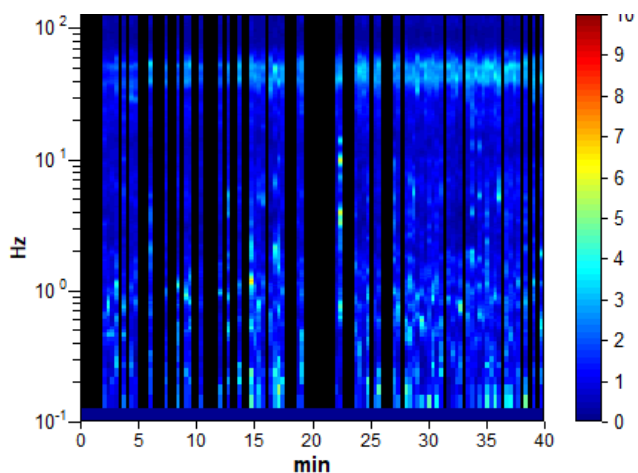
Smoothing: 10%

HORIZONTAL TO VERTICAL SPECTRAL RATIO

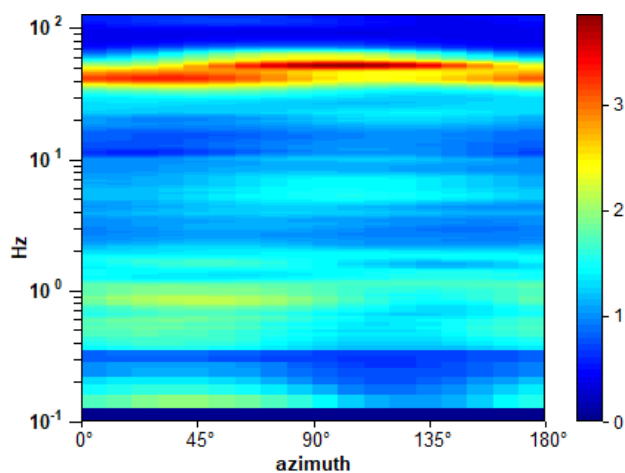
Max. H/V at 0.13 ± 0.39 Hz (in the range 0.0 - 30.0 Hz).



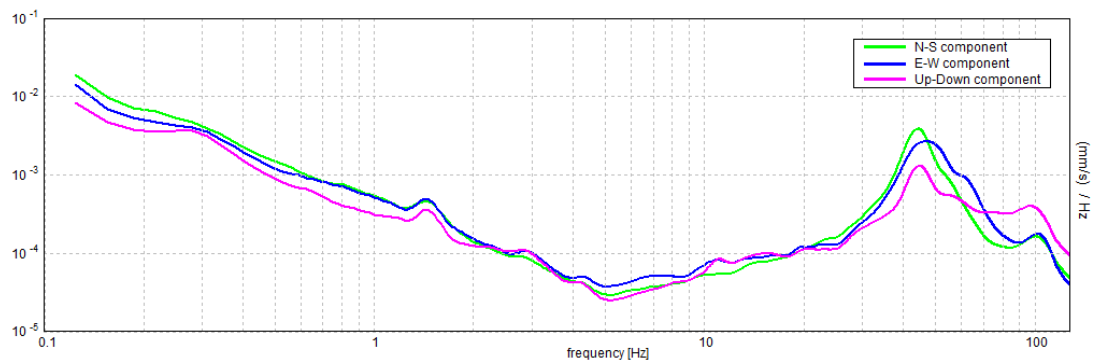
H/V TIME HISTORY



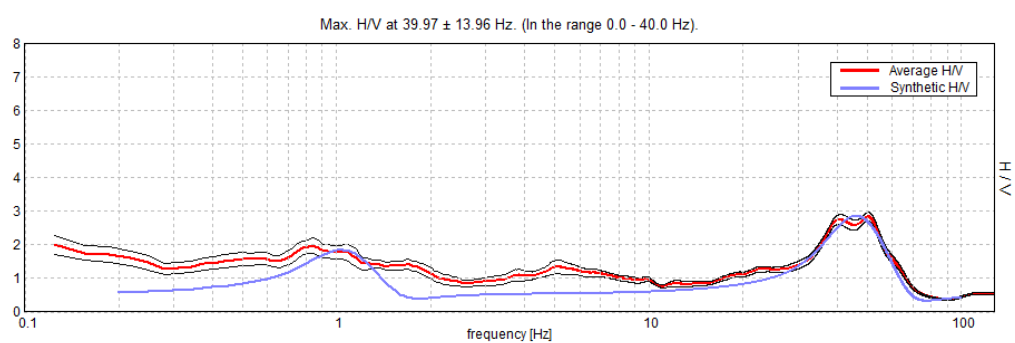
DIRECTIONAL H/V



SINGLE COMPONENT SPECTRA

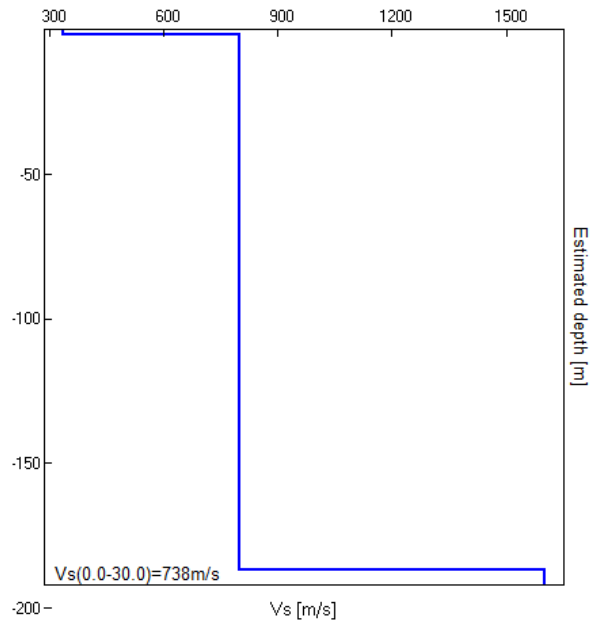


EXPERIMENTAL vs. SYNTHETIC H/V



Depth at the bottom of the layer [m]	Thickness [m]	Vs [m/s]	Poisson ratio
1.85	1.85	338	0.35
186.85	185.00	800	0.35
inf.	inf.	1600	0.35

$Vs(0.0-30.0)=738\text{m/s}$



[According to the SESAME, 2005 guidelines. **Please read carefully the [Grilla](#) manual before interpreting the following tables.**]

Max. H/V at 0.13 ± 0.39 Hz (in the range 0.0 - 30.0 Hz).

Criteria for a reliable H/V curve

[All 3 should be fulfilled]

$f_0 > 10 / L_w$	$0.13 > 0.50$		NO
$n_c(f_0) > 200$	$165.0 > 200$		NO
$\sigma_A(f) < 2$ for $0.5f_0 < f < 2f_0$ if $f_0 > 0.5\text{Hz}$ $\sigma_A(f) < 3$ for $0.5f_0 < f < 2f_0$ if $f_0 < 0.5\text{Hz}$	Exceeded 0 out of 7 times	OK	

Criteria for a clear H/V peak

[At least 5 out of 6 should be fulfilled]

Exists f^- in $[f_0/4, f_0]$ $A_{H/V}(f^-) < A_0 / 2$	0.094 Hz	OK	
Exists f^+ in $[f_0, 4f_0]$ $A_{H/V}(f^+) < A_0 / 2$			NO
$A_0 > 2$	$2.11 > 2$	OK	
$f_{\text{peak}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	$ 3.08082 < 0.05$		NO
$\sigma_f < \varepsilon(f_0)$	$0.3851 < 0.03125$		NO
$\sigma_A(f_0) < \theta(f_0)$	$0.27 < 3.0$	OK	

L_w	window length
n_w	number of windows used in the analysis
$n_c = L_w n_w f_0$	number of significant cycles
f	current frequency
f_0	H/V peak frequency
σ_f	standard deviation of H/V peak frequency
$\varepsilon(f_0)$	threshold value for the stability condition $\sigma_f < \varepsilon(f_0)$
A_0	H/V peak amplitude at frequency f_0
$A_{H/V}(f)$	H/V curve amplitude at frequency f
f^-	frequency between $f_0/4$ and f_0 for which $A_{H/V}(f^-) < A_0/2$
f^+	frequency between f_0 and $4f_0$ for which $A_{H/V}(f^+) < A_0/2$
$\sigma_A(f)$	standard deviation of $A_{H/V}(f)$, $\sigma_A(f)$ is the factor by which the mean $A_{H/V}(f)$ curve should be multiplied or divided
$\sigma_{\log H/V}(f)$	standard deviation of $\log A_{H/V}(f)$ curve
$\theta(f_0)$	threshold value for the stability condition $\sigma_A(f) < \theta(f_0)$

Threshold values for σ_f and $\sigma_A(f_0)$

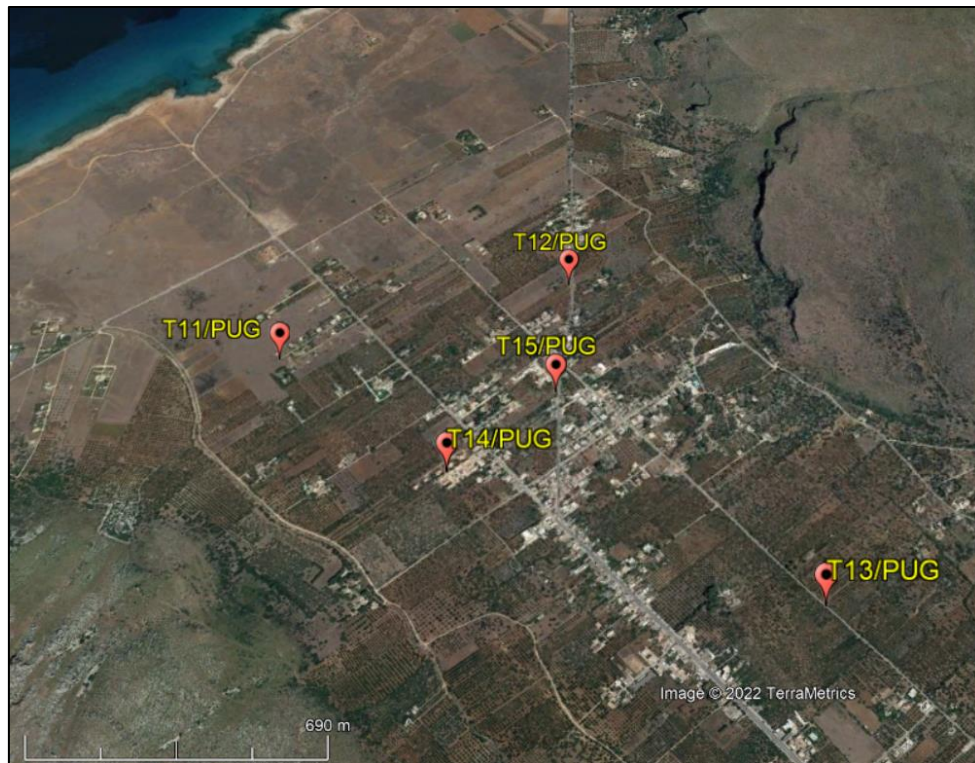
Freq. range [Hz]	< 0.2	0.2 – 0.5	0.5 – 1.0	1.0 – 2.0	> 2.0
$\varepsilon(f_0)$ [Hz]	$0.25 f_0$	$0.2 f_0$	$0.15 f_0$	$0.10 f_0$	$0.05 f_0$
$\theta(f_0)$ for $\sigma_A(f_0)$	3.0	2.5	2.0	1.78	1.58
$\log \theta(f_0)$ for $\sigma_{\log H/V}(f_0)$	0.48	0.40	0.30	0.25	0.20



SAN VITO N1-N7 (T1/PUG-T7/PUG)



MACARI N8-N10 (T8/PUG-T10/PUG)



CASTELLUZZO N11-N15 (T11/PUG-T15/PUG)