



Attuazione dell'articolo 11 della legge 24 giugno 2009, n.77

MICROZONAZIONE SISMICA

ALL. 1 – Indagini integrative

Livello 3

Regione Emilia-Romagna

Comune di Noceto



Regione	Soggetto realizzatore	Data
Emilia-Romagna	 Dott. Geol. Stefano Castagnetti Collaboratori: Dott. Geol. Marco Baldi Dott. Geol. Marco Carretta	Ottobre 2022


INDAGINE MASW1

Località Parco Militi Croce Verde	Comune Noceto (PR)			
Cantiere MS 3° livello comune di Noceto	Data 15/09/2022	Ora 15.00		
Codice lavoro 22_003_CSTG	Committente Dott. Geol. Stefano Castagnetti			
Codice Prova MASW1	File Noceto 1A_STK_SEG2.dat			
Operatore: Dott. Geol. Alessandro Ferrari				

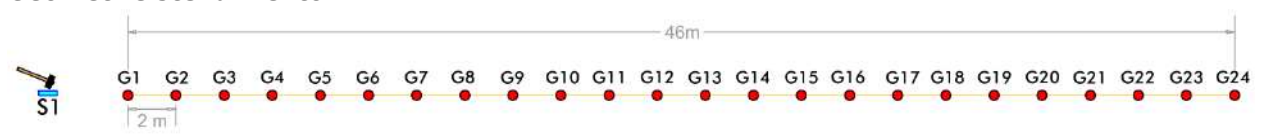
STRUMENTAZIONE

Marca: Sara Electronic Instruments	Modello: Sismografo digitale DoReMi
Marca Geofoni: Geo Space	Orientamento: <input type="checkbox"/> H <input checked="" type="checkbox"/> V Frequenza (Hz): 4.5

SPECIFICHE INDAGINE

	Tipo: MASW	Onde: <input checked="" type="checkbox"/> P <input type="checkbox"/> SH
	N°canali: 24	Lunghezza stendimento (m): 46+5
	Offset minimo (m): 5	N° shot: 5
	Durata registrazioni (sec): 1.0	
	Frequenza di campionamento (Hz): 2000	
	Tipologia energizzazione:	
	<input type="checkbox"/> Fucile sismico	Modello:
	<input checked="" type="checkbox"/> Mazza	Kg: 5
	<input type="checkbox"/> Grave	Kg:
	<input type="checkbox"/> Mazza su trave	Kg:
Stacking: usate 5 acquisizioni su 5: <input checked="" type="checkbox"/> Noceto 1A_0105.drm <input checked="" type="checkbox"/> Noceto 1A_0205.drm <input checked="" type="checkbox"/> Noceto 1A_0305.drm <input checked="" type="checkbox"/> Noceto 1A_0405.drm <input checked="" type="checkbox"/> Noceto 1A_0505.drm		

Geometrie stendimento:



TERRENO INDAGATO

Superficie:	<input checked="" type="checkbox"/> vegetale	<input type="checkbox"/> riporto	<input type="checkbox"/> roccia	<input type="checkbox"/> pavimentazione:
Condizioni terreno:	<input checked="" type="checkbox"/> asciutto	<input type="checkbox"/> bagnato	<input type="checkbox"/> saturo	

OSSERVAZIONI:

Tracce

Numero tracce: 24

Durata acquisizione: 1.0 s

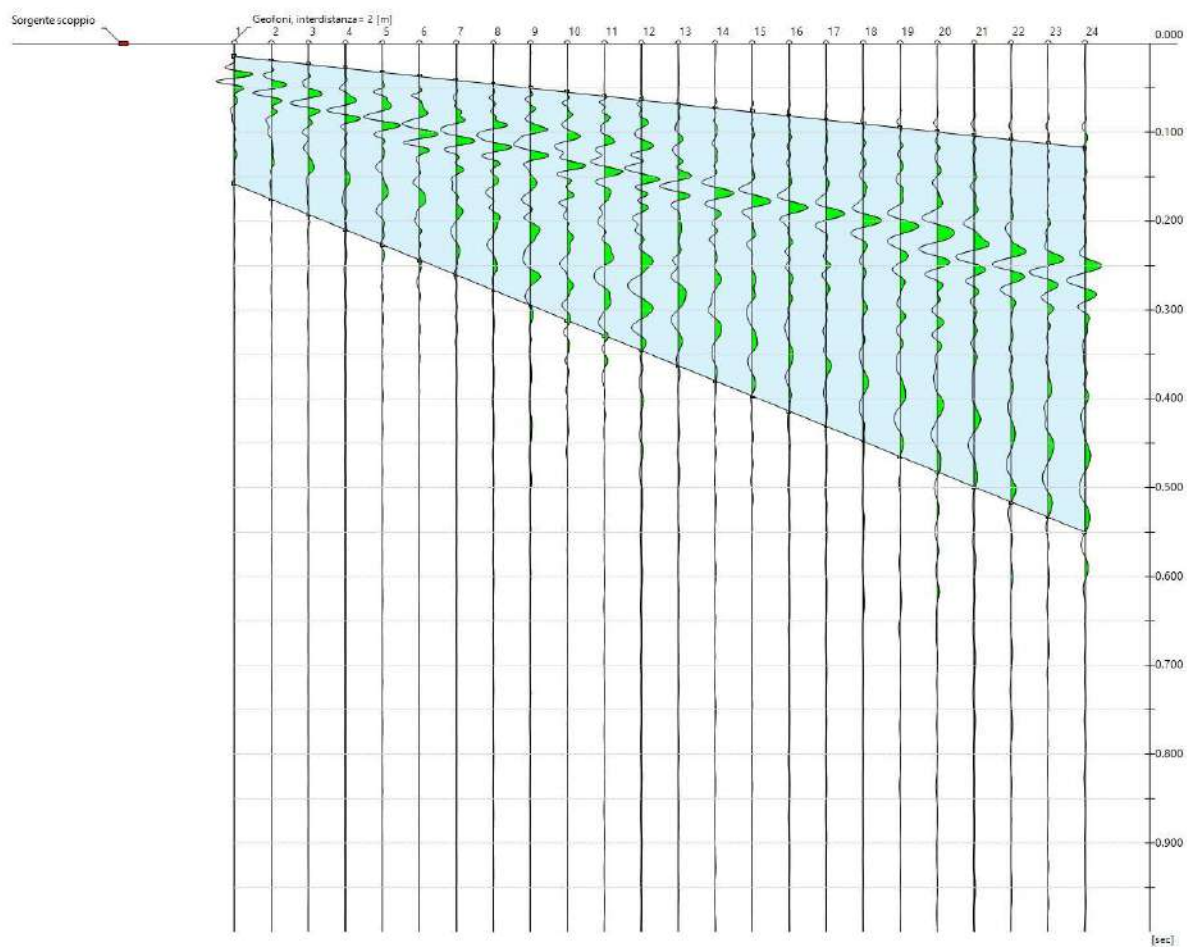
Periodo di campionamento: 0.5 ms

Interdistanza geofoni: 2 m

Distanza sorgente - primo geofono: 5 m

Selezione temporale: selezione manuale

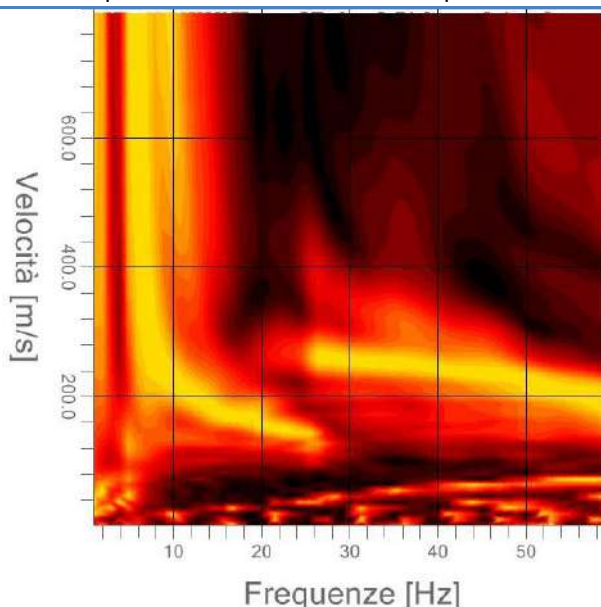
Sismogramma



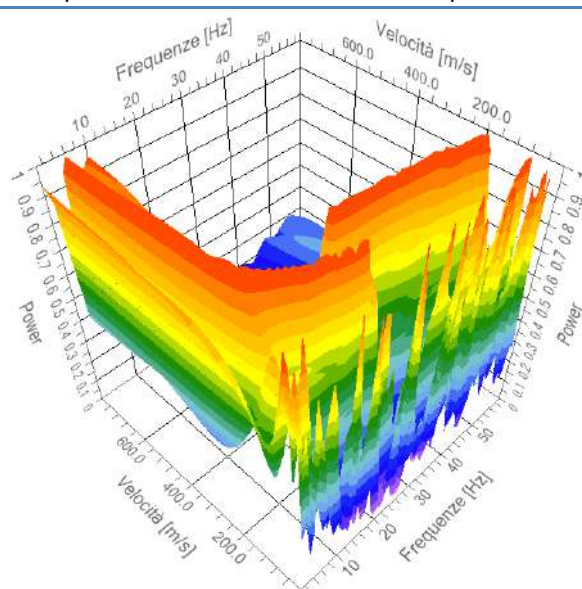
Analisi spettrale

Numero tracce utilizzate: 24
 Frequenza minima di elaborazione: 1 Hz
 Frequenza massima di elaborazione: 60 Hz
 Velocità minima di elaborazione: 1 m/s
 Velocità massima di elaborazione: 800 m/s

Spettro Velocità di fase - Frequenze



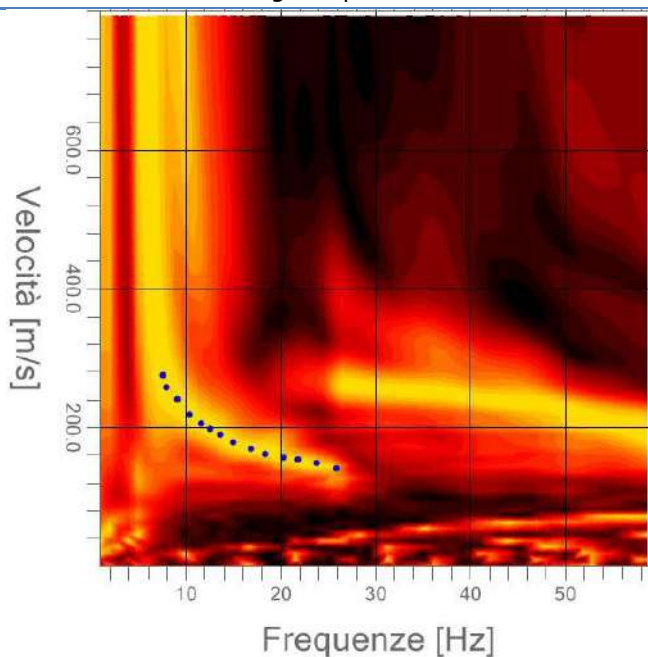
Spettro 3D Velocità di fase - Frequenze



Curva di dispersione

N° punti di picking: 14

Picking su spettro F-V



Modi vibrazionali identificati

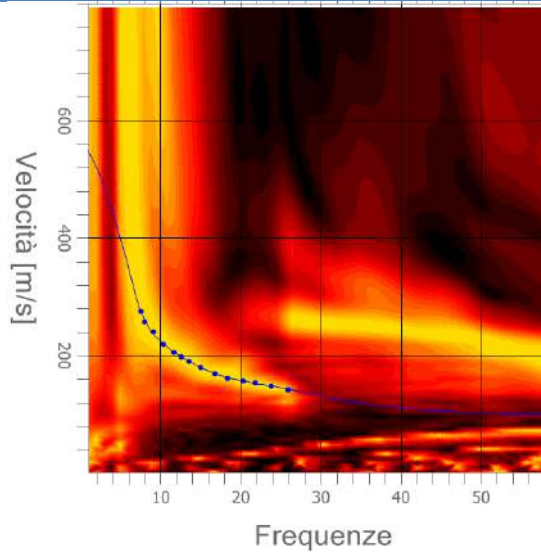
- | | | | | |
|---|--|--|--|--|
| <input checked="" type="checkbox"/> Modo fondamentale | <input type="checkbox"/> 1° modo superiore | <input type="checkbox"/> 2° modo superiore | <input type="checkbox"/> 3° modo superiore | <input type="checkbox"/> 4° modo superiore |
|---|--|--|--|--|

Inversione:

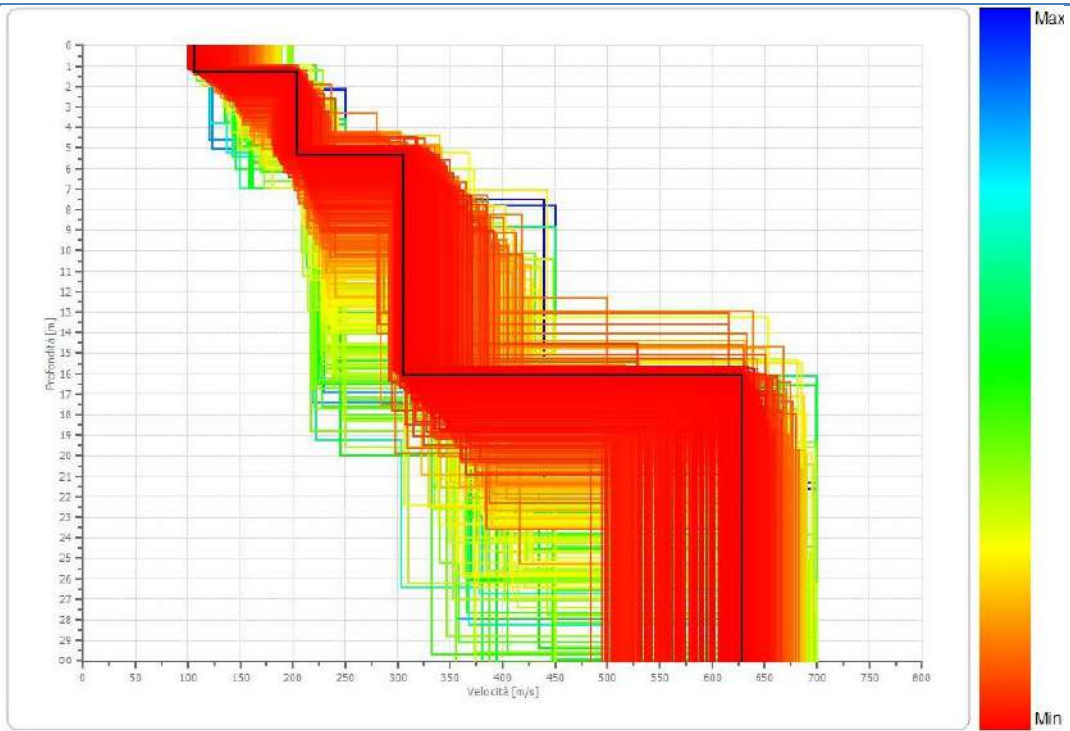
Fattore di disadattamento della soluzione (misfit): 0.007

Percentuale di errore: 0.006%

Modello sintetico su picking



Profili di Vs considerati



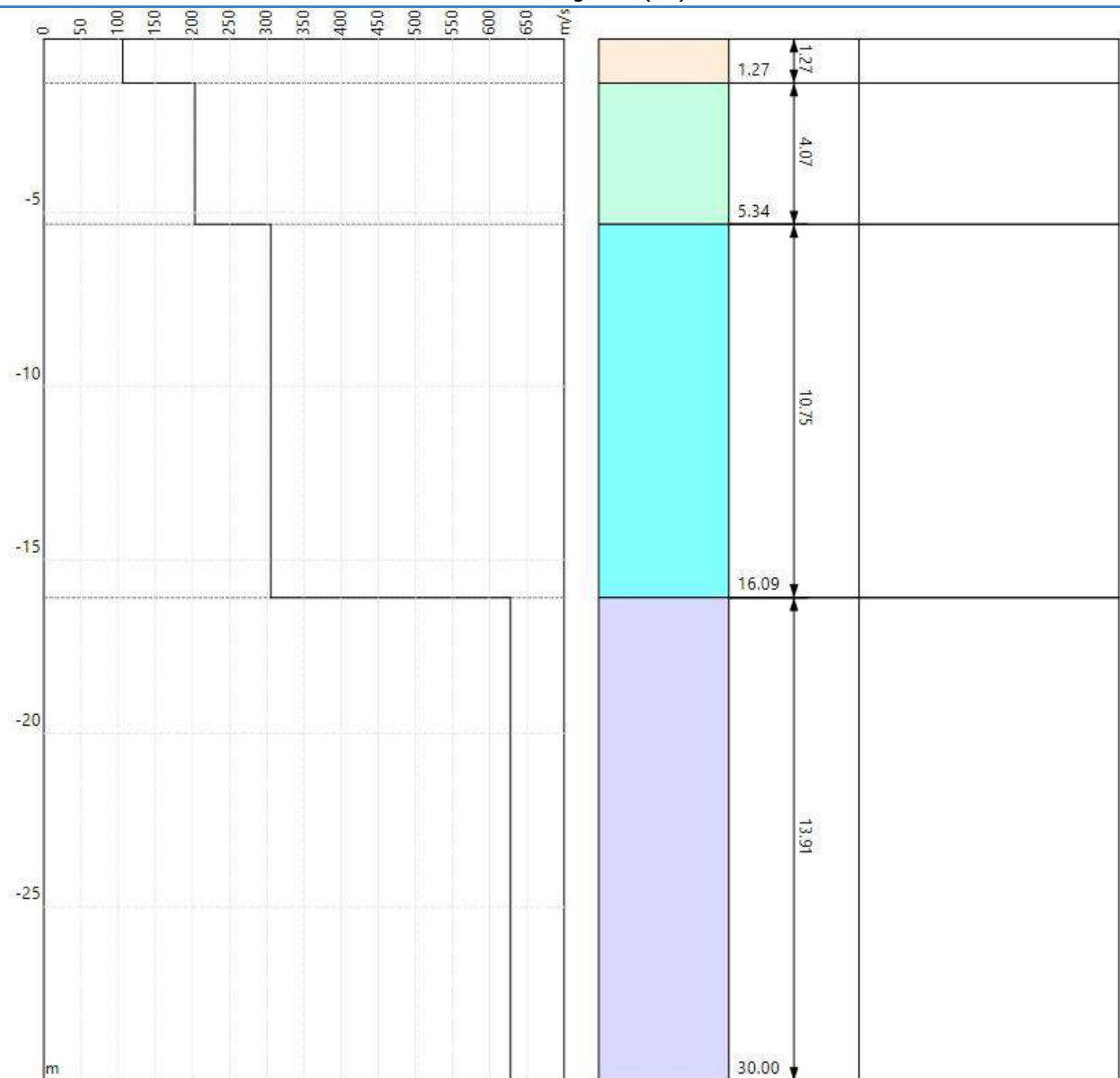
Modello sismostratigrafico:

N° di strati: 4

Strato	Profondità [m]	Spessore [m]	Velocità onde di taglio [m/s]
1	1.27	1.27	106.3
2	5.34	4.07	203.4
3	16.09	10.75	305.4
4	∞	∞	627.9

Valore V_{s30} : 335.8 m/s

Sismostratigrafia (Vs)




INDAGINE MASW2

Località Via Centolance	Comune Noceto (PR)			
Cantiere MS 3° livello comune di Noceto	Data 15/09/2022	Ora 15.40		
Codice lavoro 22_003_CSTG	Committente Dott. Geol. Stefano Castagnetti			
Codice Prova MASW2	File Noceto 2A_STK_SEG2.dat			
Operatore: Dott. Geol. Alessandro Ferrari				

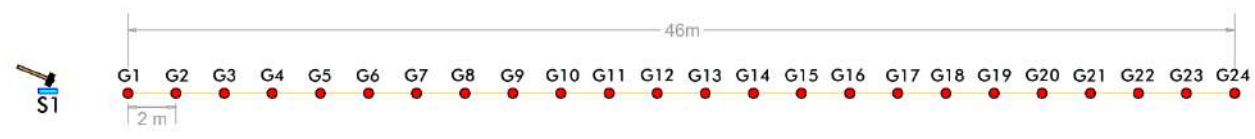
STRUMENTAZIONE

Marca: Sara Electronic Instruments	Modello: Sismografo digitale DoReMi
Marca Geofoni: Geo Space	Orientamento: <input type="checkbox"/> H <input checked="" type="checkbox"/> V Frequenza (Hz): 4.5

SPECIFICHE INDAGINE

	Tipo: MASW	Onde: <input checked="" type="checkbox"/> P <input type="checkbox"/> SH
	N° canali: 24	Lunghezza stendimento (m): 46+5
	Offset minimo (m): 5	N° shot: 5
	Durata registrazioni (sec): 1.0	
	Frequenza di campionamento (Hz): 2000	
	Tipologia energizzazione:	
	<input type="checkbox"/> Fucile sismico	Modello:
	<input checked="" type="checkbox"/> Mazza	Kg: 5
	<input type="checkbox"/> Grave	Kg:
	<input type="checkbox"/> Mazza su trave	Kg:
Stacking: usate 5 acquisizioni su 5: <input checked="" type="checkbox"/> Noceto 2A _0105.drm <input checked="" type="checkbox"/> Noceto 2A _0205.drm <input checked="" type="checkbox"/> Noceto 2A _0305.drm <input checked="" type="checkbox"/> Noceto 2A _0405.drm <input checked="" type="checkbox"/> Noceto 2A _0505.drm		

Geometrie stendimento:



TERRENO INDAGATO

Superficie:	<input checked="" type="checkbox"/> vegetale	<input type="checkbox"/> riporto	<input type="checkbox"/> roccia	<input type="checkbox"/> pavimentazione:
Condizioni terreno:	<input checked="" type="checkbox"/> asciutto	<input type="checkbox"/> bagnato	<input type="checkbox"/> saturo	

OSSERVAZIONI: traffico moderato

Tracce

Numero tracce: 24

Durata acquisizione: 1.0 s

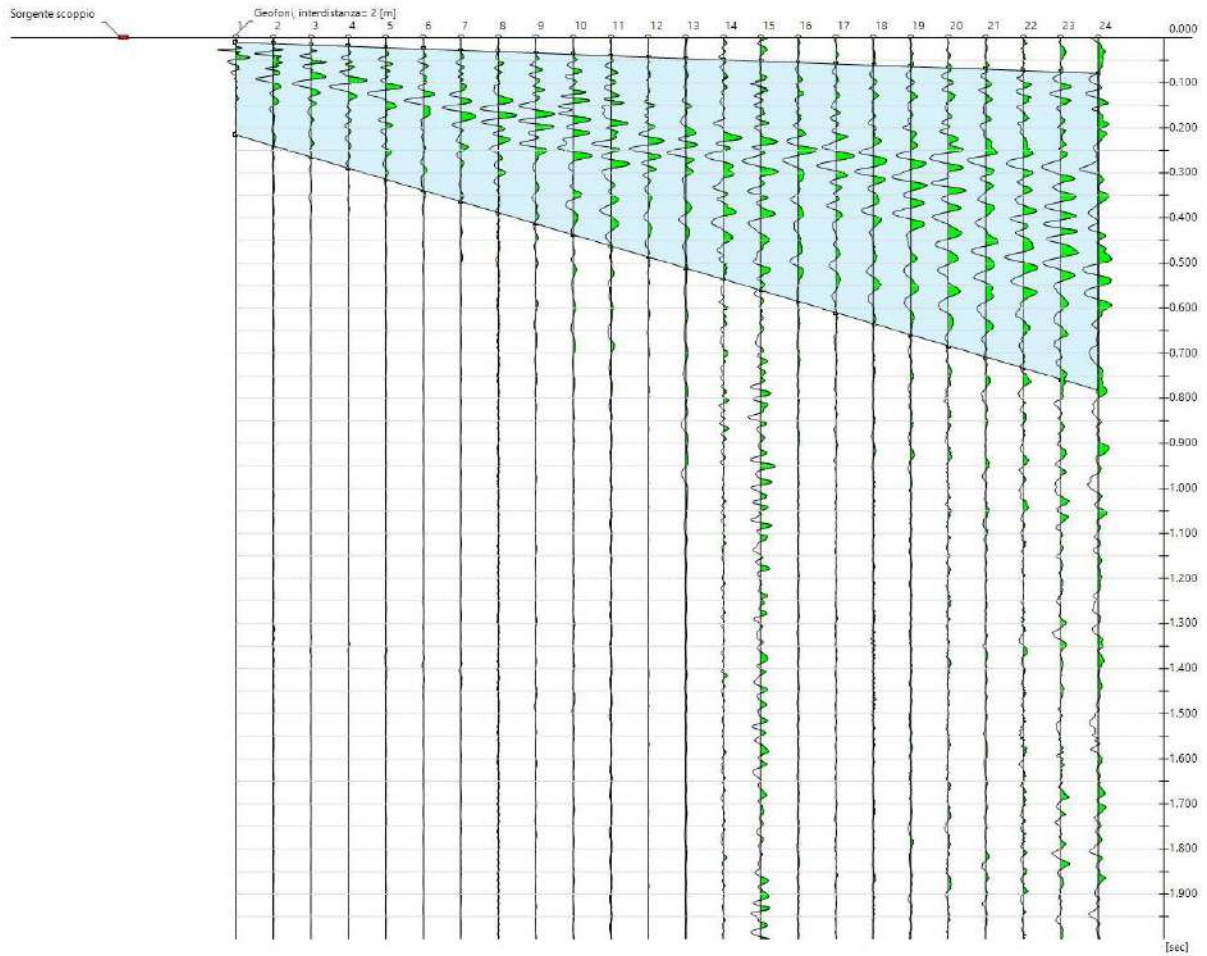
Periodo di campionamento: 0.5 ms

Interdistanza geofoni: 2 m

Distanza sorgente - primo geofono: 5 m

Selezione temporale: selezione manuale

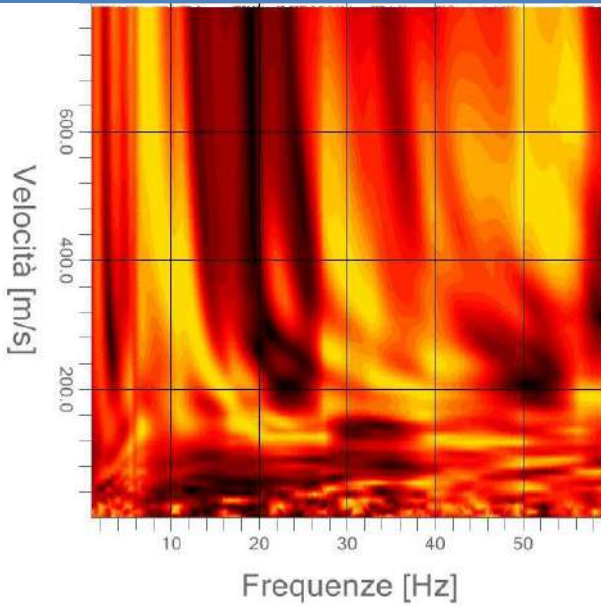
Sismogramma



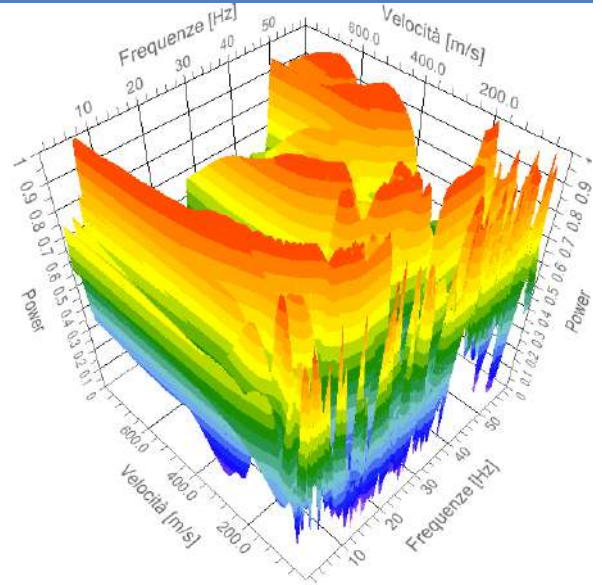
Analisi spettrale

Numero tracce utilizzate: 24
Frequenza minima di elaborazione: 1 Hz
Frequenza massima di elaborazione: 60 Hz
Velocità minima di elaborazione: 1 m/s
Velocità massima di elaborazione: 800 m/s

Spettro Velocità di fase - Frequenze



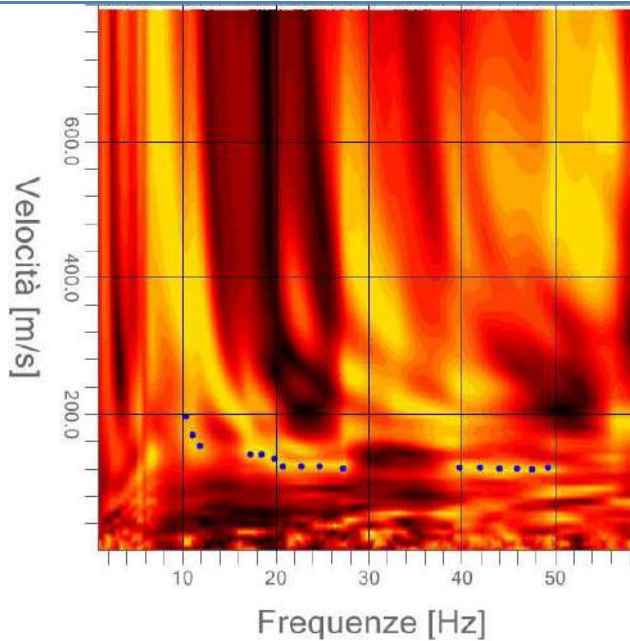
Spettro 3D Velocità di fase - Frequenze



Curva di dispersione

N° punti di picking: 16

Picking su spettro F-V



Modi vibrazionali identificati

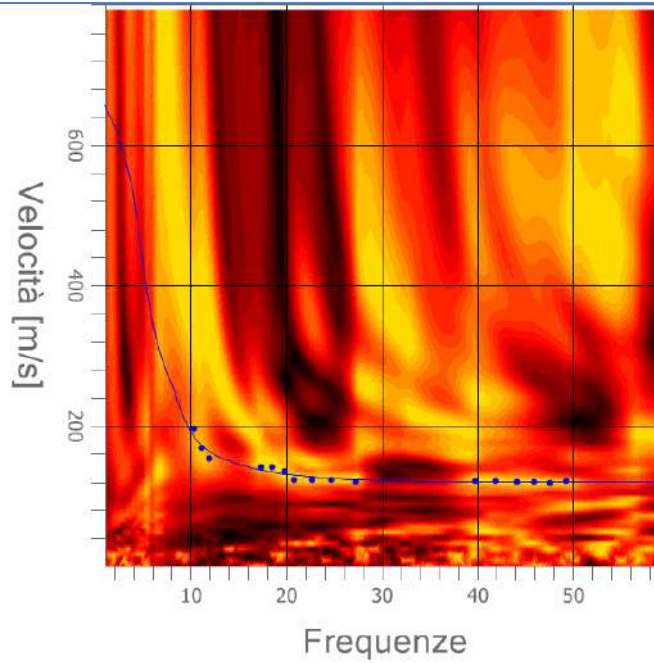
- | | | | | |
|---|--|--|--|--|
| <input checked="" type="checkbox"/> Modo fondamentale | <input type="checkbox"/> 1° modo superiore | <input type="checkbox"/> 2° modo superiore | <input type="checkbox"/> 3° modo superiore | <input type="checkbox"/> 4° modo superiore |
|---|--|--|--|--|

Inversione:

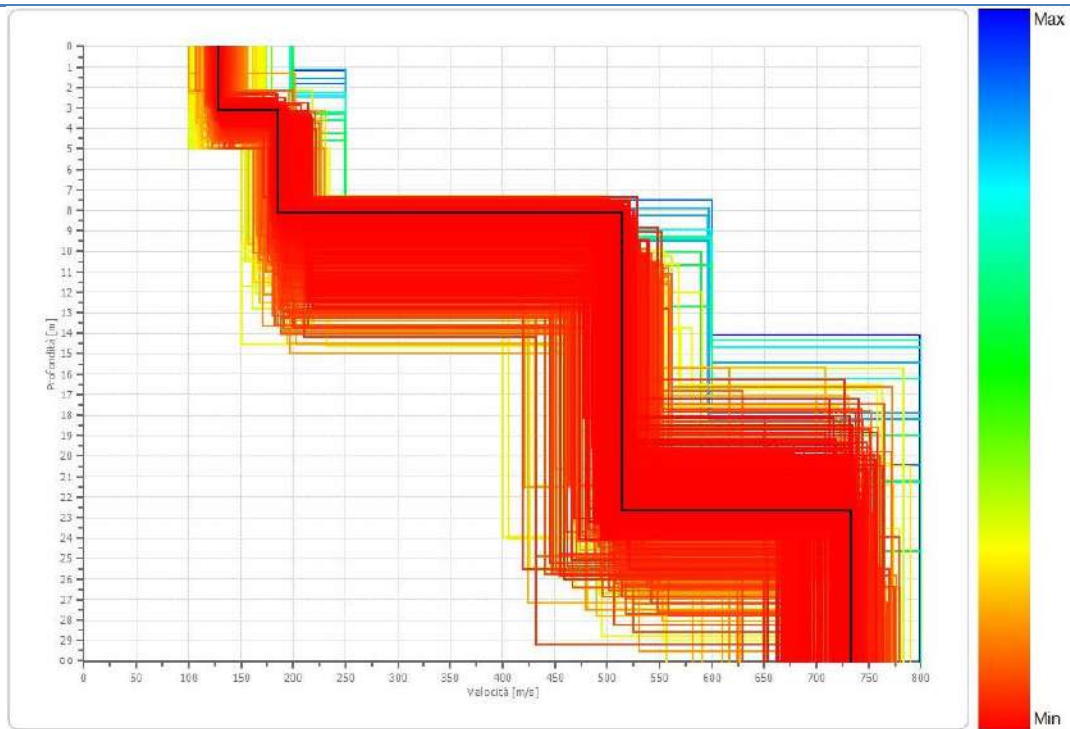
Fattore di disadattamento della soluzione (misfit): 0.033

Percentuale di errore: 0.140%

Modello sintetico su picking



Profili di Vs considerati



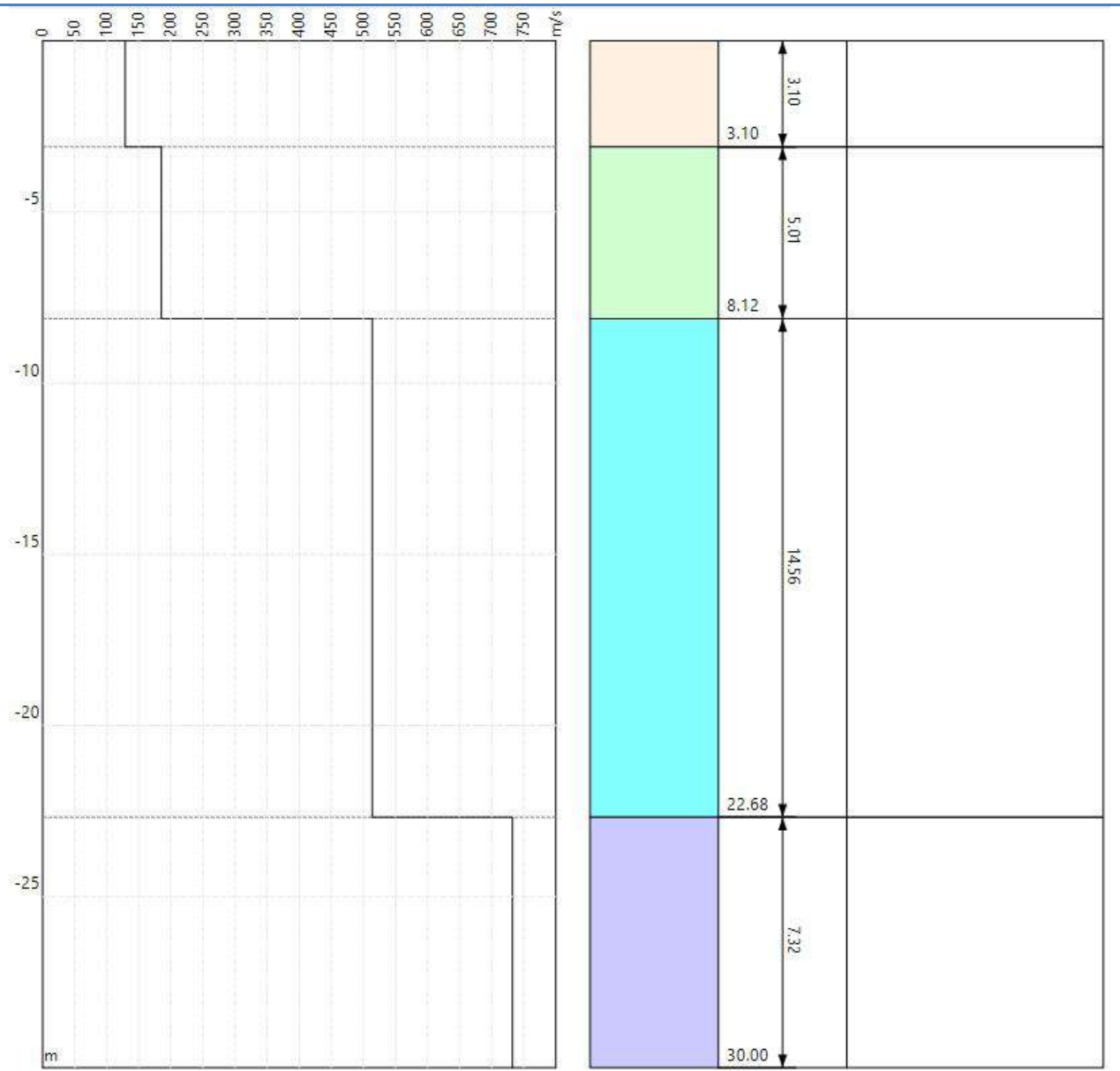
Modello sismostratigrafico:

N° di strati: 4

Strato	Profondità [m]	Spessore [m]	Velocità onde di taglio [m/s]
1	3.10	3.76	128.6
2	8.12	5.70	185.0
3	22.68	5.14	513.7
4	∞	∞	732.3

Valore V_{s30} : 334.9 m/s

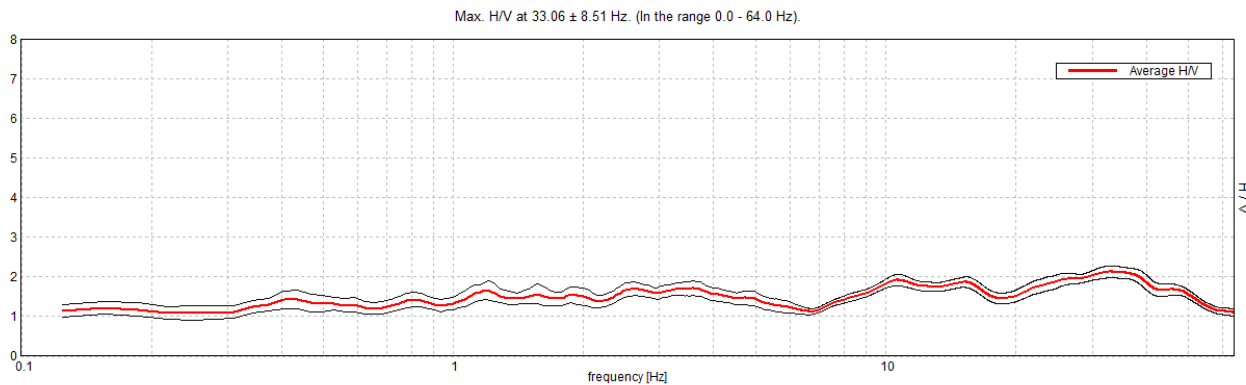
Sismostratigrafia (Vs)



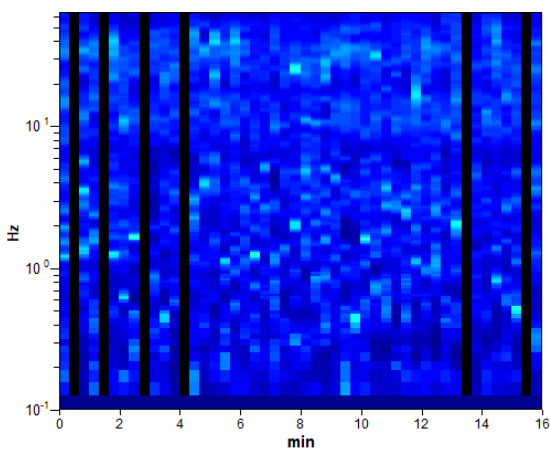
MS3 NOCETO, CELLA

Instrument: TRZ-0189/01-12
 Data format: 16 byte Full scale [mV]: 51
 Start recording: 19/09/22 08:15:58 End recording: 19/09/22 08:31:58
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN
 Trace length: 0h16'00". Analyzed 88% trace (manual window selection)
 Sampling rate: 128 Hz Window size: 20 s
 Smoothing type: Triangular window Smoothing: 10%

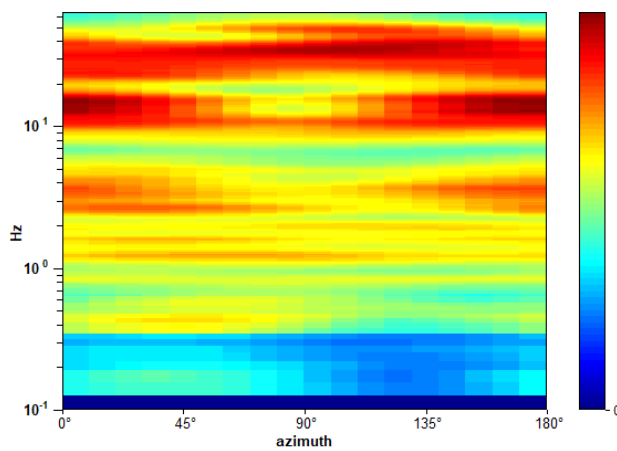
HORIZONTAL TO VERTICAL SPECTRAL RATIO



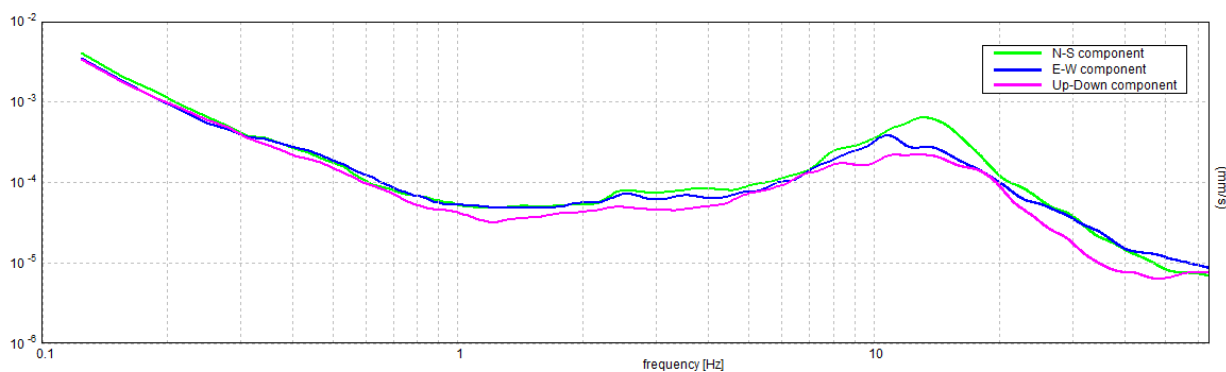
H/V TIME HISTORY



DIRECTIONAL H/V



SINGLE COMPONENT SPECTRA



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

Max. H/V at 33.06 ± 8.51 Hz (in the range 0.0 - 64.0 Hz).

Criteria for a reliable H/V curve

[All 3 should be fulfilled]

$f_0 > 10 / L_w$	$33.06 > 0.50$	OK	
$n_c(f_0) > 200$	$27772.5 > 200$	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 1520 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
$A_0 > 2$	$2.13 > 2$	OK	
$f_{\text{peak}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	$ 0.2573 < 0.05$		NO
$\sigma_f < \varepsilon(f_0)$	$8.50699 < 1.65313$		NO
$\sigma_A(f_0) < \theta(f_0)$	$0.1516 < 1.58$	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 $\sigma_A(f) < \theta(f_0)$

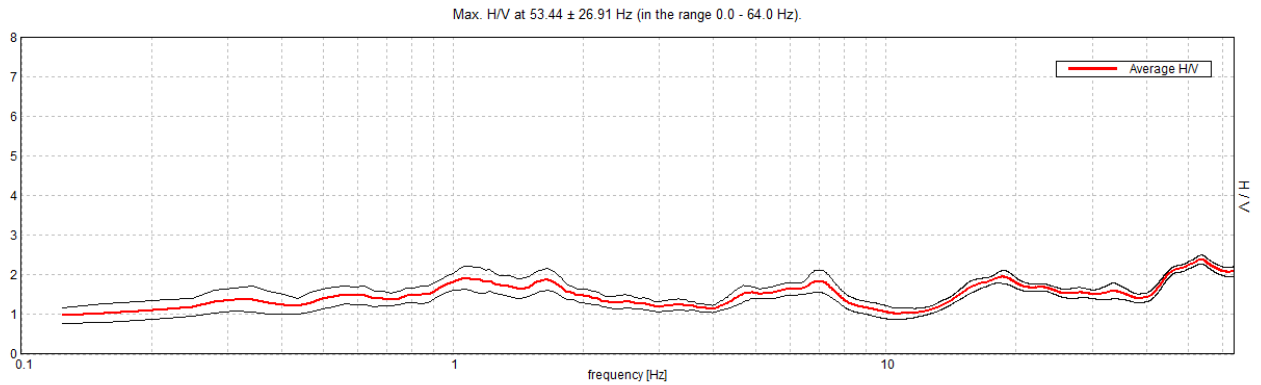
Threshold values for σ_f and $\sigma_A(f_0)$

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

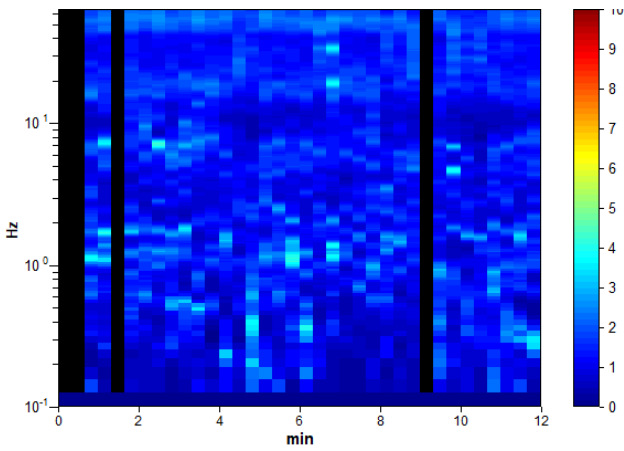
MS3 NOCETO, COSTAMEZZANA NORD

Instrument: TRZ-0189/01-12
 Data format: 16 byte Full scale [mV]: 51
 Start recording: 19/09/22 08:50:59 End recording: 19/09/22 09:02:59
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN
 Trace length: 0h12'00". Analyzed 89% trace (manual window selection)
 Sampling rate: 128 Hz Window size: 20 s
 Smoothing type: Triangular window Smoothing: 10%

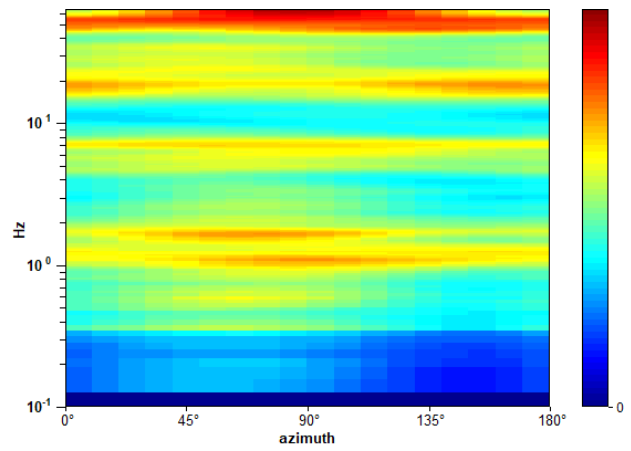
HORIZONTAL TO VERTICAL SPECTRAL RATIO



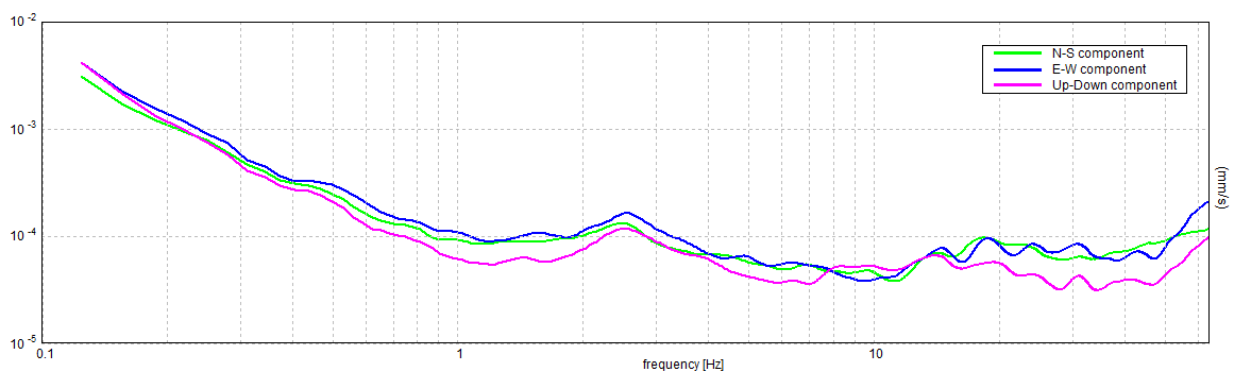
H/V TIME HISTORY



DIRECTIONAL H/V



SINGLE COMPONENT SPECTRA



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

Max. H/V at 53.44 ± 26.91 Hz (in the range 0.0 - 64.0 Hz).

Criteria for a reliable H/V curve

[All 3 should be fulfilled]

$f_0 > 10 / L_w$	53.44 > 0.50	OK	
$n_c(f_0) > 200$	34200.0 > 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 1194 times	OK	

Criteria for a clear H/V peak

[At least 5 out of 6 should be fulfilled]

Exists f^- in $[f_0/4, f_0] \mid A_{H/V}(f^-) < A_0 / 2$			NO
Exists f^+ in $[f_0, 4f_0] \mid A_{H/V}(f^+) < A_0 / 2$			NO
$A_0 > 2$	2.39 > 2	OK	
$f_{\text{peak}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	$ 0.5035 < 0.05$		NO
$\sigma_f < \varepsilon(f_0)$	26.9059 < 2.67188		NO
$\sigma_A(f_0) < \theta(f_0)$	0.1077 < 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 $\sigma_A(f) < \theta(f_0)$

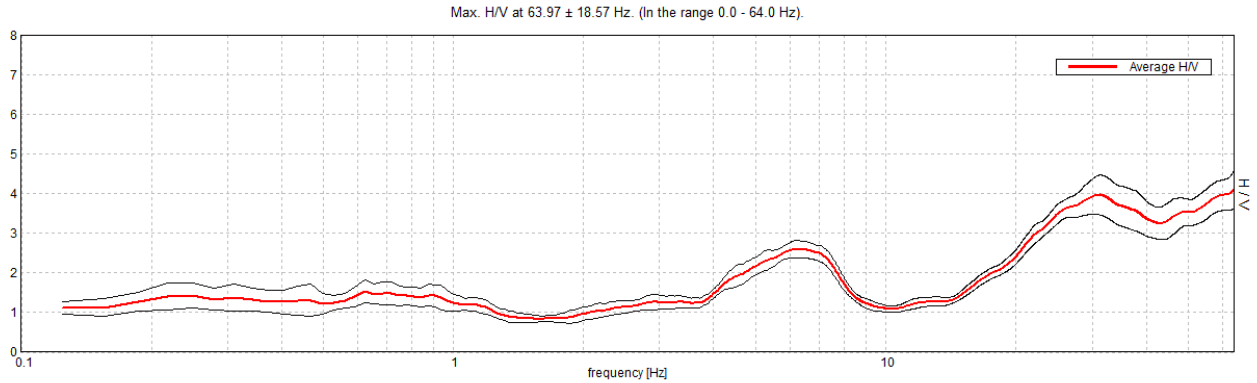
Threshold values for σ_f and $\sigma_A(f_0)$

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

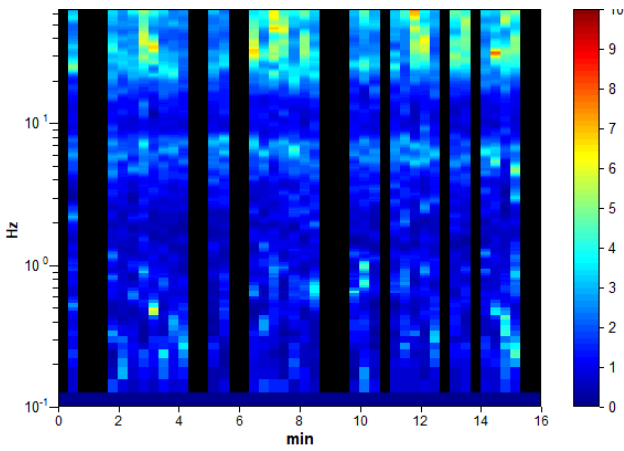
MS3 NOCETO, Via Maestà

Instrument: TRZ-0189/01-12
 Data format: 16 byte Full scale [mV]: 51
 Start recording: 01/01/00 00:03:07 End recording: 01/01/00 00:19:07
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN
 Trace length: 0h16'00". Analyzed 67% trace (manual window selection)
 Sampling rate: 128 Hz Window size: 20 s
 Smoothing type: Triangular window Smoothing: 10%

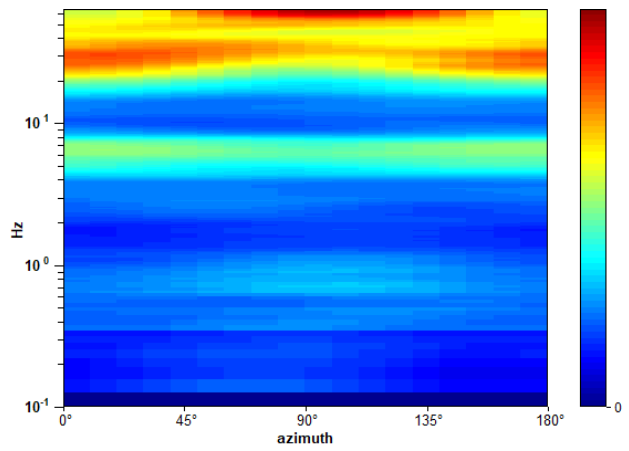
HORIZONTAL TO VERTICAL SPECTRAL RATIO



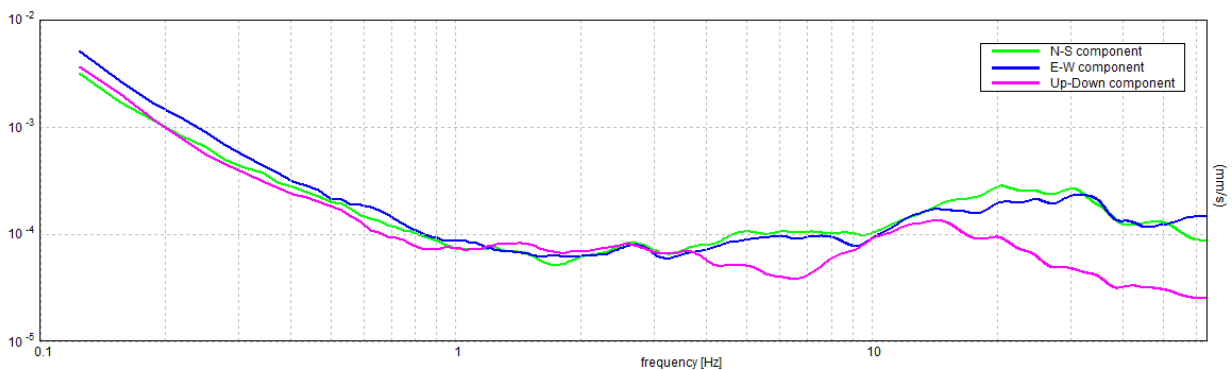
H/V TIME HISTORY



DIRECTIONAL H/V



SINGLE COMPONENT SPECTRA



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

Max. H/V at 63.97 ± 18.57 Hz (in the range 0.0 - 64.0 Hz).

Criteria for a reliable H/V curve

[All 3 should be fulfilled]

$f_0 > 10 / L_w$	63.97 > 0.50	OK	
$n_c(f_0) > 200$	40940.0 > 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 1026 times	OK	

Criteria for a clear H/V peak

[At least 5 out of 6 should be fulfilled]

Exists f^- in $[f_0/4, f_0] \mid A_{H/V}(f^-) < A_0 / 2$	18.188 Hz	OK	
Exists f^+ in $[f_0, 4f_0] \mid A_{H/V}(f^+) < A_0 / 2$			NO
$A_0 > 2$	4.12 > 2	OK	
$f_{\text{peak}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	$ 0.29026 < 0.05$		NO
$\sigma_f < \varepsilon(f_0)$	18.56762 < 3.19844		NO
$\sigma_A(f_0) < \theta(f_0)$	0.5021 < 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 $\sigma_A(f_0)$

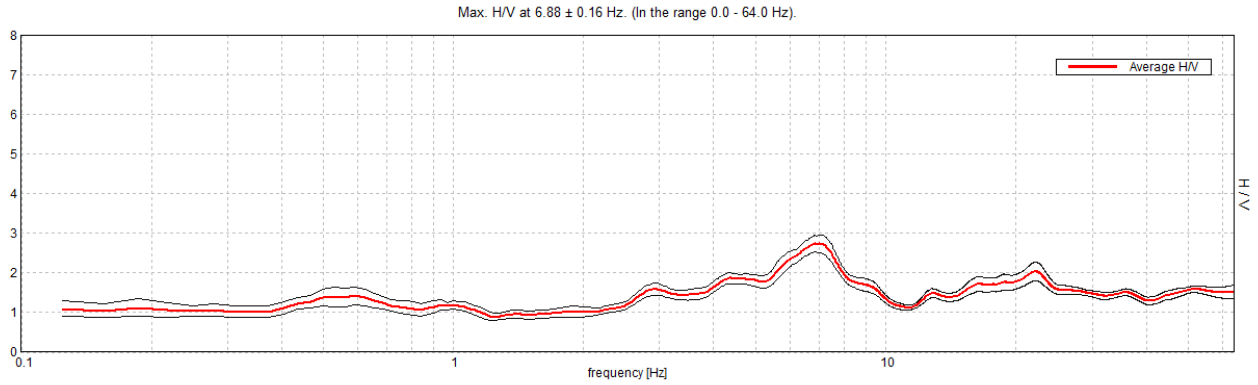
Freq. range [Hz]	< 0.2	0.2 – 0.5	0.5 – 1.0	1.0 – 2.0	> 2.0
$\varepsilon(f_0)$ [Hz]	0.25 f_0	0.2 f_0	0.15 f_0	0.10 f_0	0.05 f_0
$\theta(f_0)$ for $\sigma_A(f_0)$	3.0	2.5	2.0	1.78	1.58
$\log \theta(f_0)$ for $\sigma_{\log H/V}(f_0)$	0.48	0.40	0.30	0.25	0.20

MS3 NOCETO, via S. Lazzaro

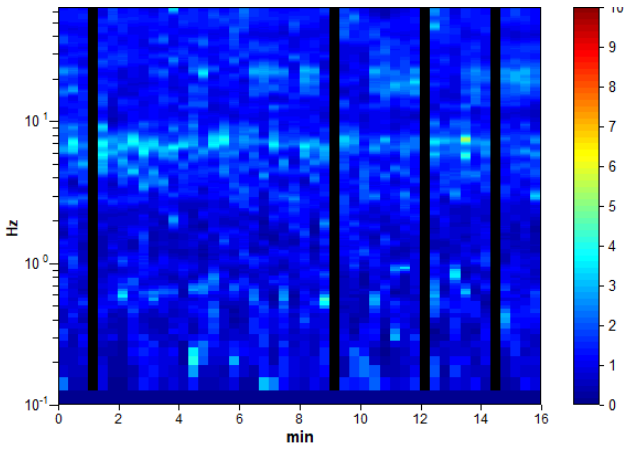
Instrument: TRZ-0189/01-12
Data format: 16 byte
Start recording: 01/01/00 00:30:09
Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN
Trace length: 0h16'00". Analyzed 92% trace (manual window selection)
Sampling rate: 128 Hz
Smoothing type: Triangular window

Full scale [mV]: 51
End recording: 01/01/00 00:46:09
Window size: 20 s
Smoothing: 10%

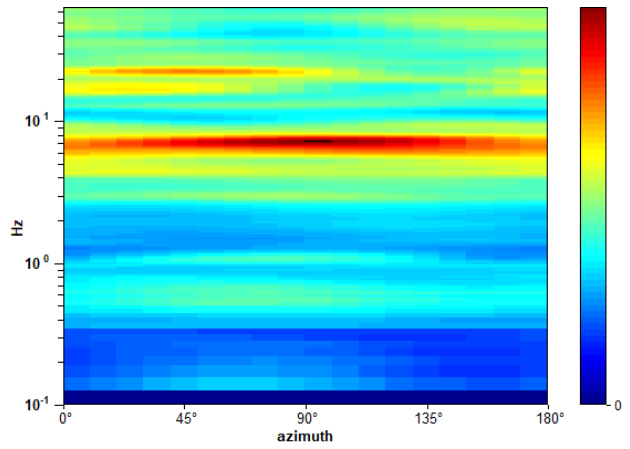
HORIZONTAL TO VERTICAL SPECTRAL RATIO



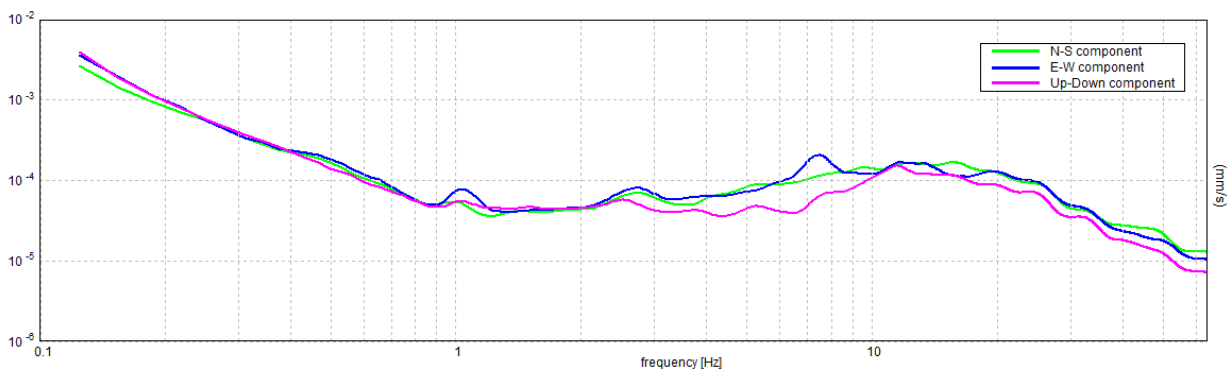
H/V TIME HISTORY



DIRECTIONAL H/V



SINGLE COMPONENT SPECTRA



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

Max. H/V at 6.88 ± 0.16 Hz (in the range 0.0 - 64.0 Hz).

Criteria for a reliable H/V curve

[All 3 should be fulfilled]

$f_0 > 10 / L_w$	6.88 > 0.50	OK	
$n_c(f_0) > 200$	6050.0 > 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 331 times	OK	

Criteria for a clear H/V peak

[At least 5 out of 6 should be fulfilled]

Exists f^- in $[f_0/4, f_0] \mid A_{H/V}(f^-) < A_0 / 2$	2.656 Hz	OK	
Exists f^+ in $[f_0, 4f_0] \mid A_{H/V}(f^+) < A_0 / 2$	9.938 Hz	OK	
$A_0 > 2$	2.73 > 2	OK	
$f_{\text{peak}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	$ 0.02371 < 0.05$	OK	
$\sigma_f < \varepsilon(f_0)$	0.16299 < 0.34375	OK	
$\sigma_A(f_0) < \theta(f_0)$	0.2094 < 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 $\sigma_A(f) < \theta(f_0)$

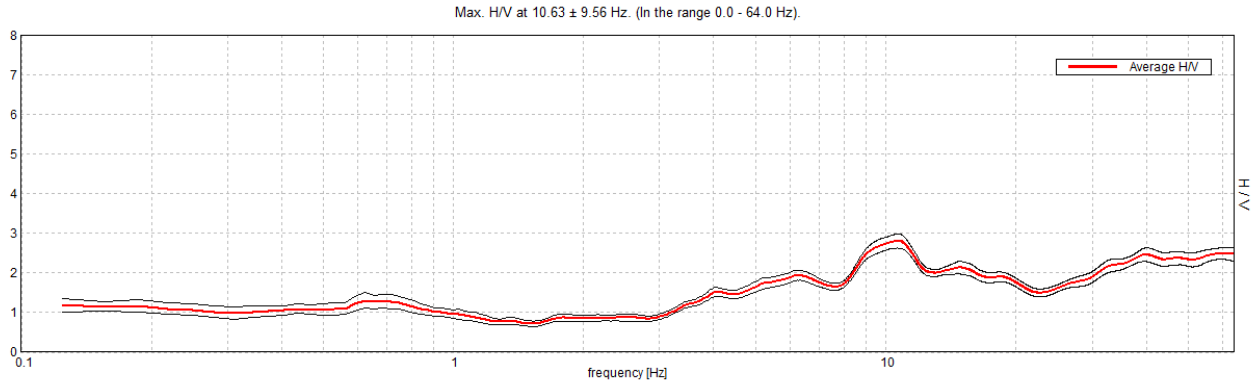
Threshold values for σ_f and $\sigma_A(f_0)$

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

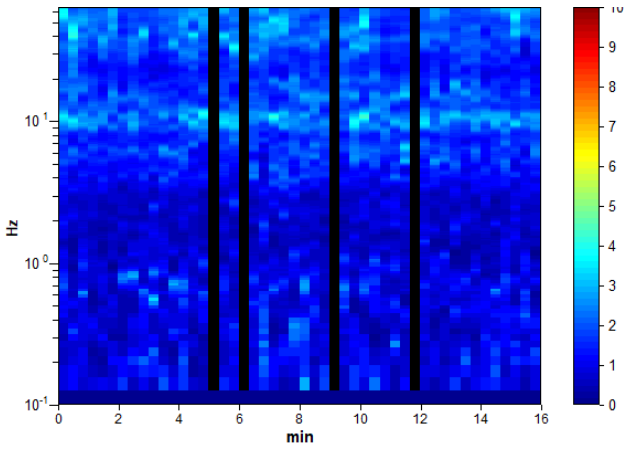
MS3 NOCETO, Parco Zanfurlina

Instrument: TRZ-0189/01-12
 Data format: 16 byte Full scale [mV]: 51
 Start recording: 01/01/00 00:59:31 End recording: 01/01/00 01:15:31
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN
 Trace length: 0h16'00". Analyzed 92% trace (manual window selection)
 Sampling rate: 128 Hz Window size: 20 s
 Smoothing type: Triangular window Smoothing: 10%

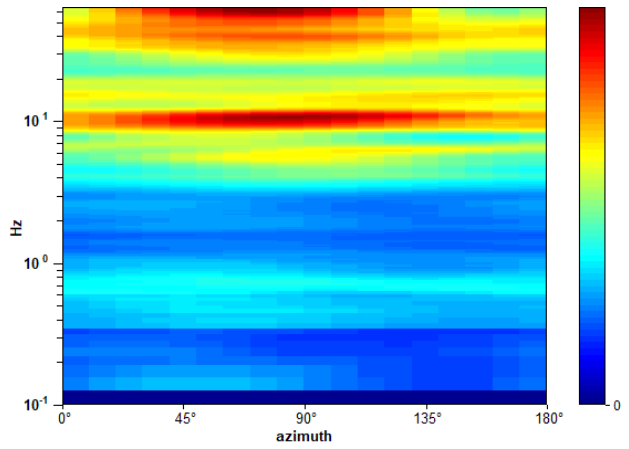
HORIZONTAL TO VERTICAL SPECTRAL RATIO



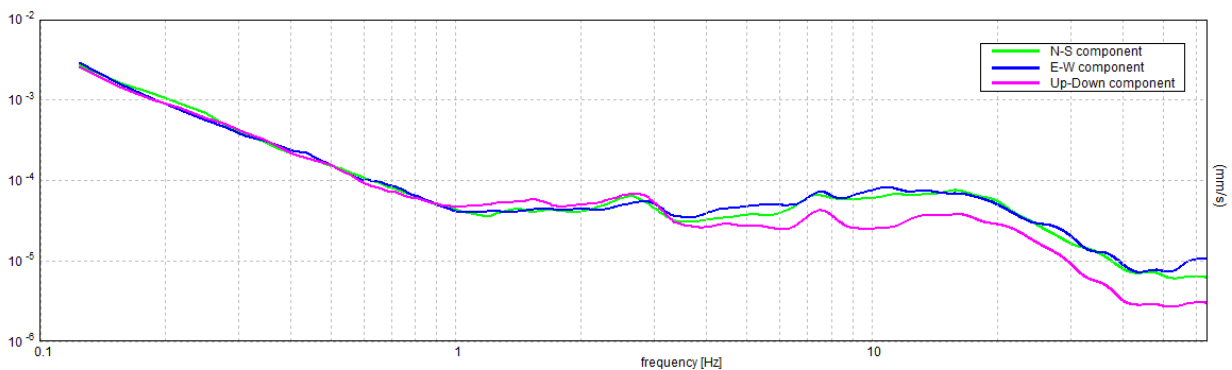
H/V TIME HISTORY



DIRECTIONAL H/V



SINGLE COMPONENT SPECTRA



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

Max. H/V at 10.63 ± 9.56 Hz (in the range 0.0 - 64.0 Hz).

Criteria for a reliable H/V curve

[All 3 should be fulfilled]

$f_0 > 10 / L_w$	10.63 > 0.50	OK	
$n_c(f_0) > 200$	9350.0 > 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 511 times	OK	

Criteria for a clear H/V peak

[At least 5 out of 6 should be fulfilled]

Exists f^- in $[f_0/4, f_0] \mid A_{H/V}(f^-) < A_0 / 2$	3.844 Hz	OK	
Exists f^+ in $[f_0, 4f_0] \mid A_{H/V}(f^+) < A_0 / 2$			NO
$A_0 > 2$	2.80 > 2	OK	
$f_{\text{peak}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	$ 0.89953 < 0.05$		NO
$\sigma_f < \varepsilon(f_0)$	9.55754 < 0.53125		NO
$\sigma_A(f_0) < \theta(f_0)$	0.1794 < 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 $\sigma_A(f) < \theta(f_0)$

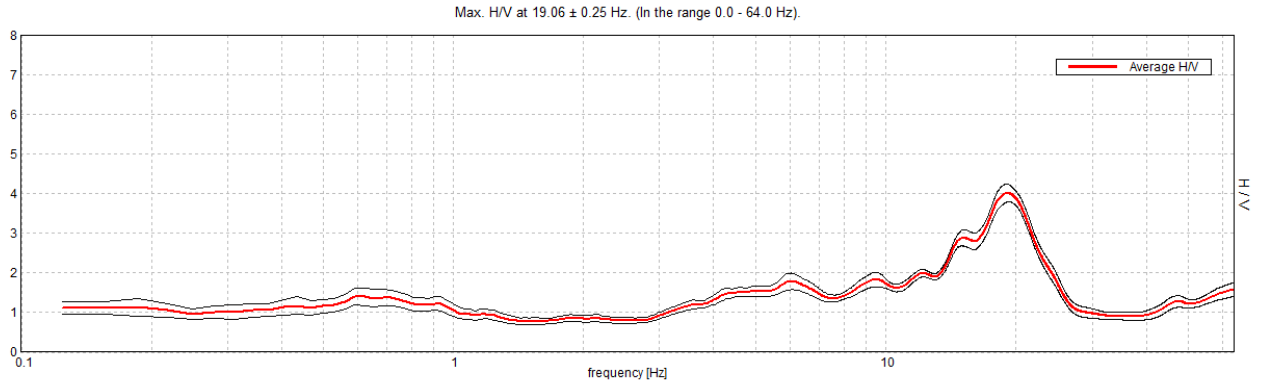
Threshold values for σ_f and $\sigma_A(f_0)$

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

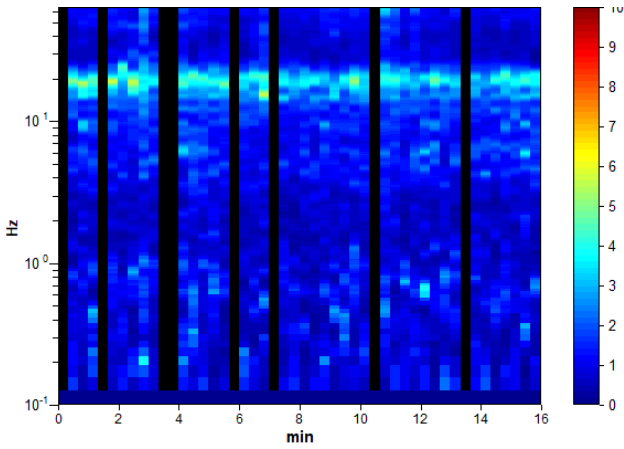
MS3 NOCETO,

Instrument: TRZ-0189/01-12
 Data format: 16 byte Full scale [mV]: 51
 Start recording: 01/01/00 01:26:58 End recording: 01/01/00 01:42:58
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN
 Trace length: 0h16'00". Analyzed 83% trace (manual window selection)
 Sampling rate: 128 Hz Window size: 20 s
 Smoothing type: Triangular window Smoothing: 10%

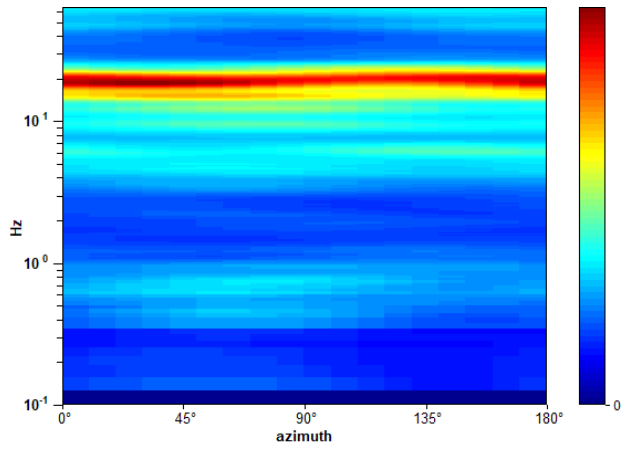
HORIZONTAL TO VERTICAL SPECTRAL RATIO



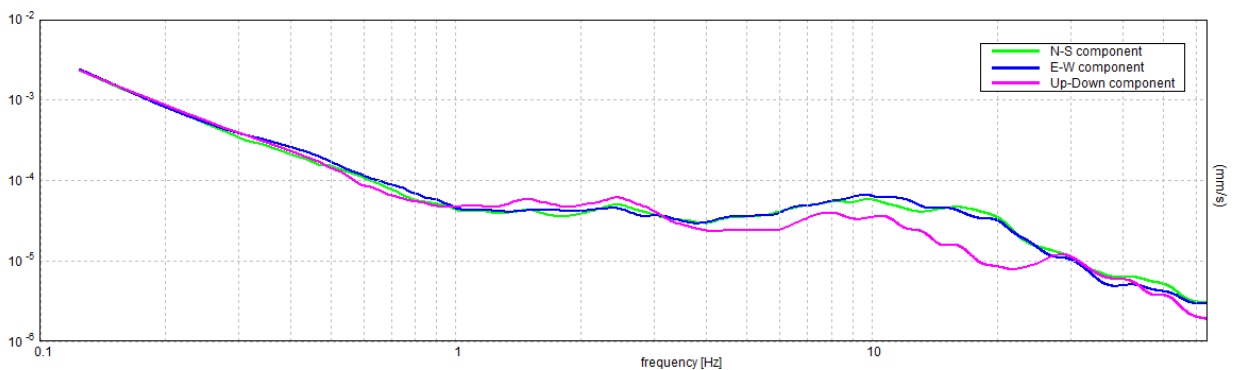
H/V TIME HISTORY



DIRECTIONAL H/V



SINGLE COMPONENT SPECTRA



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

Max. H/V at 19.06 ± 0.25 Hz (in the range 0.0 - 64.0 Hz).

Criteria for a reliable H/V curve

[All 3 should be fulfilled]

$f_0 > 10 / L_w$	19.06 > 0.50	OK	
$n_c(f_0) > 200$	15250.0 > 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 916 times	OK	

Criteria for a clear H/V peak

[At least 5 out of 6 should be fulfilled]

Exists f^- in $[f_0/4, f_0]$ $A_{H/V}(f^-) < A_0 / 2$	13.406 Hz	OK	
Exists f^+ in $[f_0, 4f_0]$ $A_{H/V}(f^+) < A_0 / 2$	24.188 Hz	OK	
$A_0 > 2$	4.01 > 2	OK	
$f_{\text{peak}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	$ 0.01325 < 0.05$	OK	
$\sigma_f < \varepsilon(f_0)$	0.25267 < 0.95313	OK	
$\sigma_A(f_0) < \theta(f_0)$	0.2273 < 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 $\sigma_A(f) < \theta(f_0)$

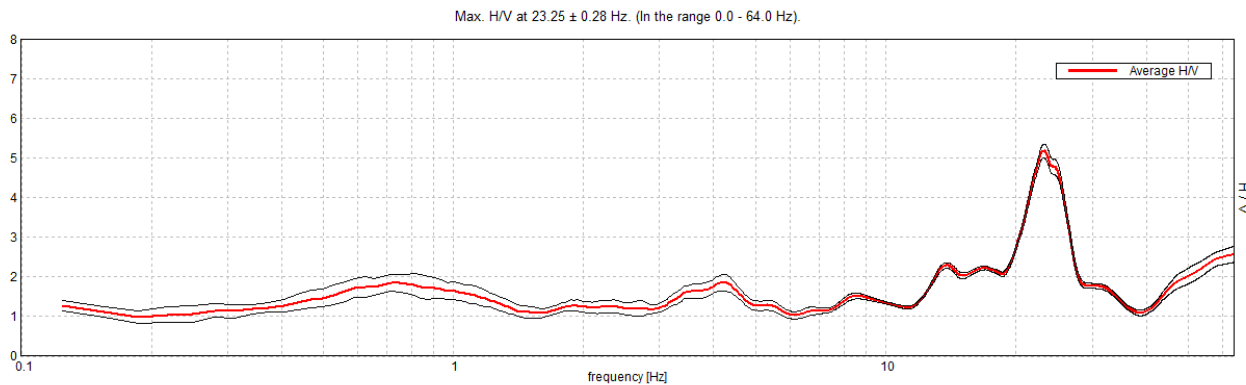
Threshold values for σ_f and $\sigma_A(f_0)$

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

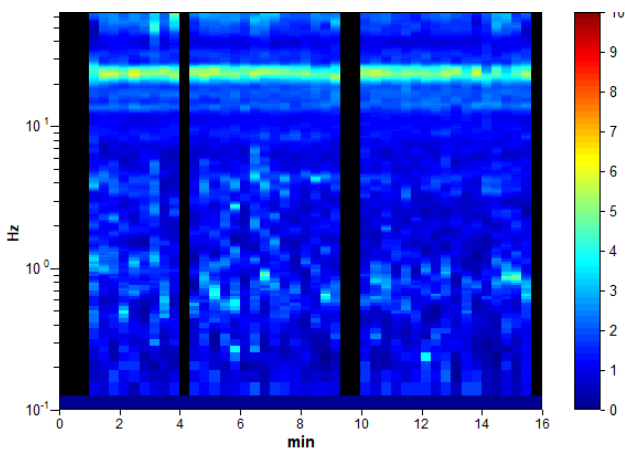
MS3 NOCETO, Zona Artigianale

Instrument: TRZ-0189/01-12
 Data format: 16 byte Full scale [mV]: 51
 Start recording: 01/01/00 01:55:23 End recording: 01/01/00 02:11:23
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN
 Trace length: 0h16'00". Analyzed 85% trace (manual window selection)
 Sampling rate: 128 Hz Window size: 20 s
 Smoothing type: Triangular window Smoothing: 10%

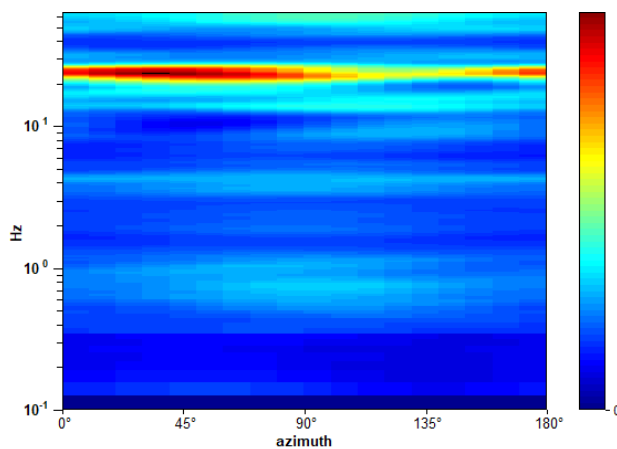
HORIZONTAL TO VERTICAL SPECTRAL RATIO



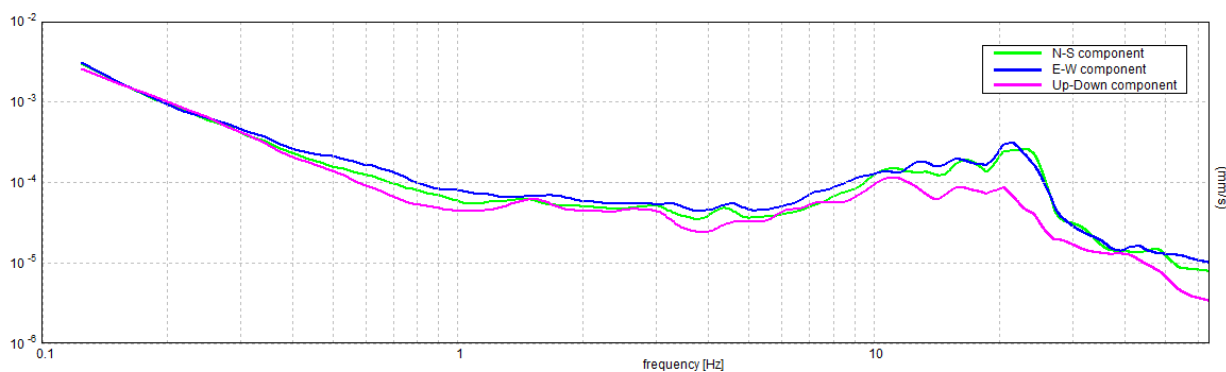
H/V TIME HISTORY



DIRECTIONAL H/V



SINGLE COMPONENT SPECTRA



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

Max. H/V at 23.25 ± 0.28 Hz (in the range 0.0 - 64.0 Hz).

Criteria for a reliable H/V curve

[All 3 should be fulfilled]

$f_0 > 10 / L_w$	23.25 > 0.50	OK	
$n_c(f_0) > 200$	19065.0 > 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 1117 times	OK	

Criteria for a clear H/V peak

[At least 5 out of 6 should be fulfilled]

Exists f^- in $[f_0/4, f_0]$ $A_{H/V}(f^-) < A_0 / 2$	19.813 Hz	OK	
Exists f^+ in $[f_0, 4f_0]$ $A_{H/V}(f^+) < A_0 / 2$	27.125 Hz	OK	
$A_0 > 2$	5.17 > 2	OK	
$f_{\text{peak}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	$ 0.01202 < 0.05$	OK	
$\sigma_f < \varepsilon(f_0)$	0.27951 < 1.1625	OK	
$\sigma_A(f_0) < \theta(f_0)$	0.1704 < 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 $\sigma_A(f) < \theta(f_0)$

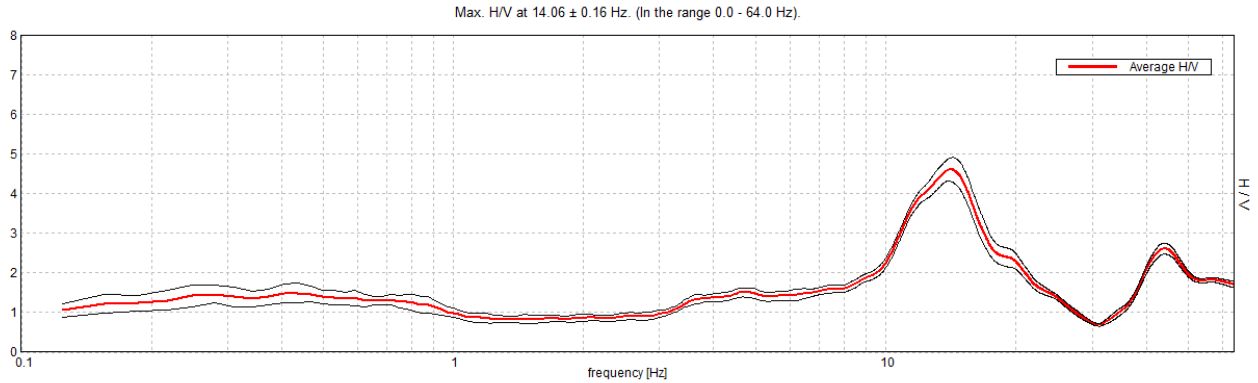
Threshold values for σ_f and $\sigma_A(f_0)$

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

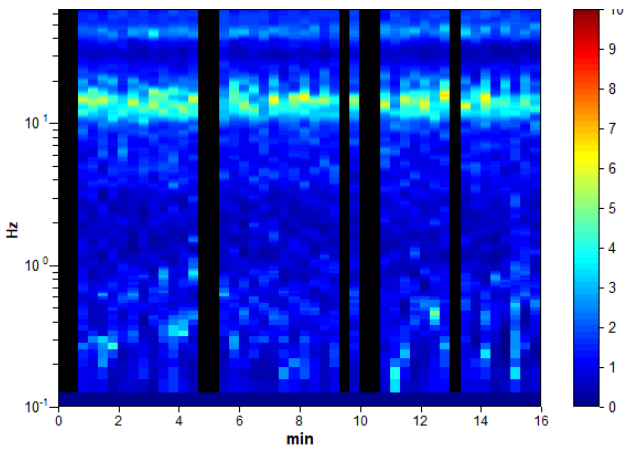
MS3 NOCETO, via Camboara

Instrument: TRZ-0189/01-12
 Data format: 16 byte Full scale [mV]: 51
 Start recording: 01/01/00 02:23:18 End recording: 01/01/00 02:39:18
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN
 Trace length: 0h16'00". Analyzed 83% trace (manual window selection)
 Sampling rate: 128 Hz Window size: 20 s
 Smoothing type: Triangular window Smoothing: 10%

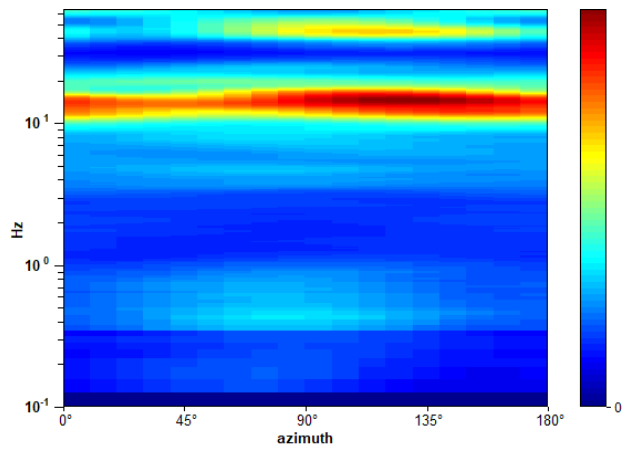
HORIZONTAL TO VERTICAL SPECTRAL RATIO



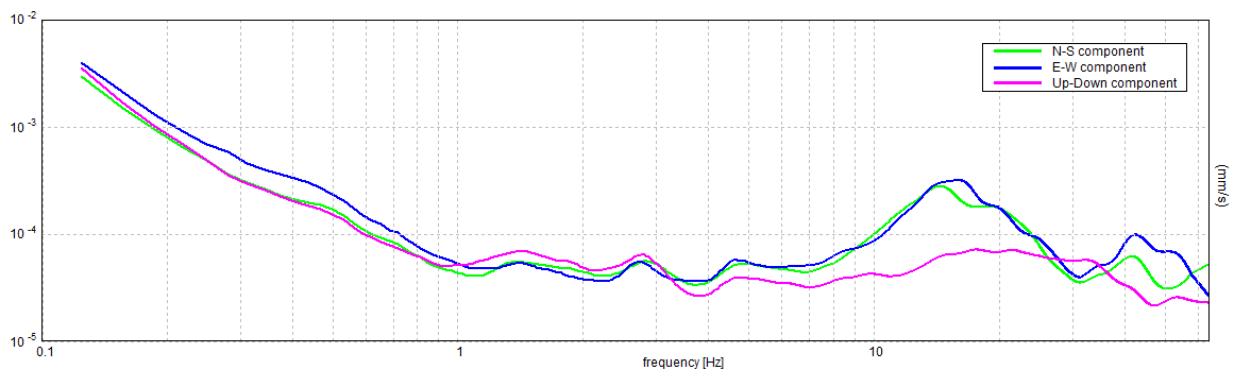
H/V TIME HISTORY



DIRECTIONAL H/V



SINGLE COMPONENT SPECTRA



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

Max. H/V at 14.06 ± 0.16 Hz (in the range 0.0 - 64.0 Hz).

Criteria for a reliable H/V curve

[All 3 should be fulfilled]

$f_0 > 10 / L_w$	14.06 > 0.50	OK	
$n_c(f_0) > 200$	11250.0 > 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 676 times	OK	

Criteria for a clear H/V peak

[At least 5 out of 6 should be fulfilled]

Exists f^- in $[f_0/4, f_0]$ $A_{H/V}(f^-) < A_0 / 2$	10.063 Hz	OK	
Exists f^+ in $[f_0, 4f_0]$ $A_{H/V}(f^+) < A_0 / 2$	19.938 Hz	OK	
$A_0 > 2$	4.60 > 2	OK	
$f_{\text{peak}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	$ 0.01146 < 0.05$	OK	
$\sigma_f < \varepsilon(f_0)$	0.1611 < 0.70313	OK	
$\sigma_A(f_0) < \theta(f_0)$	0.2915 < 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 $\sigma_A(f) < \theta(f_0)$

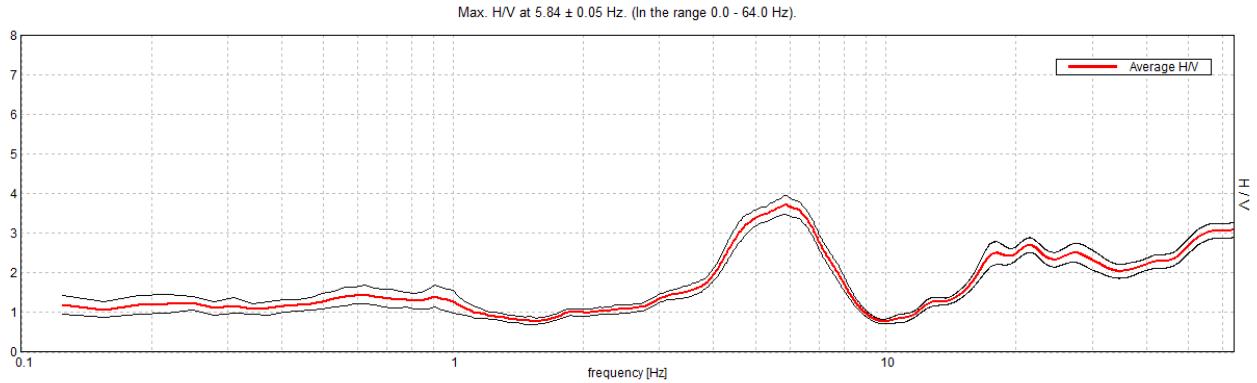
Threshold values for σ_f and $\sigma_A(f_0)$

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

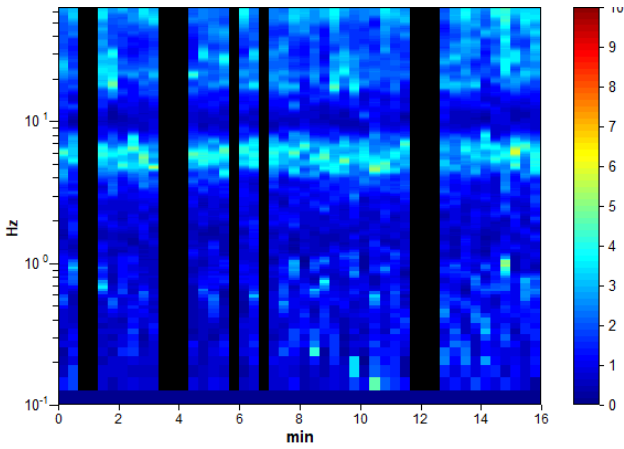
MS3 NOCETO, Parco Baden Powell

Instrument: TRZ-0189/01-12
 Data format: 16 byte Full scale [mV]: 51
 Start recording: 01/01/00 02:48:02 End recording: 01/01/00 03:04:02
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN
 Trace length: 0h16'00". Analyzed 79% trace (manual window selection)
 Sampling rate: 128 Hz Window size: 20 s
 Smoothing type: Triangular window Smoothing: 10%

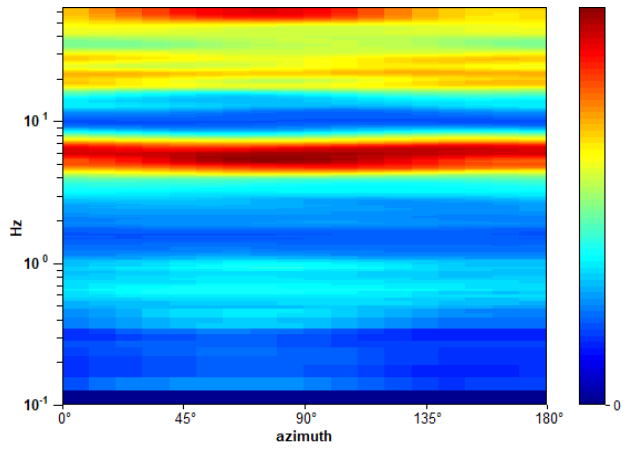
HORIZONTAL TO VERTICAL SPECTRAL RATIO



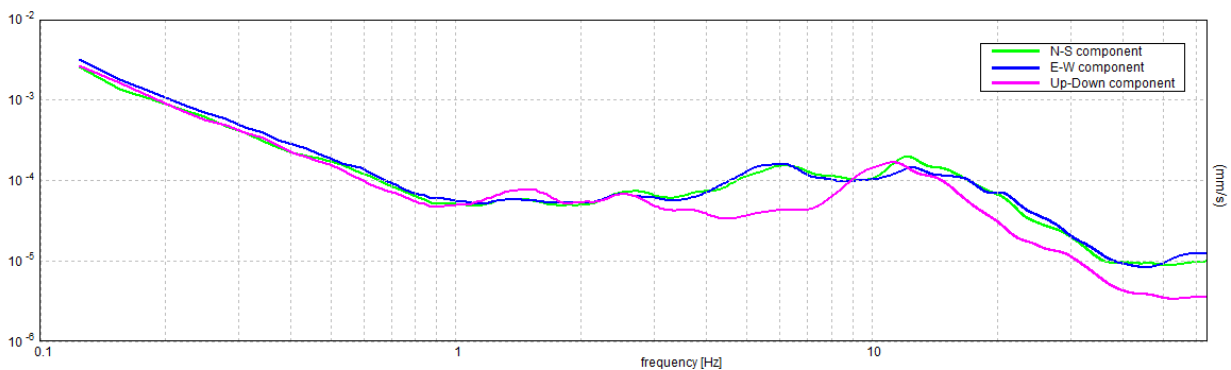
H/V TIME HISTORY



DIRECTIONAL H/V



SINGLE COMPONENT SPECTRA



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

Max. H/V at 5.84 ± 0.05 Hz (in the range 0.0 - 64.0 Hz).

Criteria for a reliable H/V curve

[All 3 should be fulfilled]

$f_0 > 10 / L_w$	5.84 > 0.50	OK	
$n_c(f_0) > 200$	4441.3 > 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 282 times	OK	

Criteria for a clear H/V peak

[At least 5 out of 6 should be fulfilled]

Exists f^- in $[f_0/4, f_0] \mid A_{H/V}(f^-) < A_0 / 2$	3.906 Hz	OK	
Exists f^+ in $[f_0, 4f_0] \mid A_{H/V}(f^+) < A_0 / 2$	7.906 Hz	OK	
$A_0 > 2$	3.71 > 2	OK	
$f_{\text{peak}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	$ 0.0091 < 0.05$	OK	
$\sigma_f < \varepsilon(f_0)$	0.05317 < 0.29219	OK	
$\sigma_A(f_0) < \theta(f_0)$	0.2355 < 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 $\sigma_A(f) < \theta(f_0)$

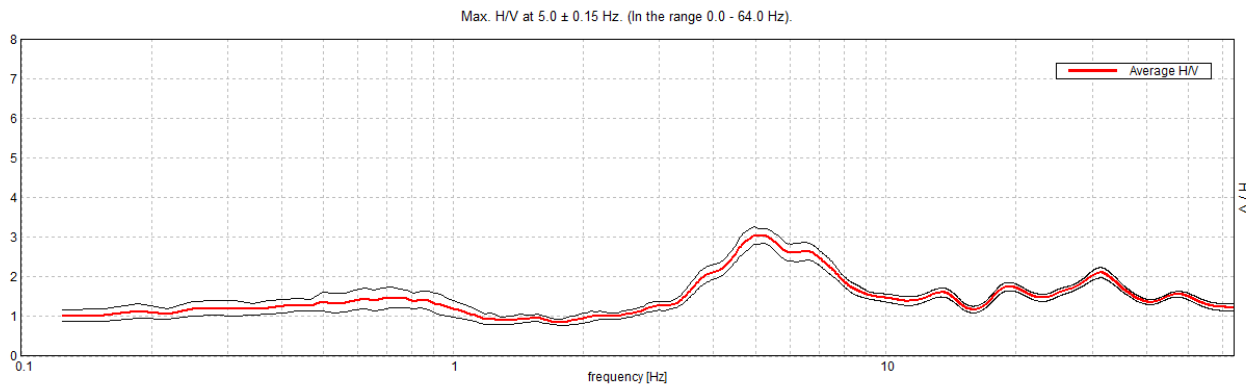
Threshold values for σ_f and $\sigma_A(f_0)$

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

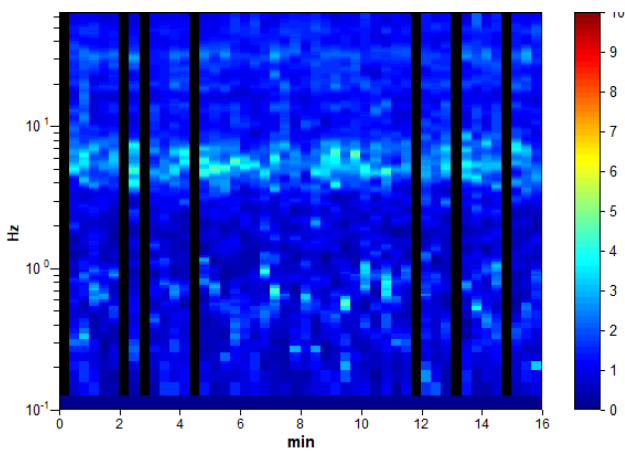
MS3 NOCETO, Borghetto Cimitero

Instrument: TRZ-0189/01-12
 Data format: 16 byte Full scale [mV]: 51
 Start recording: 01/01/00 03:52:02 End recording: 01/01/00 04:08:02
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN
 Trace length: 0h16'00". Analyzed 85% trace (manual window selection)
 Sampling rate: 128 Hz Window size: 20 s
 Smoothing type: Triangular window Smoothing: 10%

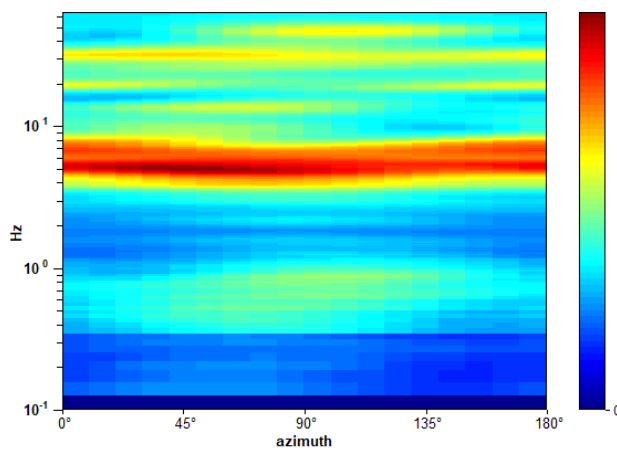
HORIZONTAL TO VERTICAL SPECTRAL RATIO



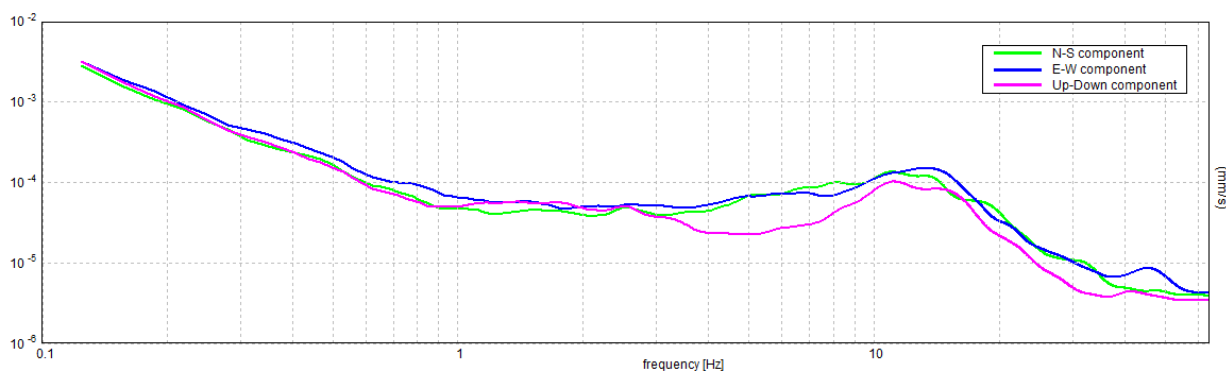
H/V TIME HISTORY



DIRECTIONAL H/V



SINGLE COMPONENT SPECTRA



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

Max. H/V at 5.0 ± 0.15 Hz (in the range 0.0 - 64.0 Hz).

Criteria for a reliable H/V curve

[All 3 should be fulfilled]

$f_0 > 10 / L_w$	$5.00 > 0.50$	OK	
$n_c(f_0) > 200$	$4100.0 > 200$	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 241 times	OK	

Criteria for a clear H/V peak

[At least 5 out of 6 should be fulfilled]

Exists f^- in $[f_0/4, f_0]$ $A_{H/V}(f^-) < A_0 / 2$	3.406 Hz	OK	
Exists f^+ in $[f_0, 4f_0]$ $A_{H/V}(f^+) < A_0 / 2$	9.313 Hz	OK	
$A_0 > 2$	$3.04 > 2$	OK	
$f_{\text{peak}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	$ 0.03074 < 0.05$	OK	
$\sigma_f < \varepsilon(f_0)$	$0.15371 < 0.25$	OK	
$\sigma_A(f_0) < \theta(f_0)$	$0.2099 < 1.58$	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

NOCETO MS3 – CAMPO SPORTIVO DI COSTAMEZZANA

Strumento: TRZ-0189/01-12

Formato dati: 16 byte

Fondo scala [mV]: n.a.

Inizio registrazione: 21/09/22 10:02:15 Fine registrazione: 21/09/22 10:18:14

Nomi canali: NORTH SOUTH; EAST WEST ; UP DOWN

Dato GPS non disponibile

Durata registrazione: 0h16'00". Analizzato 96% tracciato (selezione manuale)

Freq. campionamento: 128 Hz

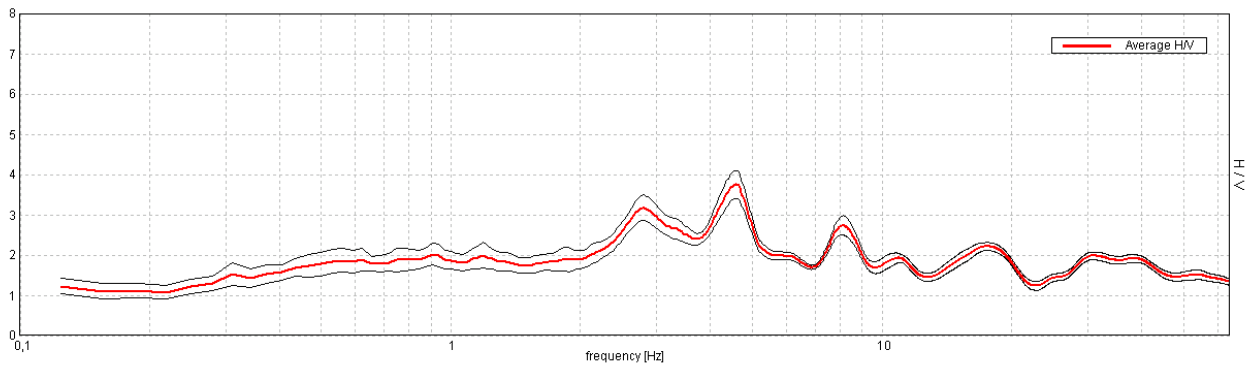
Lunghezza finestre: 20 s

Tipo di lisciamento: Triangular window

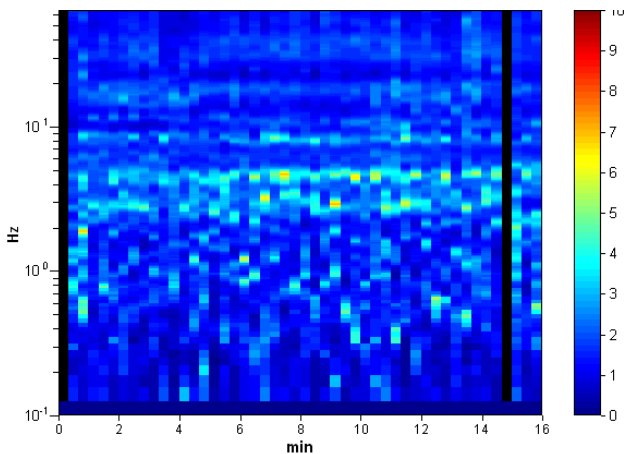
Lisciamento: 10%

RAPPORTO SPETTRALE ORIZZONTALE SU VERTICALE

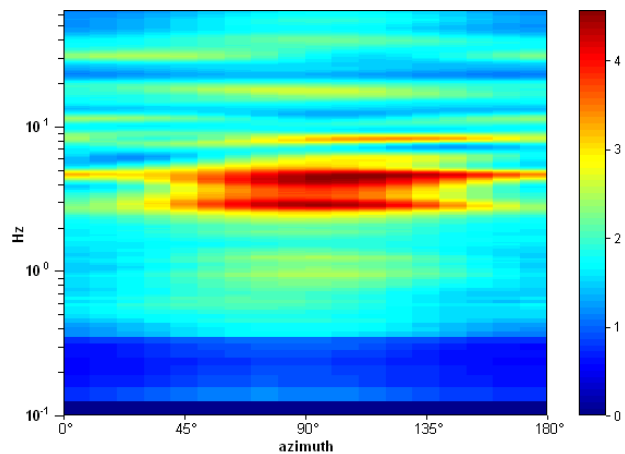
Picco H/V a $4,56 \pm 1,25$ Hz (nell'intervallo 0,0 - 64,0 Hz).



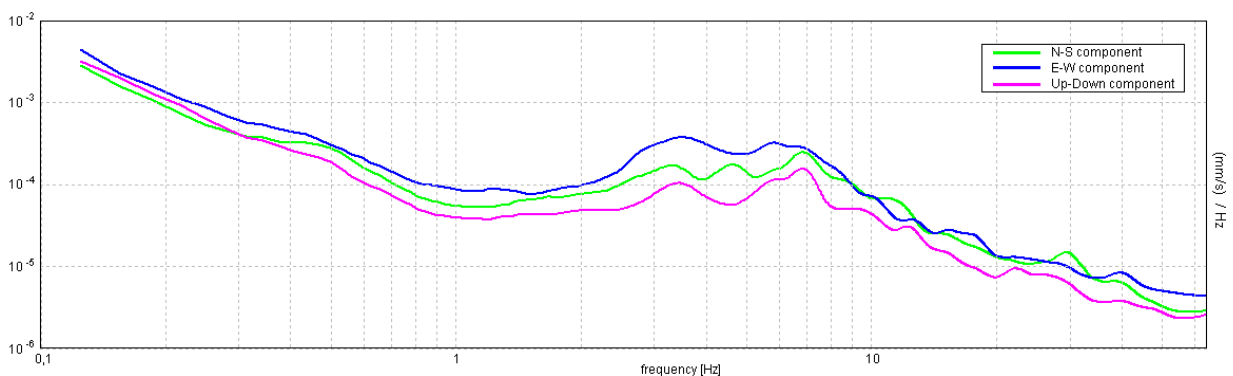
SERIE TEMPORALE H/V



DIREZIONALITA' H/V



SPETTRI DELLE SINGOLE COMPONENTI



[Secondo le linee guida SESAME, 2005. Si raccomanda di leggere attentamente il manuale di Grilla prima di interpretare la tabella seguente].

Picco H/V a $4,56 \pm 1,25$ Hz (nell'intervallo 0,0 - 64,0 Hz).

Criteri per una curva H/V affidabile

[Tutti 3 dovrebbero risultare soddisfatti]

$f_0 > 10 / L_w$	4,56 > 0,50	OK	
$n_c(f_0) > 200$	4197,5 > 200	OK	
$\sigma_A(f) < 2$ per $0.5f_0 < f < 2f_0$ se $f_0 > 0.5\text{Hz}$ $\sigma_A(f) < 3$ per $0.5f_0 < f < 2f_0$ se $f_0 < 0.5\text{Hz}$	Superato 0 volte su 220	OK	

Criteri per un picco H/V chiaro

[Almeno 5 su 6 dovrebbero essere soddisfatti]

Esiste f^- in $[f_0/4, f_0]$ $A_{H/V}(f^-) < A_0 / 2$	1,969 Hz	OK	
Esiste f^+ in $[f_0, 4f_0]$ $A_{H/V}(f^+) < A_0 / 2$	6,406 Hz	OK	
$A_0 > 2$	3,75 > 2	OK	
$f_{\text{picco}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	$ 0,27332 < 0.05$		NO
$\sigma_f < \varepsilon(f_0)$	1,24703 < 0,22813		NO
$\sigma_A(f_0) < \theta(f_0)$	0,3473 < 1,58	OK	

L_w	lunghezza della finestra
n_w	numero di finestre usate nell'analisi
$n_c = L_w n_w f_0$	numero di cicli significativi
f	frequenza attuale
f_0	frequenza del picco H/V
σ_f	deviazione standard della frequenza del picco H/V
$\varepsilon(f_0)$	valore di soglia per la condizione di stabilità $\sigma_f < \varepsilon(f_0)$
A_0	ampiezza della curva H/V alla frequenza f_0
$A_{H/V}(f)$	ampiezza della curva H/V alla frequenza f
f^-	frequenza tra $f_0/4$ e f_0 alla quale $A_{H/V}(f^-) < A_0/2$
f^+	frequenza tra f_0 e $4f_0$ alla quale $A_{H/V}(f^+) < A_0/2$
$\sigma_A(f)$	deviazione standard di $A_{H/V}(f)$, $\sigma_A(f)$ è il fattore per il quale la curva $A_{H/V}(f)$ media deve essere moltiplicata o divisa
$\sigma_{\log H/V}(f)$	deviazione standard della funzione $\log A_{H/V}(f)$
$\theta(f_0)$	valore di soglia per la condizione di stabilità $\sigma_A(f) < \theta(f_0)$

Valori di soglia per σ_f e $\sigma_A(f_0)$

Intervallo di freq. [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
$\theta(f_0)$ per $\sigma_A(f_0)$	3.0	2.5	2.0	1.78	1.58
$\log \theta(f_0)$ per $\sigma_{\log H/V}(f_0)$	0.48	0.40	0.30	0.25	0.20

NOCETO MS3 – VIA XXV APRILE

Strumento: TRZ-0189/01-12

Formato dati: 16 byte

Fondo scala [mV]: n.a.

Inizio registrazione: 21/09/22 10:34:43 Fine registrazione: 21/09/22 10:50:43

Nomi canali: NORTH SOUTH; EAST WEST ; UP DOWN

Dato GPS non disponibile

Durata registrazione: 0h16'00". Analizzato 92% tracciato (selezione manuale)

Freq. campionamento: 128 Hz

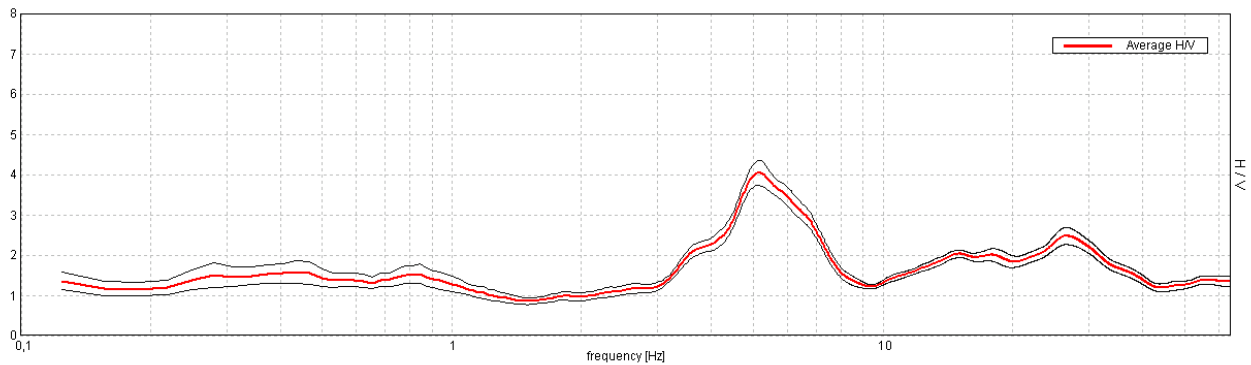
Lunghezza finestre: 20 s

Tipo di lisciamento: Triangular window

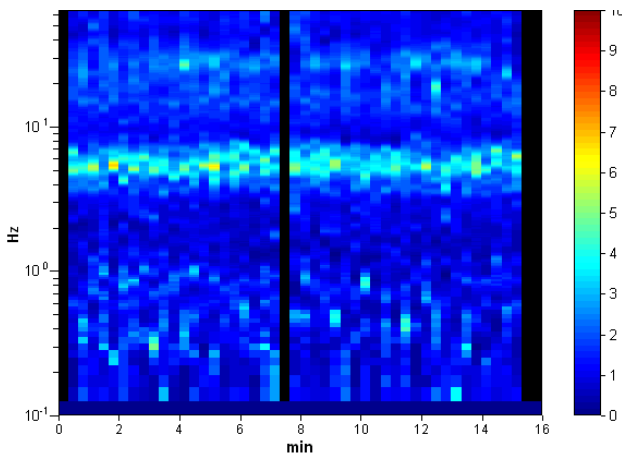
Lisciamento: 10%

RAPPORTO SPETTRALE ORIZZONTALE SU VERTICALE

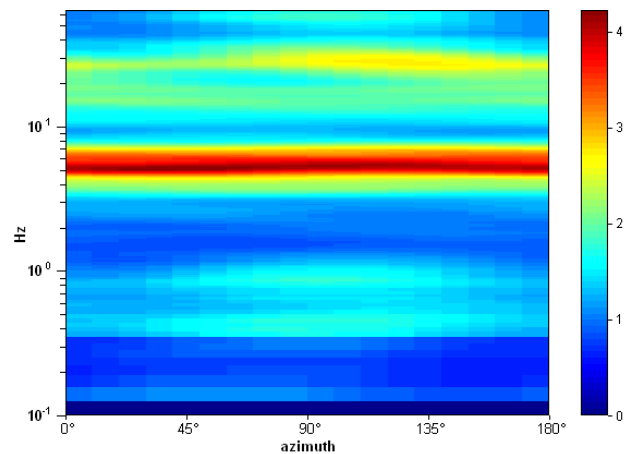
Max. H/V at 5,16 ± 0,08 Hz. (In the range 0,0 - 64,0 Hz).



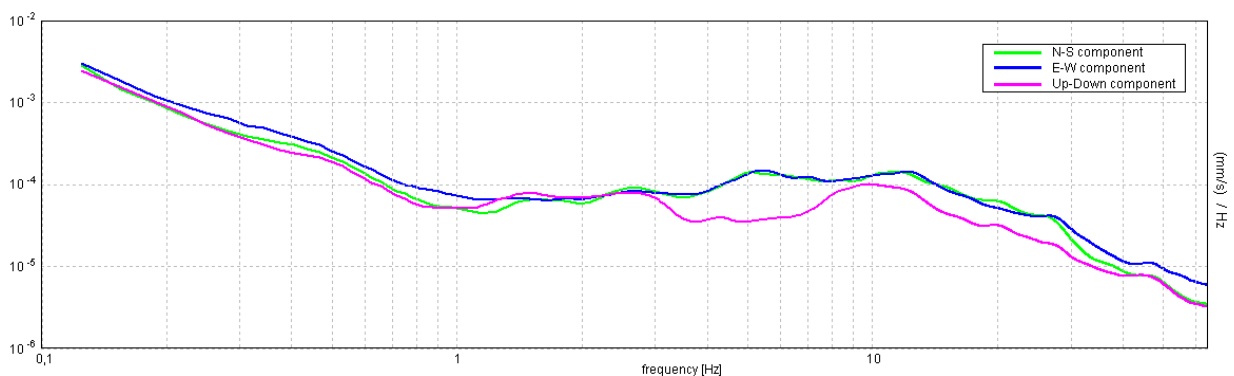
SERIE TEMPORALE H/V



DIREZIONALITA' H/V



SPETTRI DELLE SINGOLE COMPONENTI



[Secondo le linee guida SESAME, 2005. Si raccomanda di leggere attentamente il manuale di Grilla prima di interpretare la tabella seguente].

Picco H/V a $5,16 \pm 0,08$ Hz (nell'intervallo 0,0 - 64,0 Hz).

Criteri per una curva H/V affidabile

[Tutti 3 dovrebbero risultare soddisfatti]

$f_0 > 10 / L_w$	$5,16 > 0,50$	OK	
$n_c(f_0) > 200$	$4537,5 > 200$	OK	
$\sigma_A(f) < 2$ per $0.5f_0 < f < 2f_0$ se $f_0 > 0.5\text{Hz}$ $\sigma_A(f) < 3$ per $0.5f_0 < f < 2f_0$ se $f_0 < 0.5\text{Hz}$	Superato 0 volte su 248	OK	

Criteri per un picco H/V chiaro

[Almeno 5 su 6 dovrebbero essere soddisfatti]

Esiste f^- in $[f_0/4, f_0]$ $A_{H/V}(f^-) < A_0 / 2$	3,531 Hz	OK	
Esiste f^+ in $[f_0, 4f_0]$ $A_{H/V}(f^+) < A_0 / 2$	7,5 Hz	OK	
$A_0 > 2$	$4,04 > 2$	OK	
$f_{\text{picco}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	$ 0,01564 < 0.05$	OK	
$\sigma_f < \varepsilon(f_0)$	$0,08064 < 0,25781$	OK	
$\sigma_A(f_0) < \theta(f_0)$	$0,3128 < 1,58$	OK	

L_w	lunghezza della finestra
n_w	numero di finestre usate nell'analisi
$n_c = L_w n_w f_0$	numero di cicli significativi
f	frequenza attuale
f_0	frequenza del picco H/V
σ_f	deviazione standard della frequenza del picco H/V
$\varepsilon(f_0)$	valore di soglia per la condizione di stabilità $\sigma_f < \varepsilon(f_0)$
A_0	ampiezza della curva H/V alla frequenza f_0
$A_{H/V}(f)$	ampiezza della curva H/V alla frequenza f
f^-	frequenza tra $f_0/4$ e f_0 alla quale $A_{H/V}(f^-) < A_0/2$
f^+	frequenza tra f_0 e $4f_0$ alla quale $A_{H/V}(f^+) < A_0/2$
$\sigma_A(f)$	deviazione standard di $A_{H/V}(f)$, $\sigma_A(f)$ è il fattore per il quale la curva $A_{H/V}(f)$ media deve essere moltiplicata o divisa
$\sigma_{\log H/V}(f)$	deviazione standard della funzione $\log A_{H/V}(f)$
$\theta(f_0)$	valore di soglia per la condizione di stabilità $\sigma_A(f) < \theta(f_0)$

Valori di soglia per σ_f e $\sigma_A(f_0)$

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

NOCETO MS3 – PARCO ZANFURLINA

Strumento: TRZ-0189/01-12

Formato dati: 16 byte

Fondo scala [mV]: n.a.

Inizio registrazione: 21/09/22 10:58:34 Fine registrazione: 21/09/22 11:14:34

Nomi canali: NORTH SOUTH; EAST WEST ; UP DOWN

Dato GPS non disponibile

Durata registrazione: 0h16'00". Analizzato 94% tracciato (selezione manuale)

Freq. campionamento: 128 Hz

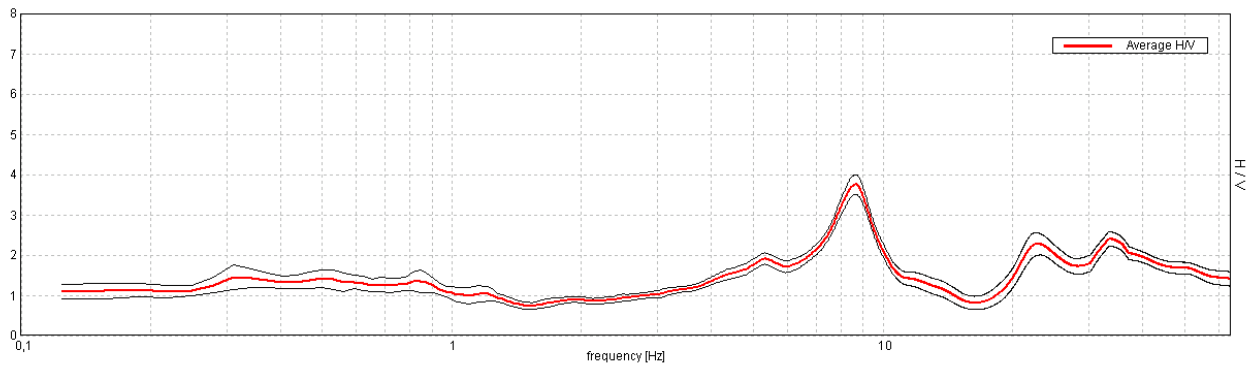
Lunghezza finestre: 20 s

Tipo di lisciamento: Triangular window

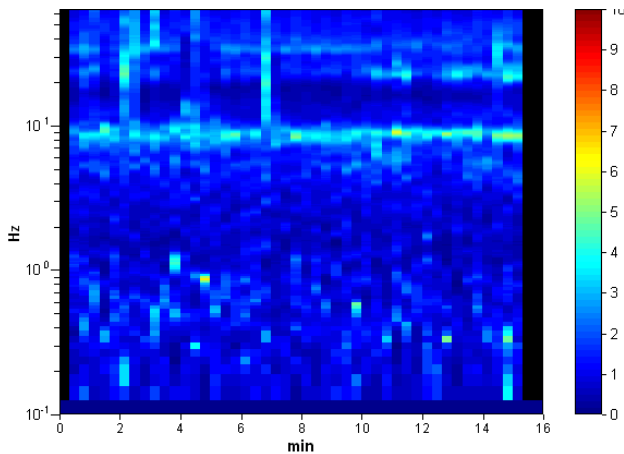
Lisciamento: 10%

RAPPORTO SPETTRALE ORIZZONTALE SU VERTICALE

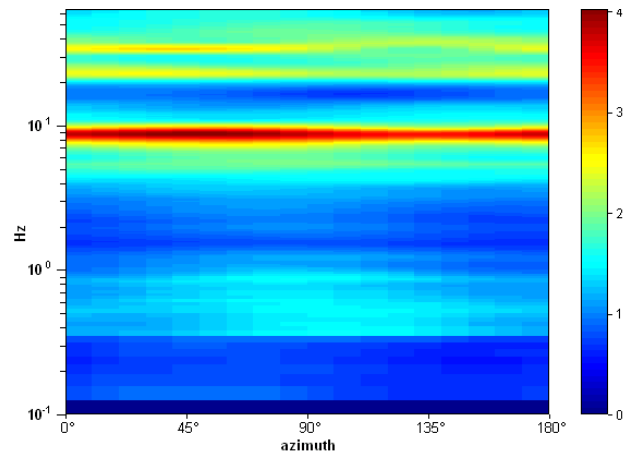
Max. H/V at 8,66 ± 0,17 Hz. (In the range 0,0 - 64,0 Hz).



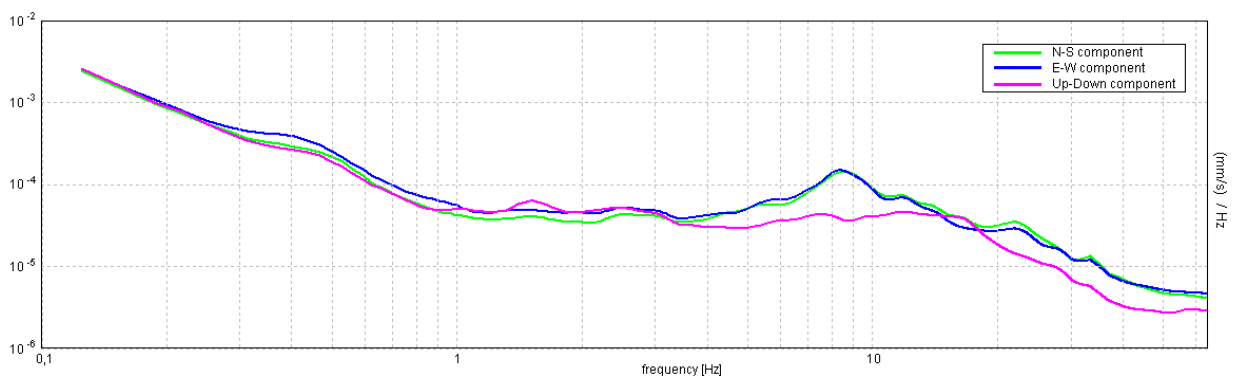
SERIE TEMPORALE H/V



DIREZIONALITA' H/V



SPETTRI DELLE SINGOLE COMPONENTI



[Secondo le linee guida SESAME, 2005. Si raccomanda di leggere attentamente il manuale di Grilla prima di interpretare la tabella seguente].

Picco H/V a $8,66 \pm 0,17$ Hz (nell'intervallo 0,0 - 64,0 Hz).

Criteri per una curva H/V affidabile

[Tutti 3 dovrebbero risultare soddisfatti]

$f_0 > 10 / L_w$	$8,66 > 0,50$	OK	
$n_c(f_0) > 200$	$7790,6 > 200$	OK	
$\sigma_A(f) < 2$ per $0.5f_0 < f < 2f_0$ se $f_0 > 0.5\text{Hz}$ $\sigma_A(f) < 3$ per $0.5f_0 < f < 2f_0$ se $f_0 < 0.5\text{Hz}$	Superato 0 volte su 416	OK	

Criteri per un picco H/V chiaro

[Almeno 5 su 6 dovrebbero essere soddisfatti]

Esiste f^- in $[f_0/4, f_0]$ $A_{H/V}(f^-) < A_0 / 2$	6,5 Hz	OK	
Esiste f^+ in $[f_0, 4f_0]$ $A_{H/V}(f^+) < A_0 / 2$	10,313 Hz	OK	
$A_0 > 2$	$3,75 > 2$	OK	
$f_{\text{picco}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	$ 0,01923 < 0.05$	OK	
$\sigma_f < \varepsilon(f_0)$	$0,16647 < 0,43281$	OK	
$\sigma_A(f_0) < \theta(f_0)$	$0,2446 < 1,58$	OK	

L_w	lunghezza della finestra
n_w	numero di finestre usate nell'analisi
$n_c = L_w n_w f_0$	numero di cicli significativi
f	frequenza attuale
f_0	frequenza del picco H/V
σ_f	deviazione standard della frequenza del picco H/V
$\varepsilon(f_0)$	valore di soglia per la condizione di stabilità $\sigma_f < \varepsilon(f_0)$
A_0	ampiezza della curva H/V alla frequenza f_0
$A_{H/V}(f)$	ampiezza della curva H/V alla frequenza f
f^-	frequenza tra $f_0/4$ e f_0 alla quale $A_{H/V}(f^-) < A_0/2$
f^+	frequenza tra f_0 e $4f_0$ alla quale $A_{H/V}(f^+) < A_0/2$
$\sigma_A(f)$	deviazione standard di $A_{H/V}(f)$, $\sigma_A(f)$ è il fattore per il quale la curva $A_{H/V}(f)$ media deve essere moltiplicata o divisa
$\sigma_{\log H/V}(f)$	deviazione standard della funzione $\log A_{H/V}(f)$
$\theta(f_0)$	valore di soglia per la condizione di stabilità $\sigma_A(f) < \theta(f_0)$

Valori di soglia per σ_f e $\sigma_A(f_0)$

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

NOCETO MS3 – VIA GALVANA

Strumento: TRZ-0189/01-12

Formato dati: 16 byte

Fondo scala [mV]: n.a.

Inizio registrazione: 21/09/22 11:20:18 Fine registrazione: 21/09/22 11:36:18

Nomi canali: NORTH SOUTH; EAST WEST ; UP DOWN

Dato GPS non disponibile

Durata registrazione: 0h16'00". Analizzato 94% tracciato (selezione manuale)

Freq. campionamento: 128 Hz

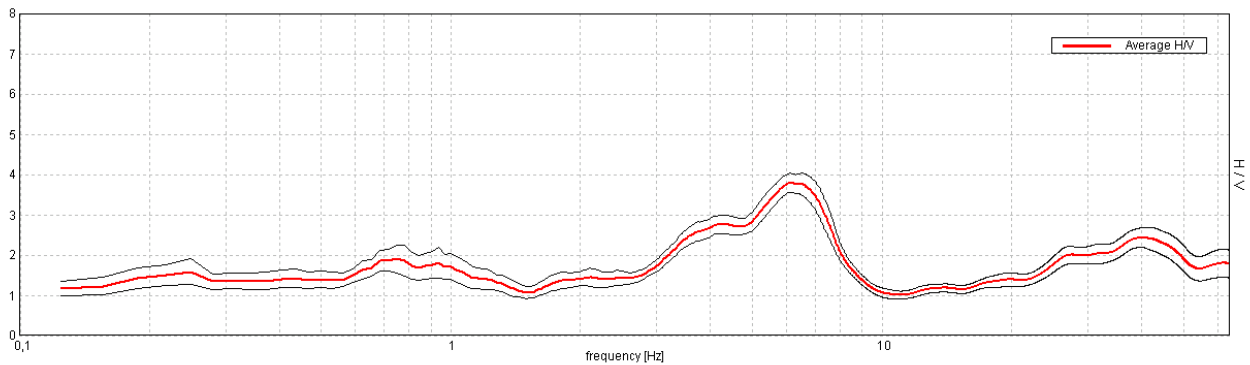
Lunghezza finestre: 20 s

Tipo di lisciamento: Triangular window

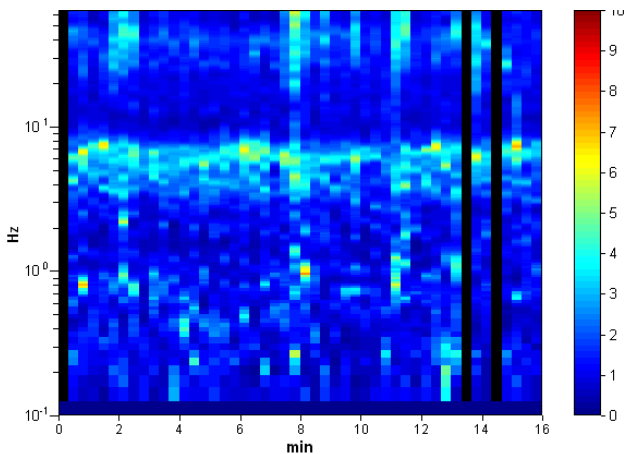
Lisciamento: 10%

RAPPORTO SPETTRALE ORIZZONTALE SU VERTICALE

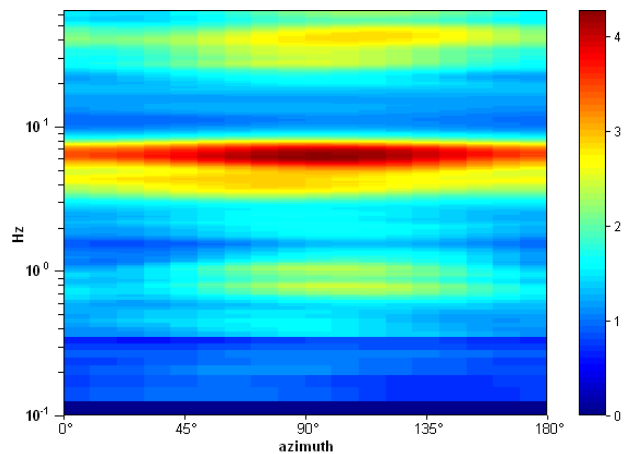
Max. H/V at 6,13 ± 0,44 Hz. (In the range 0,0 - 64,0 Hz).



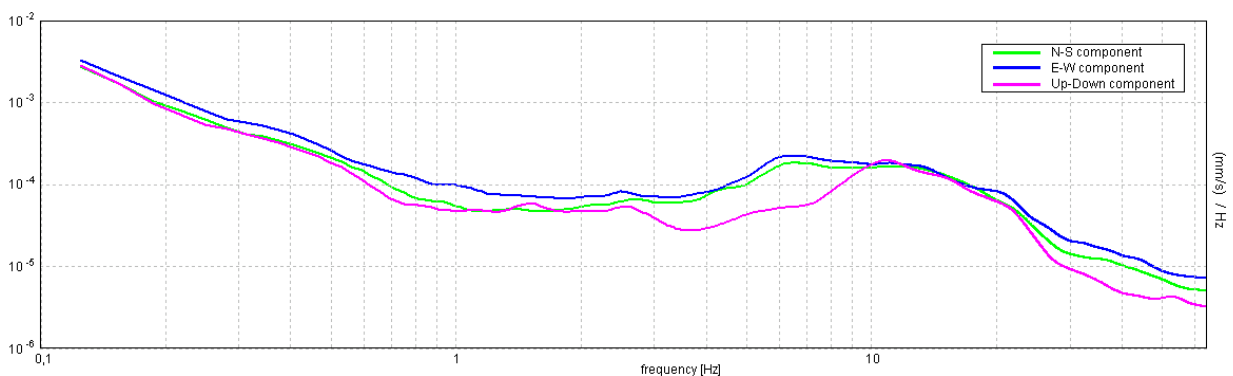
SERIE TEMPORALE H/V



DIREZIONALITA' H/V



SPETTRI DELLE SINGOLE COMPONENTI



[Secondo le linee guida SESAME, 2005. Si raccomanda di leggere attentamente il manuale di Grilla prima di interpretare la tabella seguente].

Picco H/V a $6,13 \pm 0,44$ Hz (nell'intervallo 0,0 - 64,0 Hz).

Criteri per una curva H/V affidabile

[Tutti 3 dovrebbero risultare soddisfatti]

$f_0 > 10 / L_w$	$6,13 > 0,50$	OK	
$n_c(f_0) > 200$	$5512,5 > 200$	OK	
$\sigma_A(f) < 2$ per $0.5f_0 < f < 2f_0$ se $f_0 > 0.5\text{Hz}$ $\sigma_A(f) < 3$ per $0.5f_0 < f < 2f_0$ se $f_0 < 0.5\text{Hz}$	Superato 0 volte su 295	OK	

Criteri per un picco H/V chiaro

[Almeno 5 su 6 dovrebbero essere soddisfatti]

Esiste f^- in $[f_0/4, f_0]$ $A_{H/V}(f^-) < A_0 / 2$	3,094 Hz	OK	
Esiste f^+ in $[f_0, 4f_0]$ $A_{H/V}(f^+) < A_0 / 2$	8,188 Hz	OK	
$A_0 > 2$	$3,79 > 2$	OK	
$f_{\text{picco}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	$ 0,07249 < 0.05$		NO
$\sigma_f < \varepsilon(f_0)$	$0,44397 < 0,30625$		NO
$\sigma_A(f_0) < \theta(f_0)$	$0,2364 < 1,58$	OK	

L_w	lunghezza della finestra
n_w	numero di finestre usate nell'analisi
$n_c = L_w n_w f_0$	numero di cicli significativi
f	frequenza attuale
f_0	frequenza del picco H/V
σ_f	deviazione standard della frequenza del picco H/V
$\varepsilon(f_0)$	valore di soglia per la condizione di stabilità $\sigma_f < \varepsilon(f_0)$
A_0	ampiezza della curva H/V alla frequenza f_0
$A_{H/V}(f)$	ampiezza della curva H/V alla frequenza f
f^-	frequenza tra $f_0/4$ e f_0 alla quale $A_{H/V}(f^-) < A_0/2$
f^+	frequenza tra f_0 e $4f_0$ alla quale $A_{H/V}(f^+) < A_0/2$
$\sigma_A(f)$	deviazione standard di $A_{H/V}(f)$, $\sigma_A(f)$ è il fattore per il quale la curva $A_{H/V}(f)$ media deve essere moltiplicata o divisa
$\sigma_{\log H/V}(f)$	deviazione standard della funzione $\log A_{H/V}(f)$
$\theta(f_0)$	valore di soglia per la condizione di stabilità $\sigma_A(f) < \theta(f_0)$

Valori di soglia per σ_f e $\sigma_A(f_0)$

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

NOCETO MS3 – PARCO ZANFURLINA

Strumento: TRZ-0189/01-12

Formato dati: 16 byte

Fondo scala [mV]: n.a.

Inizio registrazione: 21/09/22 10:58:34 Fine registrazione: 21/09/22 11:14:34

Nomi canali: NORTH SOUTH; EAST WEST ; UP DOWN

Dato GPS non disponibile

Durata registrazione: 0h16'00". Analizzato 94% tracciato (selezione manuale)

Freq. campionamento: 128 Hz

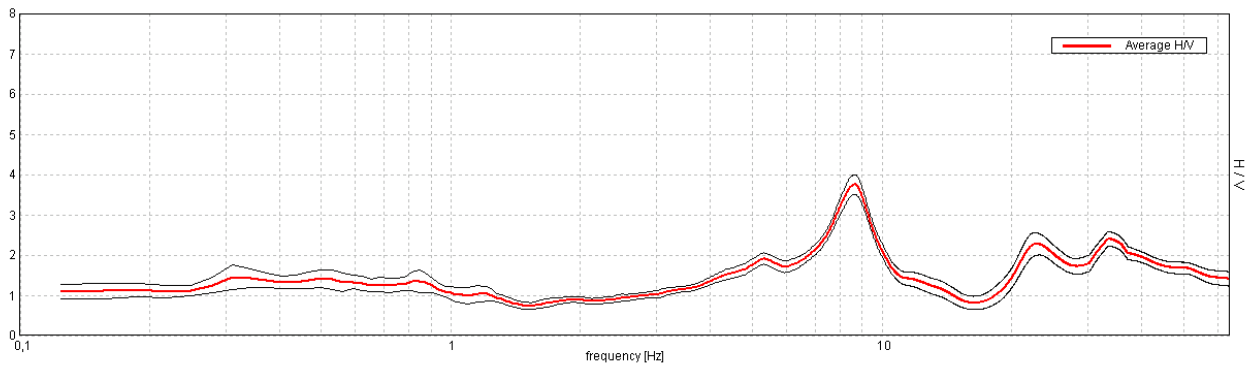
Lunghezza finestre: 20 s

Tipo di lisciamento: Triangular window

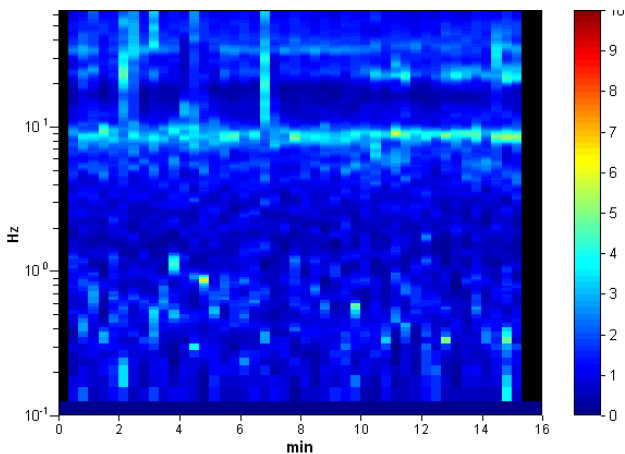
Lisciamento: 10%

RAPPORTO SPETTRALE ORIZZONTALE SU VERTICALE

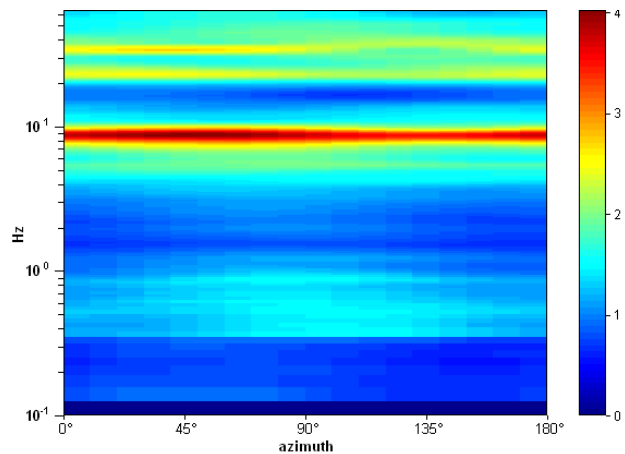
Max. H/V at 8,66 ± 0,17 Hz. (In the range 0,0 - 64,0 Hz).



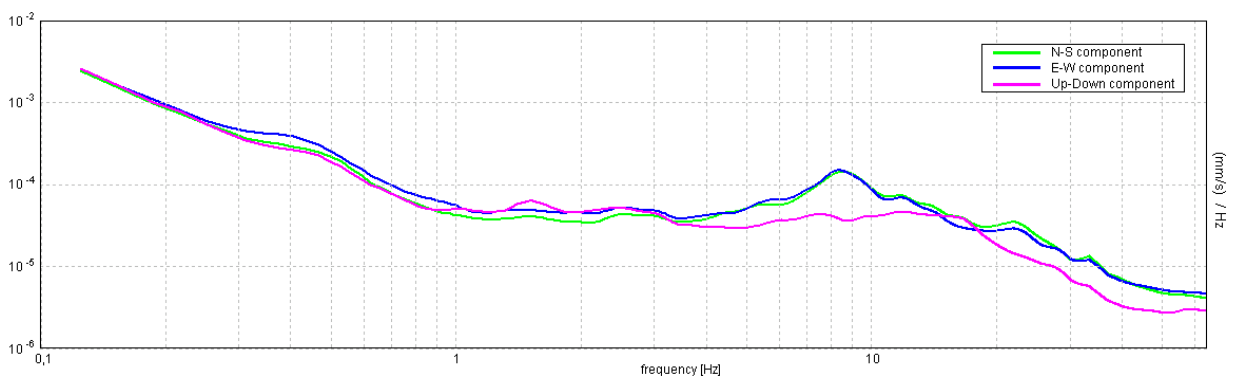
SERIE TEMPORALE H/V



DIREZIONALITA' H/V



SPETTRI DELLE SINGOLE COMPONENTI



[Secondo le linee guida SESAME, 2005. Si raccomanda di leggere attentamente il manuale di Grilla prima di interpretare la tabella seguente].

Picco H/V a $8,66 \pm 0,17$ Hz (nell'intervallo 0,0 - 64,0 Hz).

Criteri per una curva H/V affidabile

[Tutti 3 dovrebbero risultare soddisfatti]

$f_0 > 10 / L_w$	$8,66 > 0,50$	OK	
$n_c(f_0) > 200$	$7790,6 > 200$	OK	
$\sigma_A(f) < 2$ per $0.5f_0 < f < 2f_0$ se $f_0 > 0.5\text{Hz}$ $\sigma_A(f) < 3$ per $0.5f_0 < f < 2f_0$ se $f_0 < 0.5\text{Hz}$	Superato 0 volte su 416	OK	

Criteri per un picco H/V chiaro

[Almeno 5 su 6 dovrebbero essere soddisfatti]

Esiste f^- in $[f_0/4, f_0]$ $A_{H/V}(f^-) < A_0 / 2$	6,5 Hz	OK	
Esiste f^+ in $[f_0, 4f_0]$ $A_{H/V}(f^+) < A_0 / 2$	10,313 Hz	OK	
$A_0 > 2$	$3,75 > 2$	OK	
$f_{\text{picco}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	$ 0,01923 < 0.05$	OK	
$\sigma_f < \varepsilon(f_0)$	$0,16647 < 0,43281$	OK	
$\sigma_A(f_0) < \theta(f_0)$	$0,2446 < 1,58$	OK	

L_w	lunghezza della finestra
n_w	numero di finestre usate nell'analisi
$n_c = L_w n_w f_0$	numero di cicli significativi
f	frequenza attuale
f_0	frequenza del picco H/V
σ_f	deviazione standard della frequenza del picco H/V
$\varepsilon(f_0)$	valore di soglia per la condizione di stabilità $\sigma_f < \varepsilon(f_0)$
A_0	ampiezza della curva H/V alla frequenza f_0
$A_{H/V}(f)$	ampiezza della curva H/V alla frequenza f
f^-	frequenza tra $f_0/4$ e f_0 alla quale $A_{H/V}(f^-) < A_0/2$
f^+	frequenza tra f_0 e $4f_0$ alla quale $A_{H/V}(f^+) < A_0/2$
$\sigma_A(f)$	deviazione standard di $A_{H/V}(f)$, $\sigma_A(f)$ è il fattore per il quale la curva $A_{H/V}(f)$ media deve essere moltiplicata o divisa
$\sigma_{\log H/V}(f)$	deviazione standard della funzione $\log A_{H/V}(f)$
$\theta(f_0)$	valore di soglia per la condizione di stabilità $\sigma_A(f) < \theta(f_0)$

Valori di soglia per σ_f e $\sigma_A(f_0)$

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

NOCETO MS3 – VIA TANARA

Strumento: TRZ-0189/01-12

Formato dati: 16 byte

Fondo scala [mV]: n.a.

Inizio registrazione: 21/09/22 12:07:41 Fine registrazione: 21/09/22 12:23:41

Nomi canali: NORTH SOUTH; EAST WEST ; UP DOWN

Dato GPS non disponibile

Durata registrazione: 0h16'00".

Analizzato 90% tracciato (selezione manuale)

Freq. campionamento: 128 Hz

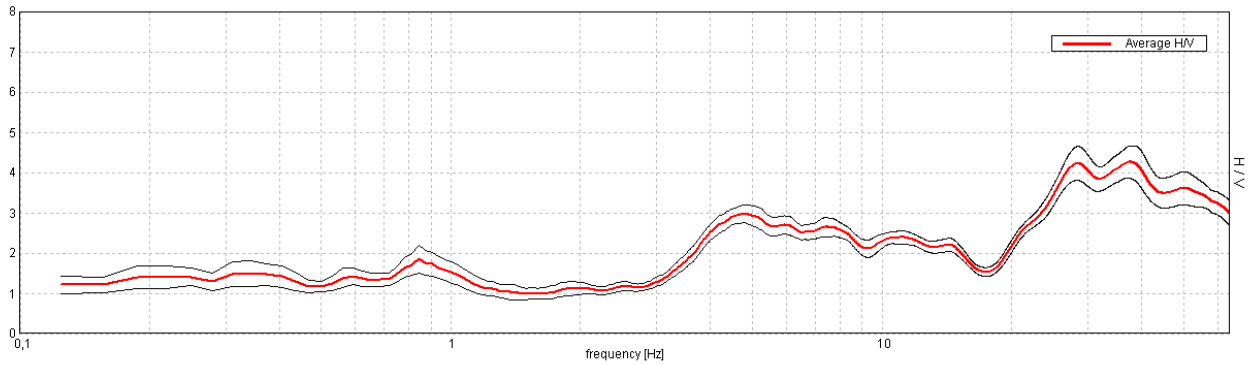
Lunghezza finestre: 20 s

Tipo di lisciamento: Triangular window

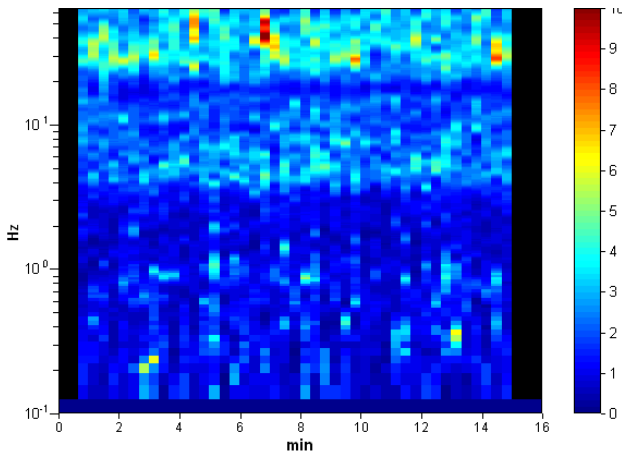
Lisciamento: 10%

RAPPORTO SPETTRALE ORIZZONTALE SU VERTICALE

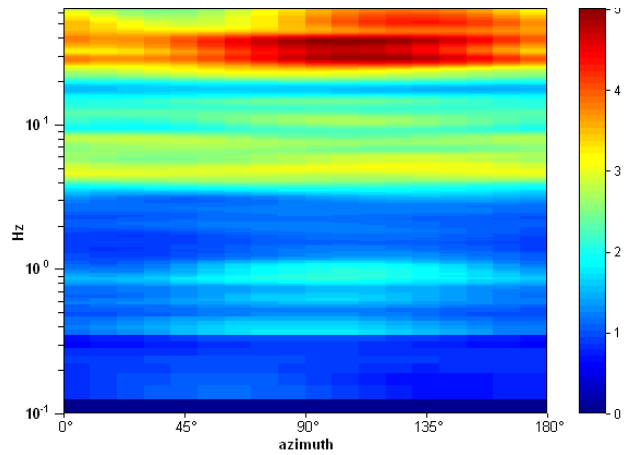
Picco H/V a 37,5 ± 5,7 Hz (nell'intervallo 0,0 - 64,0 Hz).



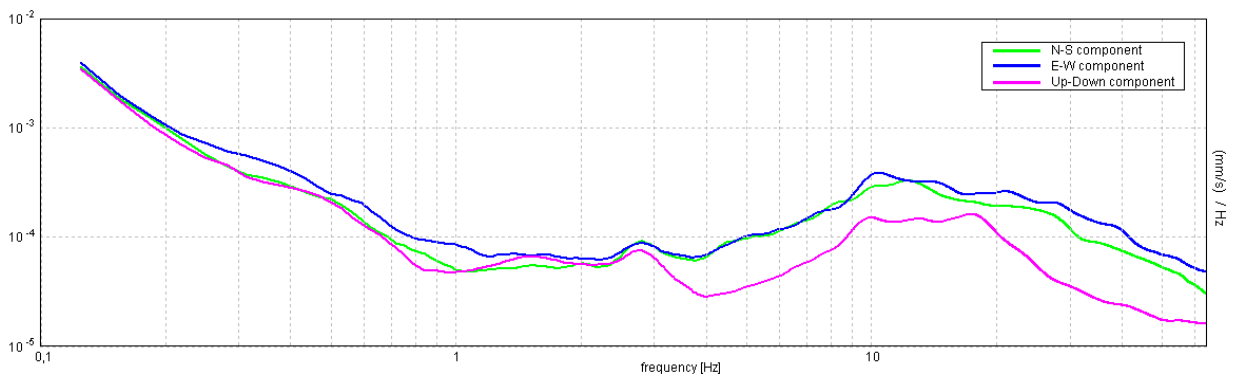
SERIE TEMPORALE H/V



DIREZIONALITA' H/V



SPETTRI DELLE SINGOLE COMPONENTI



[Secondo le linee guida SESAME, 2005. Si raccomanda di leggere attentamente il manuale di Grilla prima di interpretare la tabella seguente].

Picco H/V a $37,5 \pm 5,7$ Hz (nell'intervallo 0,0 - 64,0 Hz).

Criteri per una curva H/V affidabile

[Tutti 3 dovrebbero risultare soddisfatti]

$f_0 > 10 / L_w$	$37,50 > 0,50$	OK	
$n_c(f_0) > 200$	$32250,0 > 200$	OK	
$\sigma_A(f) < 2$ per $0.5f_0 < f < 2f_0$ se $f_0 > 0.5\text{Hz}$ $\sigma_A(f) < 3$ per $0.5f_0 < f < 2f_0$ se $f_0 < 0.5\text{Hz}$	Superato 0 volte su 1449	OK	

Criteri per un picco H/V chiaro

[Almeno 5 su 6 dovrebbero essere soddisfatti]

Esiste f^- in $[f_0/4, f_0]$ $A_{H/V}(f^-) < A_0 / 2$	19,875 Hz	OK	
Esiste f^+ in $[f_0, 4f_0]$ $A_{H/V}(f^+) < A_0 / 2$			NO
$A_0 > 2$	$4,26 > 2$	OK	
$f_{\text{picco}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	$ 0,15198 < 0.05$		NO
$\sigma_f < \varepsilon(f_0)$	$5,69916 < 1,875$		NO
$\sigma_A(f_0) < \theta(f_0)$	$0,3994 < 1,58$	OK	

L_w	lunghezza della finestra
n_w	numero di finestre usate nell'analisi
$n_c = L_w n_w f_0$	numero di cicli significativi
f	frequenza attuale
f_0	frequenza del picco H/V
σ_f	deviazione standard della frequenza del picco H/V
$\varepsilon(f_0)$	valore di soglia per la condizione di stabilità $\sigma_f < \varepsilon(f_0)$
A_0	ampiezza della curva H/V alla frequenza f_0
$A_{H/V}(f)$	ampiezza della curva H/V alla frequenza f
f^-	frequenza tra $f_0/4$ e f_0 alla quale $A_{H/V}(f^-) < A_0/2$
f^+	frequenza tra f_0 e $4f_0$ alla quale $A_{H/V}(f^+) < A_0/2$
$\sigma_A(f)$	deviazione standard di $A_{H/V}(f)$, $\sigma_A(f)$ è il fattore per il quale la curva $A_{H/V}(f)$ media deve essere moltiplicata o divisa
$\sigma_{\log H/V}(f)$	deviazione standard della funzione $\log A_{H/V}(f)$
$\theta(f_0)$	valore di soglia per la condizione di stabilità $\sigma_A(f) < \theta(f_0)$

Valori di soglia per σ_f e $\sigma_A(f_0)$

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

NOCETO MS3 - VIATORRICELLI

Strumento: TRZ-0189/01-12

Formato dati: 16 byte

Fondo scala [mV]: n.a.

Inizio registrazione: 21/09/22 12:33:24 Fine registrazione: 21/09/22 12:49:24

Nomi canali: NORTH SOUTH; EAST WEST ; UP DOWN

Dato GPS non disponibile

Durata registrazione: 0h16'00". Analizzato 92% tracciato (selezione manuale)

Freq. campionamento: 128 Hz

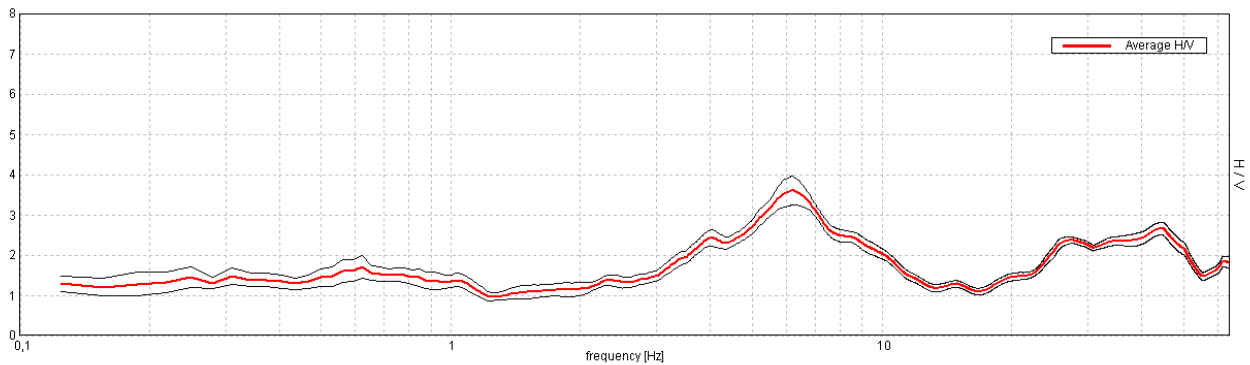
Lunghezza finestre: 20 s

Tipo di lisciamento: Triangular window

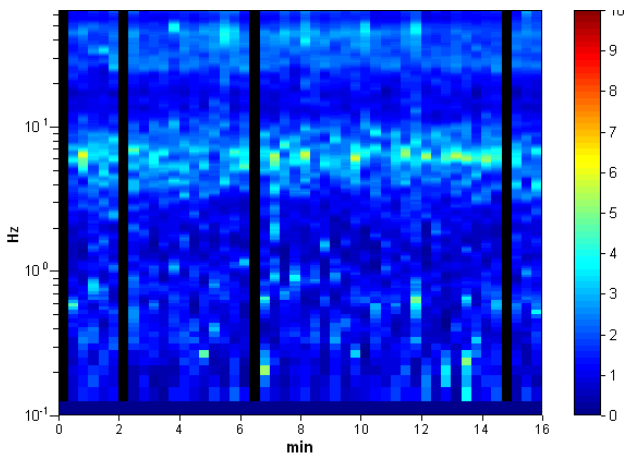
Lisciamento: 10%

RAPPORTO SPETTRALE ORIZZONTALE SU VERTICALE

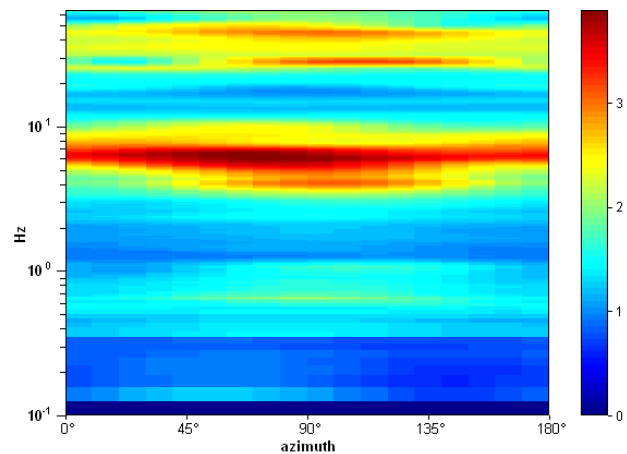
Max. H/V at 6,19 ± 0,89 Hz. (In the range 0,0 - 64,0 Hz).



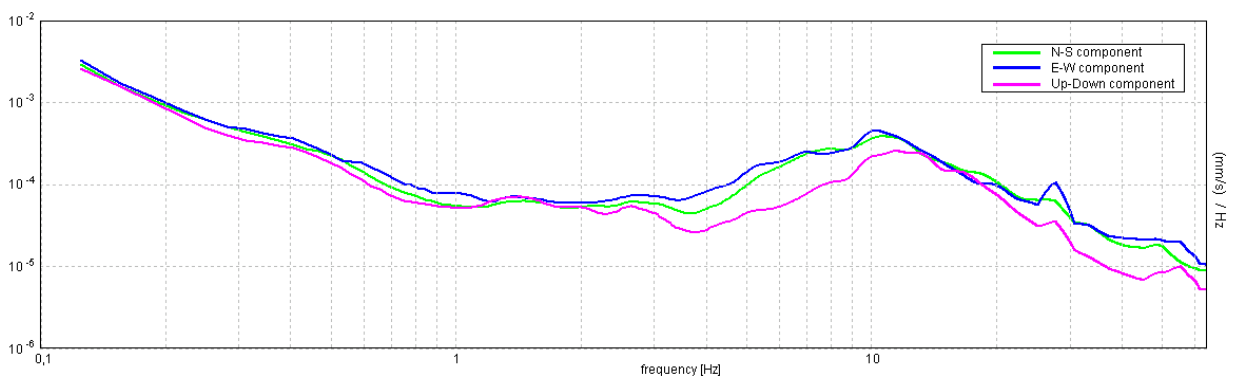
SERIE TEMPORALE H/V



DIREZIONALITA' H/V



SPETTRI DELLE SINGOLE COMPONENTI



[Secondo le linee guida SESAME, 2005. Si raccomanda di leggere attentamente il manuale di Grilla prima di interpretare la tabella seguente].

Picco H/V a $6,19 \pm 0,89$ Hz (nell'intervallo 0,0 - 64,0 Hz).

Criteri per una curva H/V affidabile

[Tutti 3 dovrebbero risultare soddisfatti]

$f_0 > 10 / L_w$	$6,19 > 0,50$	OK	
$n_c(f_0) > 200$	$5445,0 > 200$	OK	
$\sigma_A(f) < 2$ per $0.5f_0 < f < 2f_0$ se $f_0 > 0.5\text{Hz}$ $\sigma_A(f) < 3$ per $0.5f_0 < f < 2f_0$ se $f_0 < 0.5\text{Hz}$	Superato 0 volte su 298	OK	

Criteri per un picco H/V chiaro

[Almeno 5 su 6 dovrebbero essere soddisfatti]

Esiste f^- in $[f_0/4, f_0]$ $A_{H/V}(f^-) < A_0 / 2$	3,281 Hz	OK	
Esiste f^+ in $[f_0, 4f_0]$ $A_{H/V}(f^+) < A_0 / 2$	10,688 Hz	OK	
$A_0 > 2$	$3,60 > 2$	OK	
$f_{\text{picco}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	$ 0,14388 < 0.05$		NO
$\sigma_f < \varepsilon(f_0)$	$0,89025 < 0,30938$		NO
$\sigma_A(f_0) < \theta(f_0)$	$0,357 < 1,58$	OK	

L_w	lunghezza della finestra
n_w	numero di finestre usate nell'analisi
$n_c = L_w n_w f_0$	numero di cicli significativi
f	frequenza attuale
f_0	frequenza del picco H/V
σ_f	deviazione standard della frequenza del picco H/V
$\varepsilon(f_0)$	valore di soglia per la condizione di stabilità $\sigma_f < \varepsilon(f_0)$
A_0	ampiezza della curva H/V alla frequenza f_0
$A_{H/V}(f)$	ampiezza della curva H/V alla frequenza f
f^-	frequenza tra $f_0/4$ e f_0 alla quale $A_{H/V}(f^-) < A_0/2$
f^+	frequenza tra f_0 e $4f_0$ alla quale $A_{H/V}(f^+) < A_0/2$
$\sigma_A(f)$	deviazione standard di $A_{H/V}(f)$, $\sigma_A(f)$ è il fattore per il quale la curva $A_{H/V}(f)$ media deve essere moltiplicata o divisa
$\sigma_{\log H/V}(f)$	deviazione standard della funzione $\log A_{H/V}(f)$
$\theta(f_0)$	valore di soglia per la condizione di stabilità $\sigma_A(f) < \theta(f_0)$

Valori di soglia per σ_f e $\sigma_A(f_0)$

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