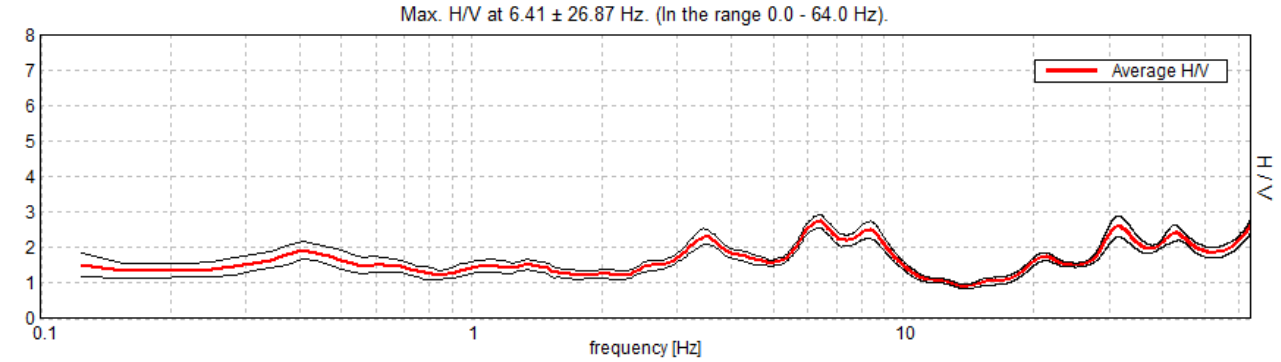
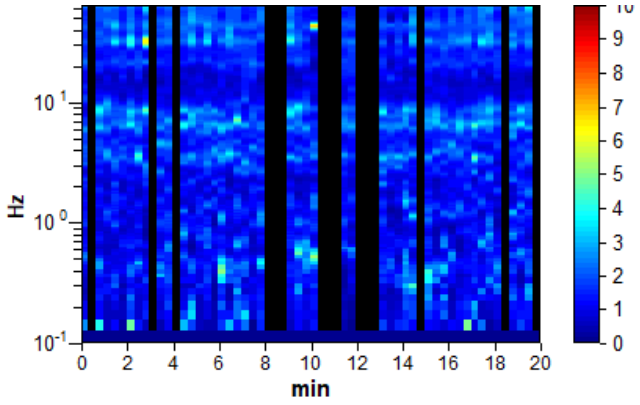
**5, S. IPPOLITO**

Instrument: TZ3-0057/02-17
Data format: 32 byte
Full scale [mV]: 51
Start recording: 07/06/19 11:10:30 End recording: 07/06/19 11:30:30
Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN
GPS data not available
Trace length: 0h20'00''. Analyzed 75% trace (manual window selection)
Sampling rate: 128 Hz
Window size: 20 s
Smoothing type: Triangular window
Smoothing: 10%

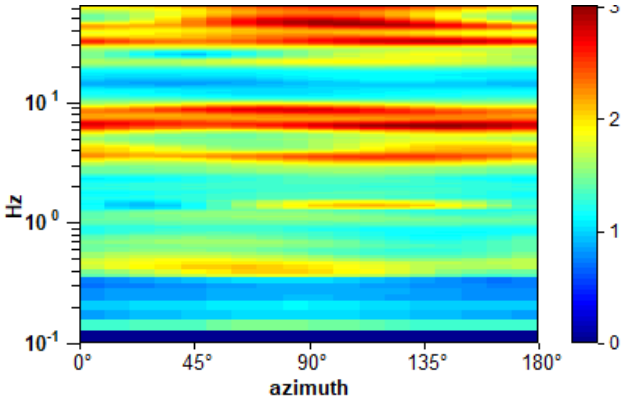
HORIZONTAL TO VERTICAL SPECTRAL RATIO



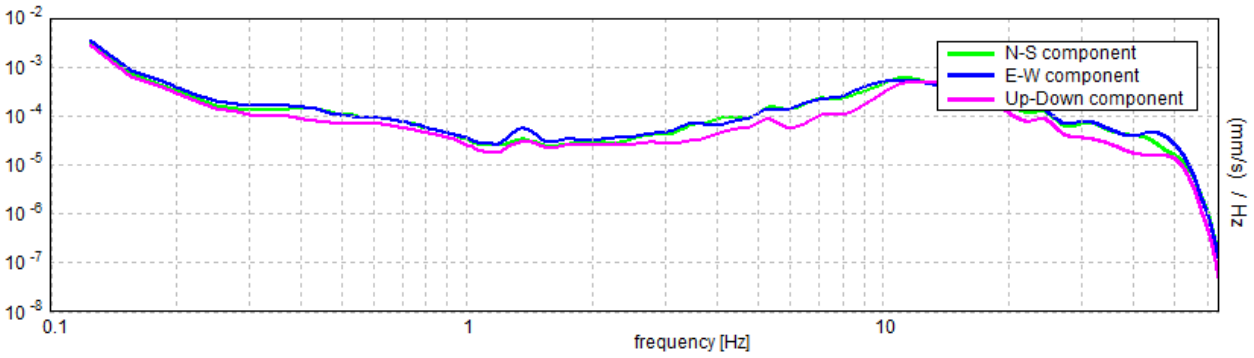

H/V TIME HISTORY




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 6.41 ± 26.87 Hz (in the range 0.0 - 64.0 Hz).**

| **Criteria for a reliable H/V curve** [All 3 should be fulfilled] | | | |
|---|---|---|---|
| **$f_0 > 10 / L_w$** | 6.41 > 0.50 | OK | |
| **$n_c(f_0) > 200$** | 5765.6 > 200 | OK | |
| **$\sigma_A(f) < 2$ for $0.5f_0 < f < 2f_0$ if $f_0 > 0.5$Hz**<br>**$\sigma_A(f) < 3$ for $0.5f_0 < f < 2f_0$ if $f_0 < 0.5$Hz** | Exceeded 0 out of 308 times | OK | |
| **Criteria for a clear H/V peak** [At least 5 out of 6 should be fulfilled] | | | |
| **Exists $f^-$ in $[f_0/4, f_0]$ \| $A_{H/V}(f^-) < A_0 / 2$** | 2.438 Hz | OK | |
| **Exists $f^+$ in $[f_0, 4f_0]$ \| $A_{H/V}(f^+) < A_0 / 2$** | 10.313 Hz | OK | |
| **$A_0 > 2$** | 2.75 > 2 | OK | |
| **$f_{peak}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$** | \|4.19421\| < 0.05 | | NO |
| **$\sigma_f < \varepsilon(f_0)$** | 26.86914 < 0.32031 | | NO |
| **$\sigma_A(f_0) < \theta(f_0)$** | 0.1856 < 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 |
| $\sigma_f$ | 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 |
| $\sigma_{logH/V}(f)$ | 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 $\sigma_f$ 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 $\sigma_{logH/V}(f_0)$ | 0.48 | 0.40 | 0.30 | 0.25 | 0.20 |