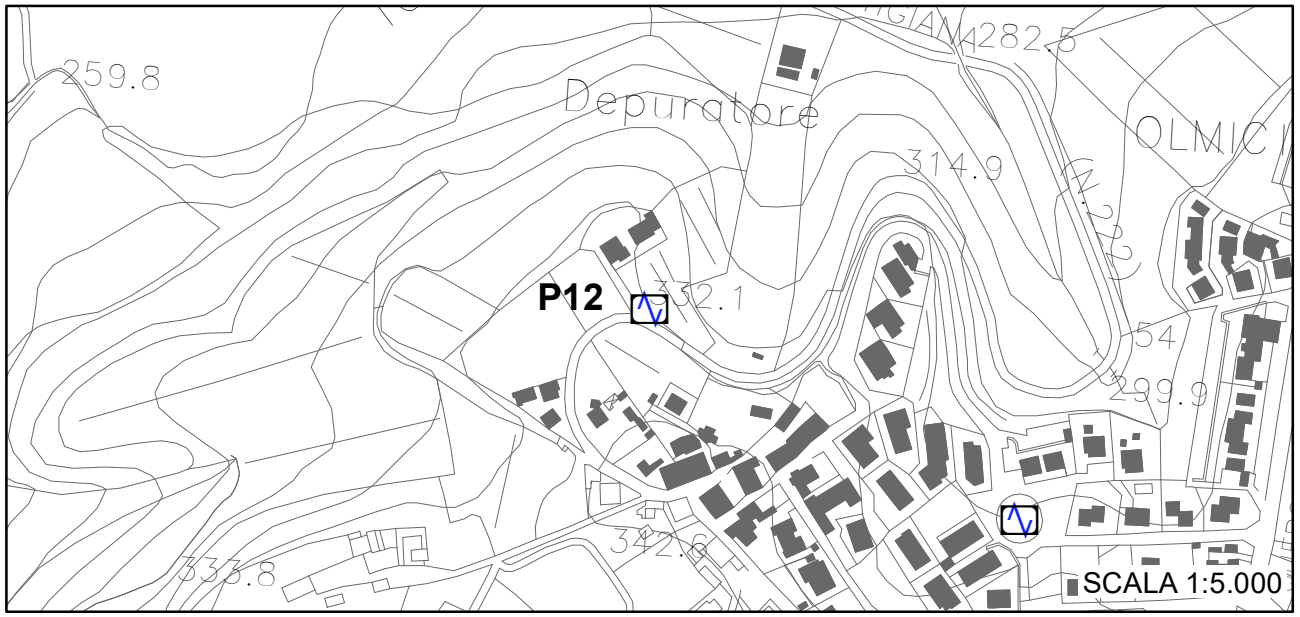
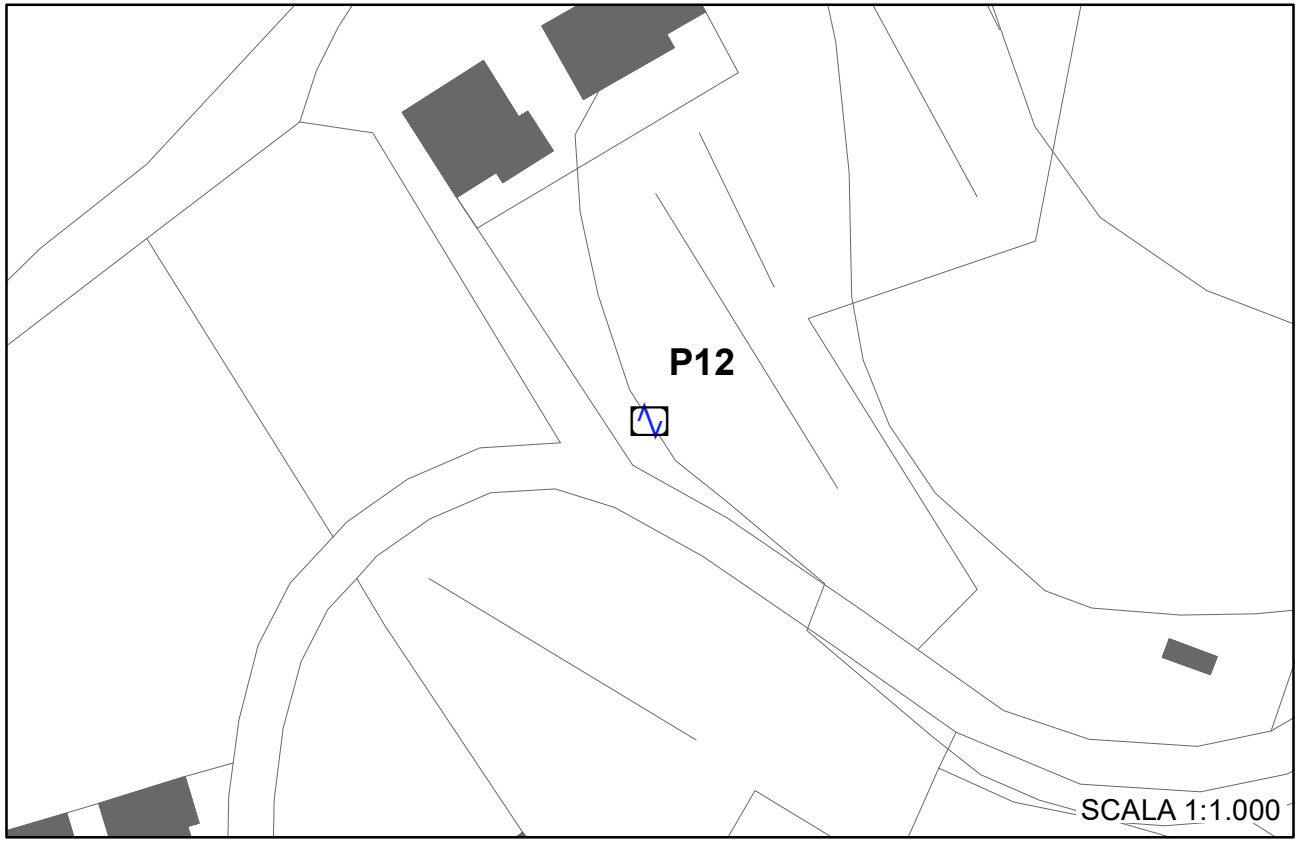




STUDIO DI GEOLOGIA - Dott.Geol.Alberto Tomei
Dott.Geol.Nicolò Mantovani - Indagini geofisiche

COMUNE DI CASTELNUOVO BERARDENGA

MICROZONAZIONE SISMICA II° LIVELLO

Misure di microtremore a stazione singola HVSR

Indagine n°: P12

Località: Quercegrossa 3

Data: 10 Giugno 2022

LEGENDA

Tipologia prova

HVSR

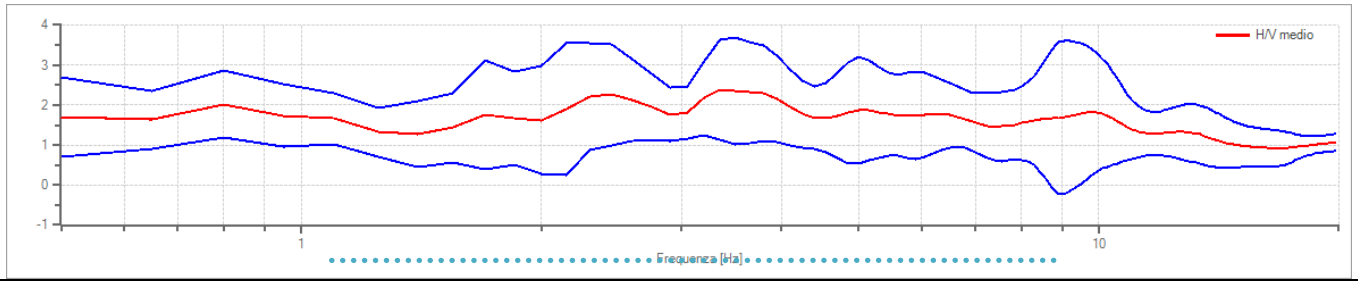
P xxx indagine puntuale

Studio
Georicerche snc
PI e CF: 01232900520
di Luca Caselli & Roberto Cerri - geologi
Via Pietro Nenni, 82/2 Loc. BADESSE
53035 - MONTERIGGIONI (Si)
Tel & Fax 0577/310021 E-mail geo.ricerche@virgilio.it

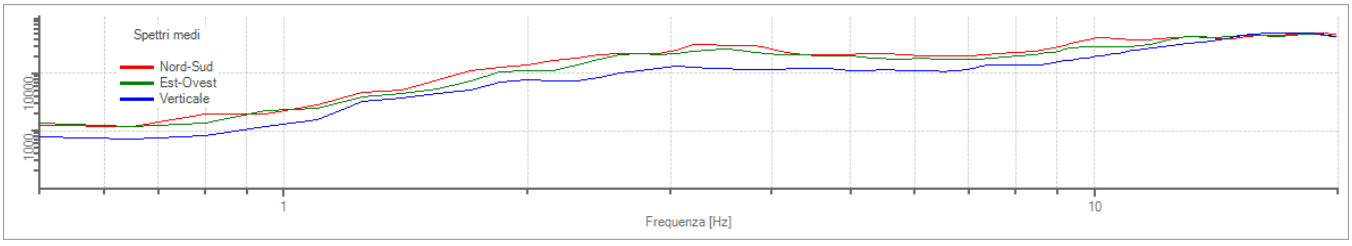
Riferimento misura: **HVSR Quercegrossa_3**
File saf: **MT_20220615_101431.SAF**
Durata delle registrazione min.: **30**
Frequenza di campionamento: **300 Hz**
Lunghezza delle finestre: **30 s**
N° finestre selezionate: **20**
Tipo di lisciamento: **coseno**
Lisciamento:10**%**
Picco H/V **: f_0 = 3.35 hz, A_0=2.38**

Ubicazione prova

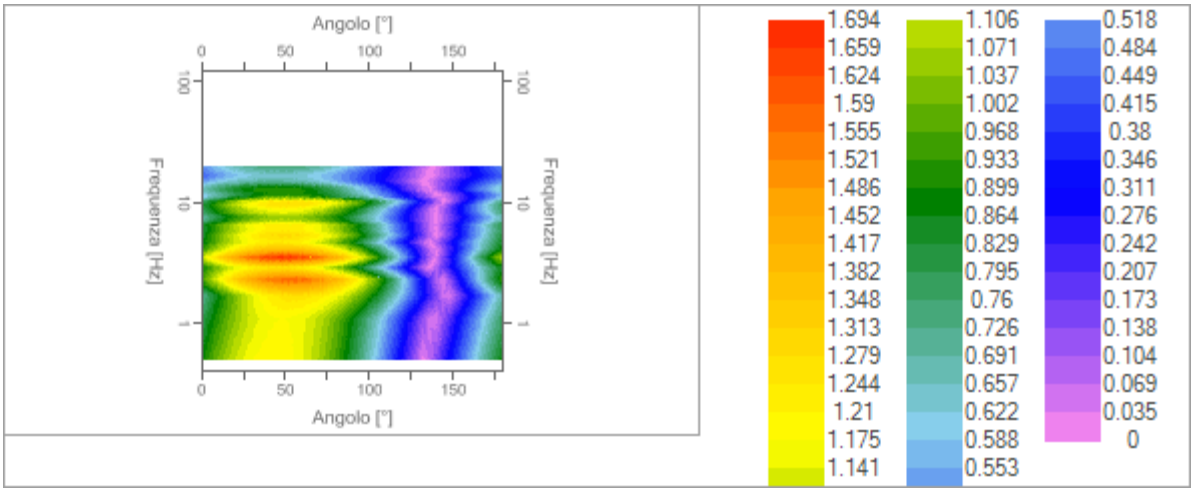
Curva HVSR



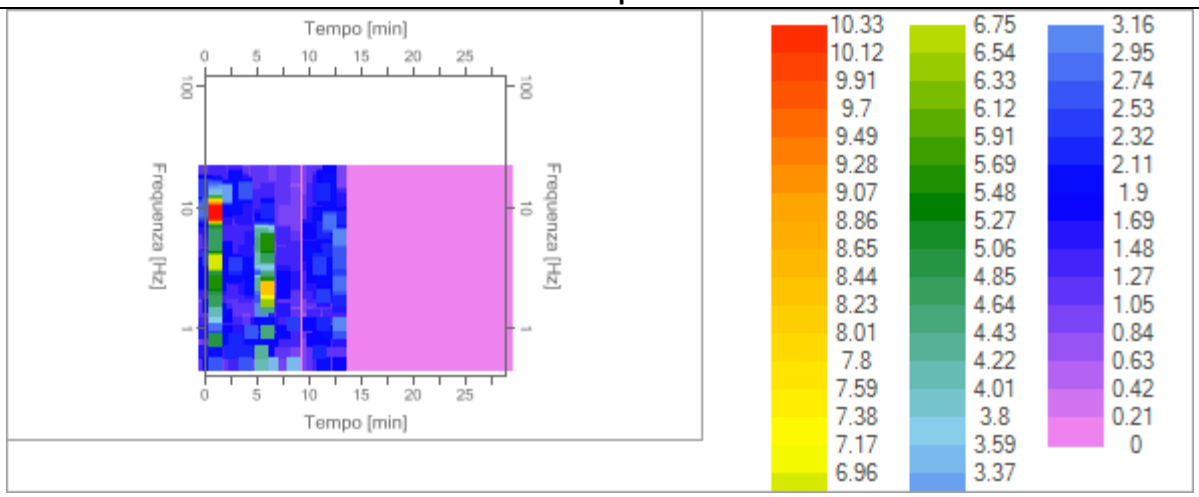
Spettri delle singole componenti



Direzionalità



Serie temporale



Picco H/V a3.35±0.52 Hz (nell'intervallo 0.5 -20 Hz) **Criteri per una curva H/V affidabile** (Tutti e tre i criteri devono essere soddisfatti)	
Verifica	**Esito**
$f_0 > 10/l_w$	**Ok**
$n_c(f_0) > 200$	**Ok**
$\sigma_A(f) < 2 \quad per \quad 0.5 \cdot f_0 < f < 2 \cdot f_0 \quad se \quad f_0 > 0.5Hz$ $\sigma_A(f) < 3 \quad per \quad 0.5 \cdot f_0 < f < 2 \cdot f_0 \quad se \quad f_0 < 0.5Hz$	**Ok**
Criteri per un picco H/V chiaro **(Almeno cinque criteri su sei devono essere soddisfatti)**	
$\exists f^- \in [f_0/4, f_0] \mid A_{H/V}(f^-) < A_0/2$	**NO**

$\exists f^+ \in [f_0, 4 \cdot f_0] \mid A_{H/V}(f^+) < A_0/2$	**Ok**
$A_0 > 2$	**Ok**
$f_{picco}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	**Ok**
$\sigma_f < \varepsilon(f)$	**Ok**
$\sigma_A(f_0) < \theta(f_0)$	**Ok**

Legenda

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
$\sigma_{logH/V}(f)$	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 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 $\sigma_{logH/V}(f_0)$	0.48	0.40	0.30	0.25	0.20