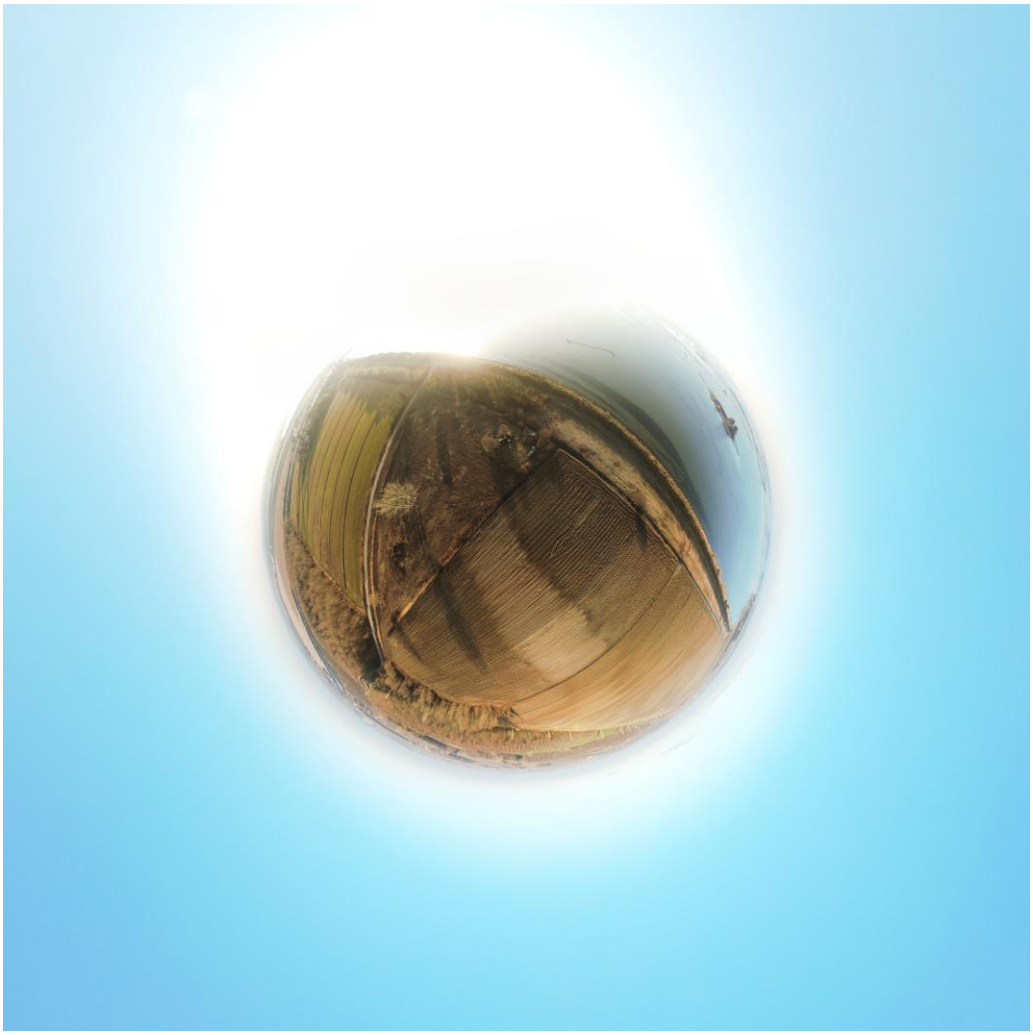

HVSR computation in winMASW® and HoliSurface®

DOUBLE-PICK CURVE

www.winmasw.com

winMASW® & *HoliSurface*®: Horizontal-to-Vertical Spectral Ratio

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HOLI3C geophone - SN: 272232-04

Dataset: 2020-02-14_15-22_secondDUNE.seg2

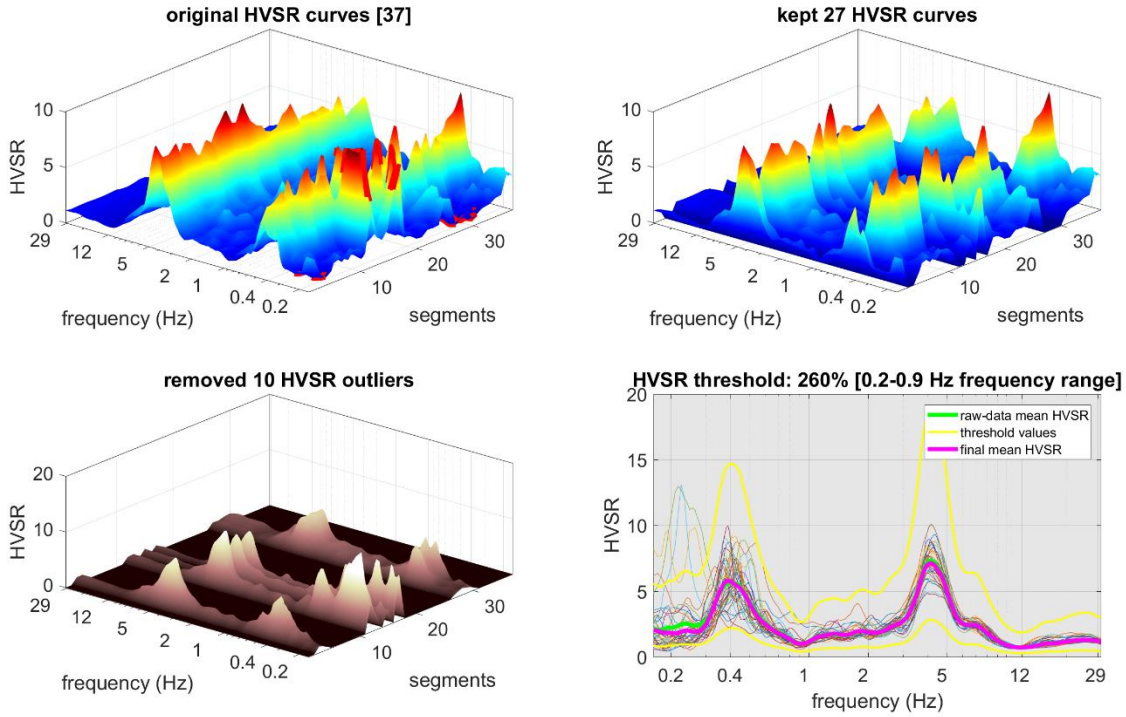
DATA PROCESSING
Date: 15 2 2020
Time: 13 37
Sampling frequency (Hz): 64
Window length (sec): 60
HVSR computation: quadratic mean
Minimum frequency soundly determined [10 cycles]: 0.16667Hz
Length of analysed dataset (min): 21.6
Tapering (%): 5
Linear Smoothing (%): 15

############################ **SESAME criteria**
Results considering the data in the 0.2-0.9 Hz frequency range
Peak frequency (Hz): 0.4 (±0.0)
Peak HVSR value: 5.8 (±0.9)

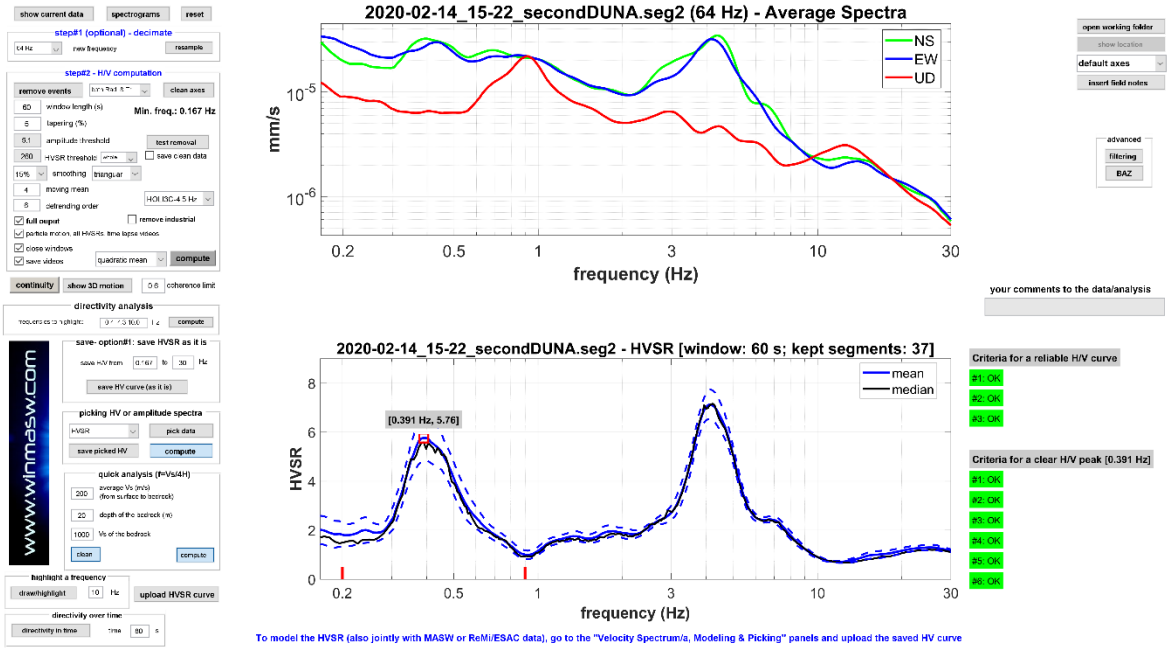
== Criteria for a reliable H/V curve ==========
#1. [f0 > 10/Lw]: 0.391 > 0.16667 (OK)
#2. [nc > 200]: 867 > 200 (OK)
#3. [f0<0.5Hz; sigmaA(f) < 3 for 0.5f0 < f < 2f0] (OK)

== Criteria for a clear H/V peak (at least 5 should be fulfilled) ==========
#1. [exists f- in the range [f0/4, f0] | AH/V(f-) < A0/2]: yes, at frequency 0.1Hz (OK)
#2. [exists f+ in the range [f0, 4f0] | AH/V(f+) < A0/2]: yes, at frequency 0.2Hz (OK)
#3. [A0 > 2]: 5.8 > 2 (OK)
#4. [fpeak[Ah/v(f) ± sigmaA(f)] = f0 ± 5%]: (OK)
#5. [sigmaf < epsilon(f0)]: 0.038 < 0.078 (OK)
#6. [sigmaA(f0) < theta(f0)]: 1.047 < 2.5 (OK)

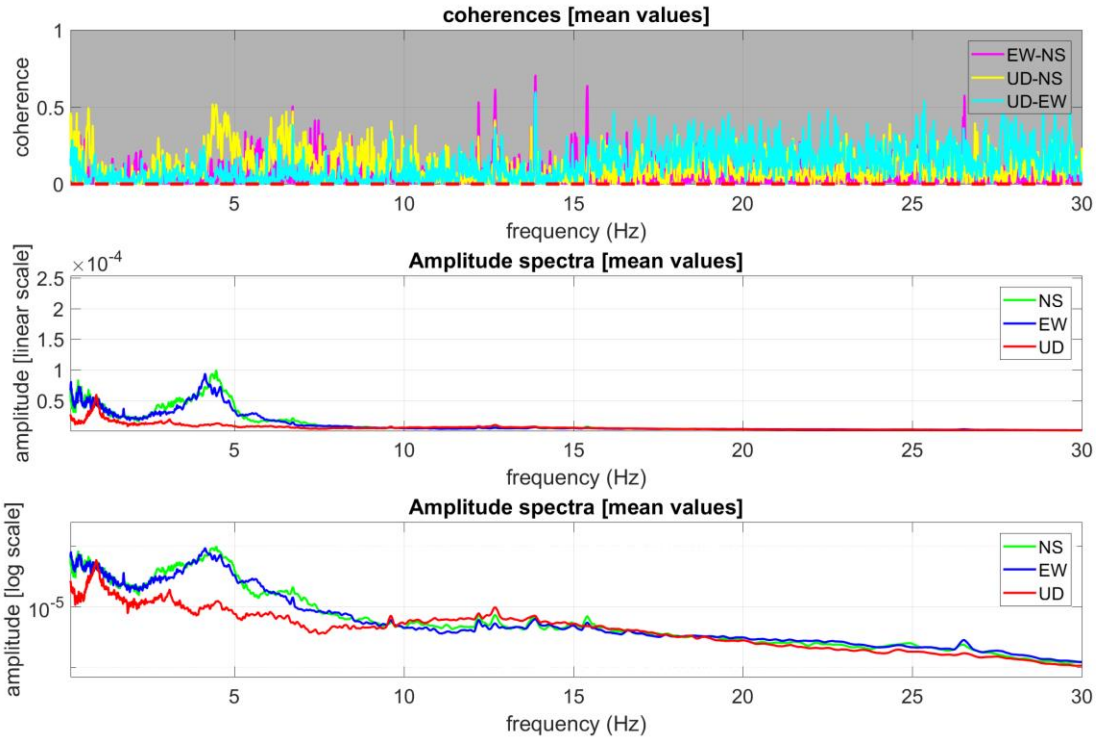
Please, be aware of possible industrial/man-induced peaks or spurious peaks due to meaningless numerical instabilities.
Remember that SESAME criteria should be considered in a flexible perspective and that if you modify the processing parameters the results may change.



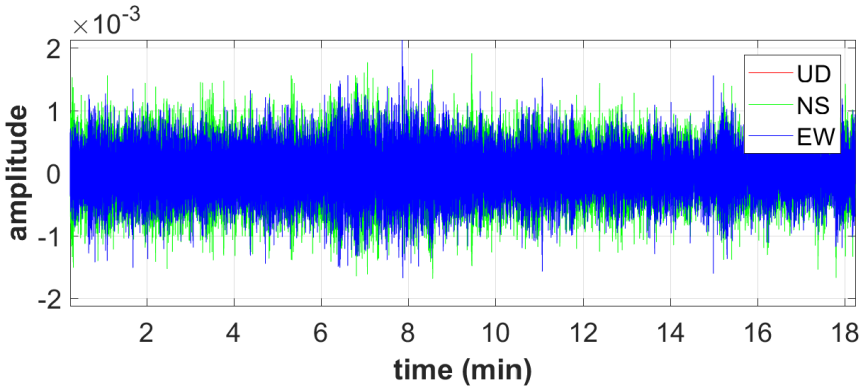
Removal of the outlier HVSR curves

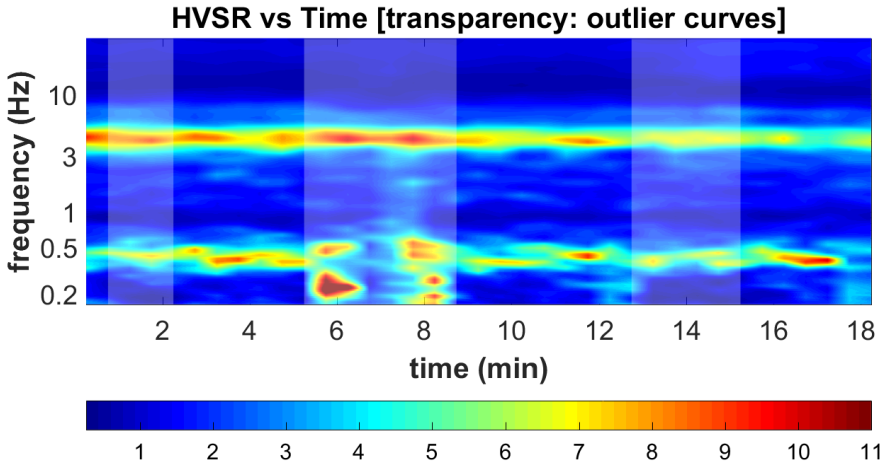


Both peaks satisfy the SESAME criteria for a reliable peak. The high-frequency peak is due to the contact between peats and sand-like sediments, the low-frequency peak refer to the deep (several hundreds of meters) bedrock.

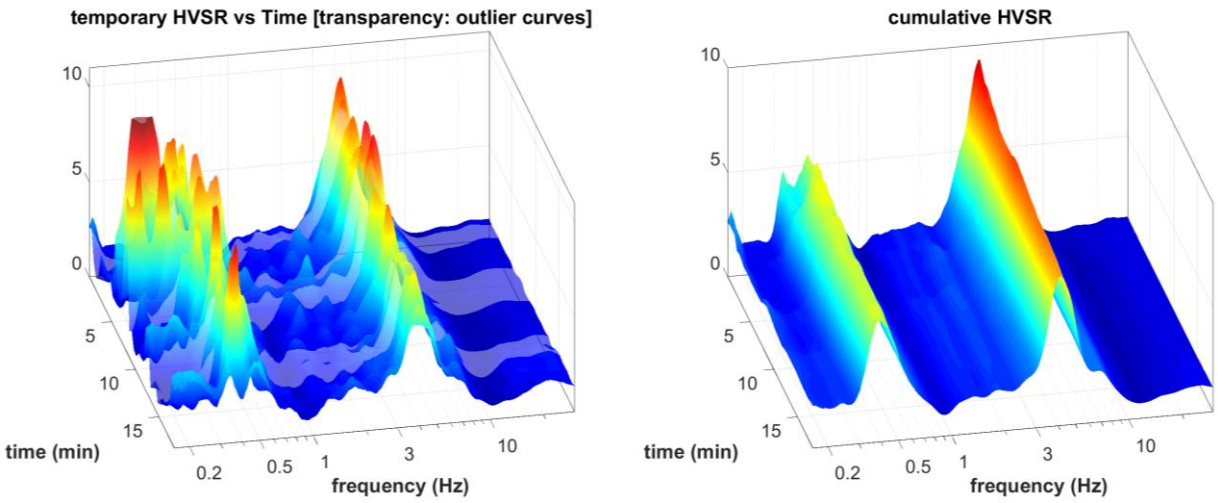


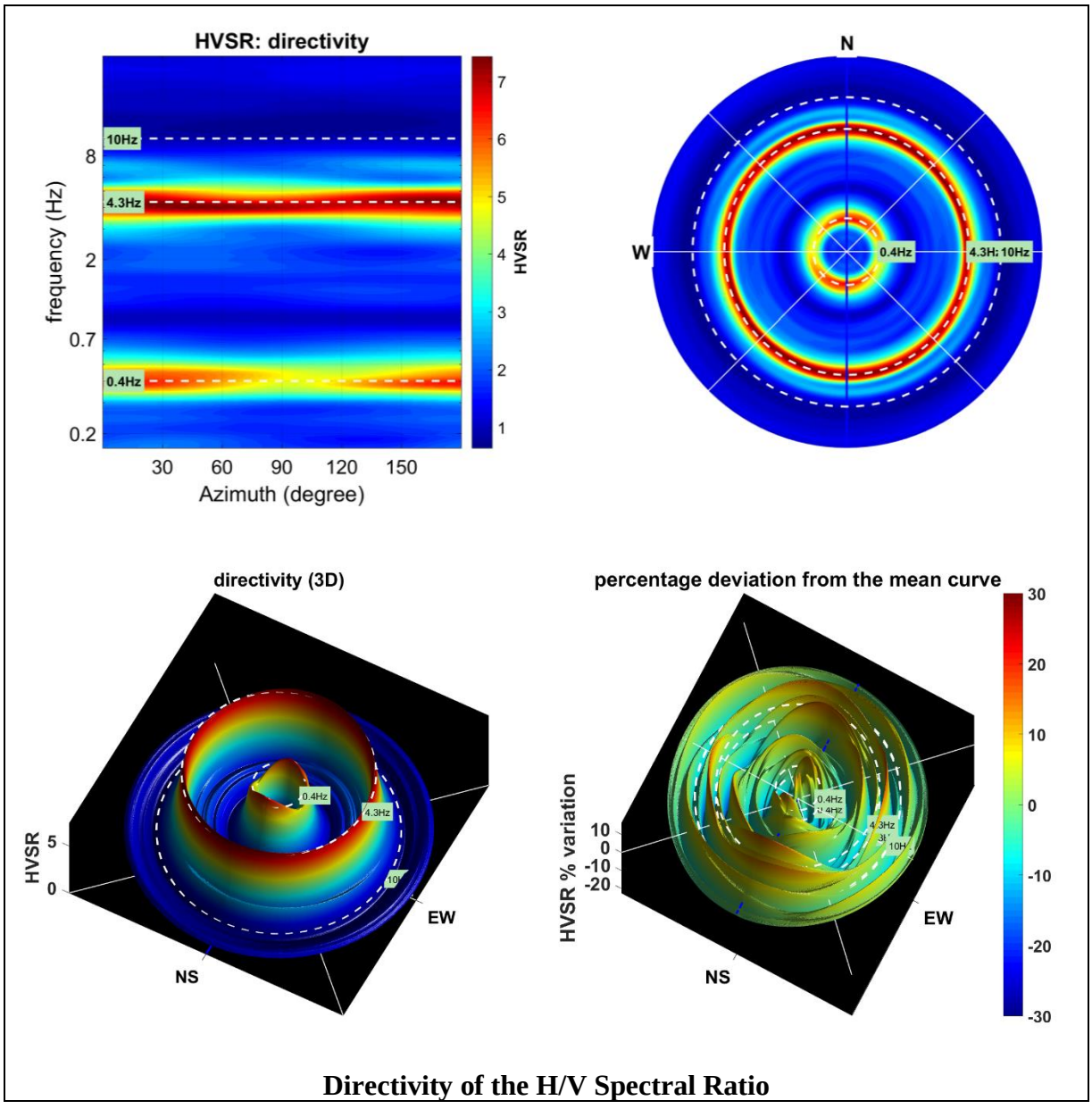
No evidence of significant industrial signals/components (see Dal Moro, 2020).





Continuity of the H/V Spectral Ratio





Directivity of the H/V Spectral Ratio

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