

## Technologies for seismology, engineering and geophysics

The GeoExplorer suite includes various modules for recording and processing geophysical data.

Designed to be fully integrated with our tools, it provides high interoperability between the various modules for cross-checking of modeling and various tools for data quality control.

The GE HVSR module, thank to its complete synergy with GE LOG MT and the GeoBox seismograph, allows complete control over the dataset to be processed, also generating various 1D models.

For more information: [www.sara.pg.it](http://www.sara.pg.it) or [info@sara.pg.it](mailto:info@sara.pg.it)

◆ Recording data with GE LOG MT allows the calculation of HVSR in the field for data quality control and minimizes the risk of unprocessable datasets.

The Ge HVSR software provides complete freedom in the processing of the recorded data, allowing t to select the length of the windows and the HVSR peak.

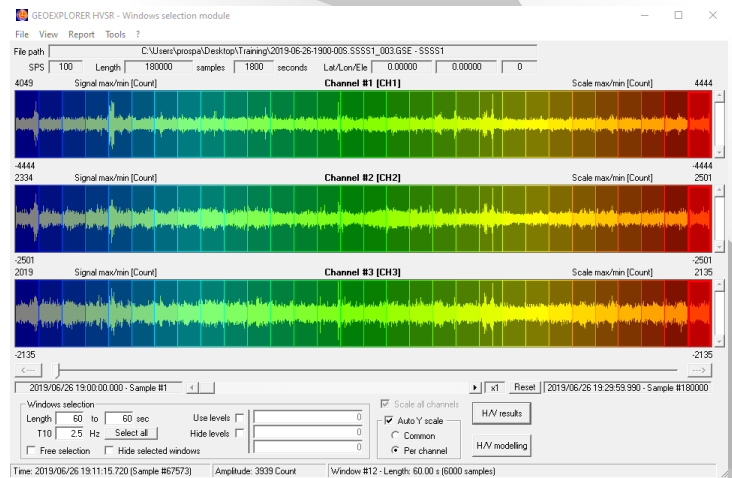
There is the possibility to use different parameters for the HVSR curve calculation, to perform an ACOUSTIC analysis of the data, and to evaluate the absolute spectra of individual channels, as well as the ability to compare the experimental curve with other HVSR curves.

**THE GE HVSR IS THE FIRST SOFTWARE TO PROPOSE THE QUALITATIVE ACOUSTIC ANALYSIS OF SEISMIC SIGNALS.**  
Through the seismic signal sonification technique, it is easy to discriminate the presence of anthropogenic noises that could potentially be harmful to the investigation.

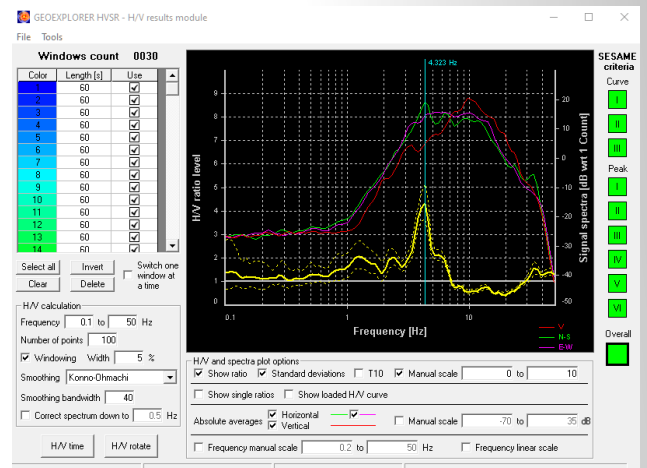
Saving the dataset and work status allows for different processing and interpretation flows, allowing backups at various steps.

◆ The software allows the processing of data by verifying possible stratigraphies and comparing the synthetic curve with the experimental data.

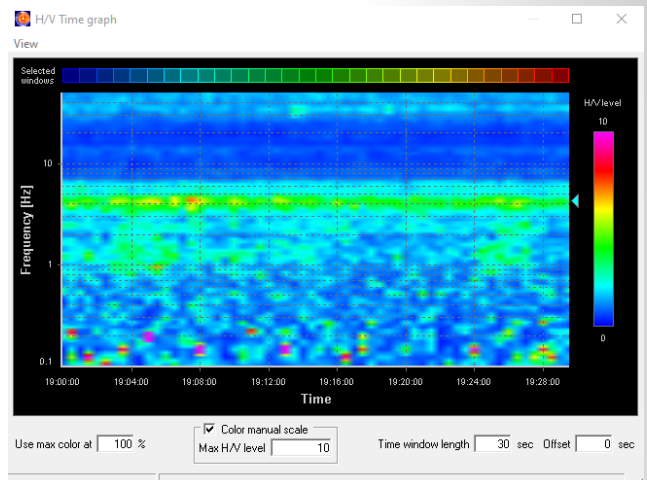
◆ The GeoExplorer suite requires a Windows PC.



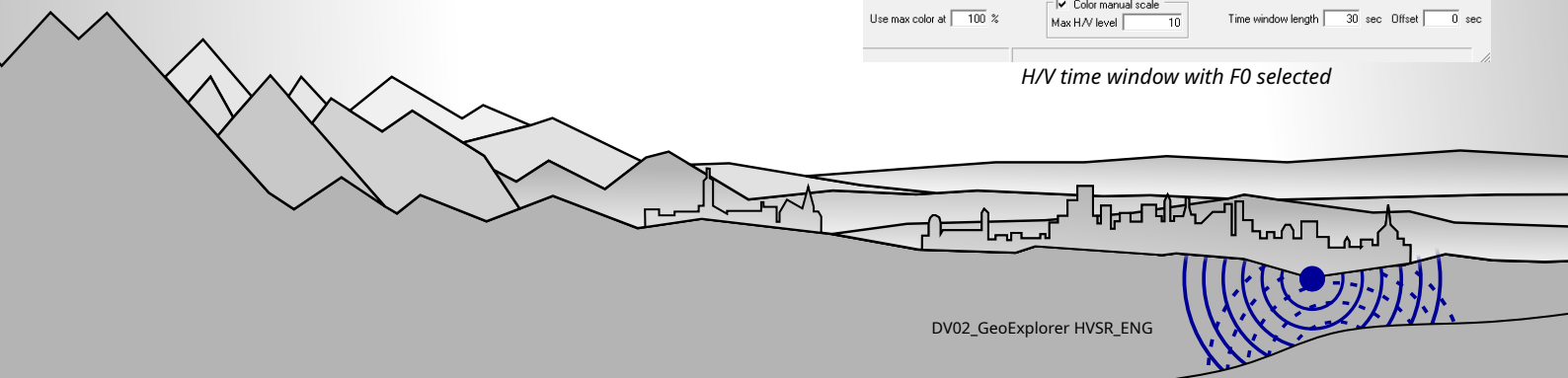
Software main windows for HVSR windows selection



HVSR window with F0 selection and SESAME criteria validation



H/V time window with F0 selected



### Pre-processing dataset and quality check:

- Dataset sonification for transient identification
- Bookmarks for transients

### Dataset processing

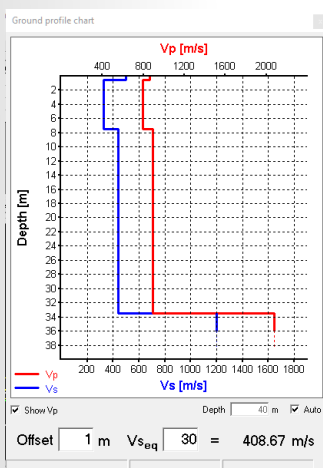
- Min and max window length customization
- T10 visualization on HVSR
- Automatic window selection
- Amplitude threshold for automatic window selection
- Manual window selection
- Enable/disable windows
- Manual window repositioning (sample by sample)
- Selection of frequency range for HVSR calculation
- Selection of smoothing mode
- Correction of dataset with instrument response
- Verification of SESAME parameters on selected f0
- Multiple peak selection
- Work save and backup

### Modeling:

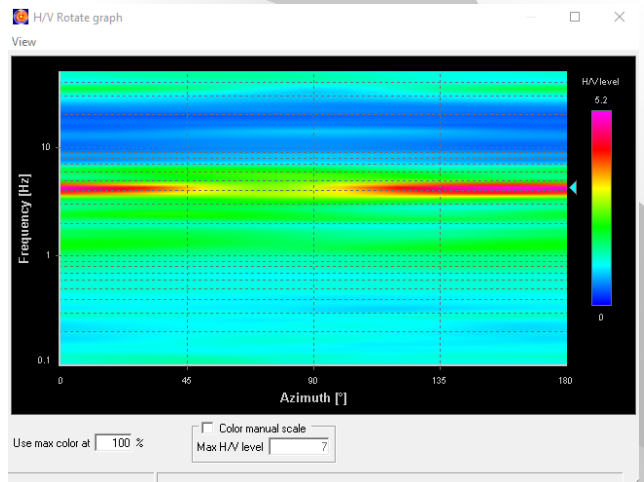
- Stratigraphic modeling
- Computation of Poisson's r from Vp and Vs stratigraphy
- Synthetic HVSR computation from stratigraphy
- Vs30 and VsEquivalent calculation
- Compatibility with Geopsy\* (file .hv) for HVSR curve
- Comparison between various HVSR curves

The module does not require third-party software for graphical representations and it is possible to export each single image and table displayed. The supported formats are:

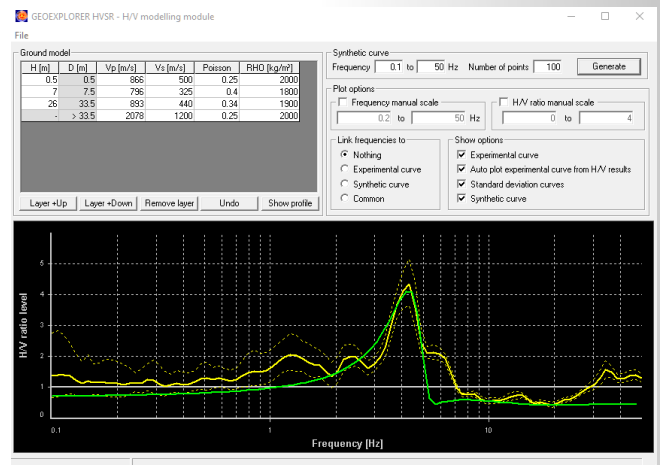
- .saf
- .gse
- .seg
- .dat



Vs30, Vs Equivalent and stratigraphy window



H/V orientation window with F0 selected



Modeling window with stratigraphy and synthetic HVSR curve

SARA electronic instruments s.r.l. is constantly looking for new solutions, implementations and optimizations for the GeoExplorer Suite, providing a high level of customer support and gathering customer feedback for the Suite improvement.

\*Geopsy is an open source product (GPL) available for download at [www.geopsy.org](http://www.geopsy.org).

*Notice! This paper is an information leaflet only; it is published without programmed updates. All specifications, features and prices are subjected to changes without any prior notice. In the event of any discrepancies between this document and a commercial offer or bidding document, these latter will take precedence.*

