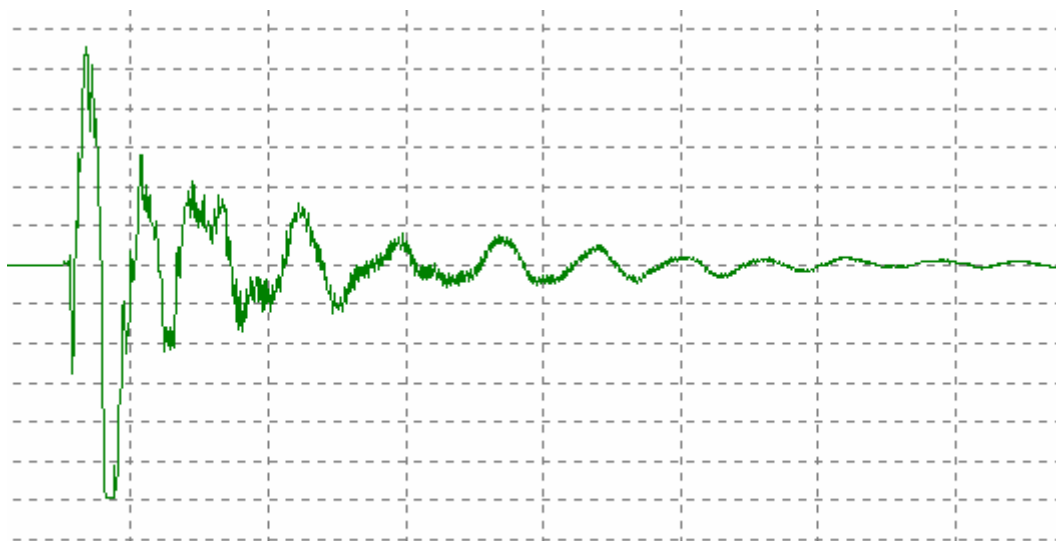


Geotech

SCPT-ANALYSIS

User's Manual



VERSION 1.0

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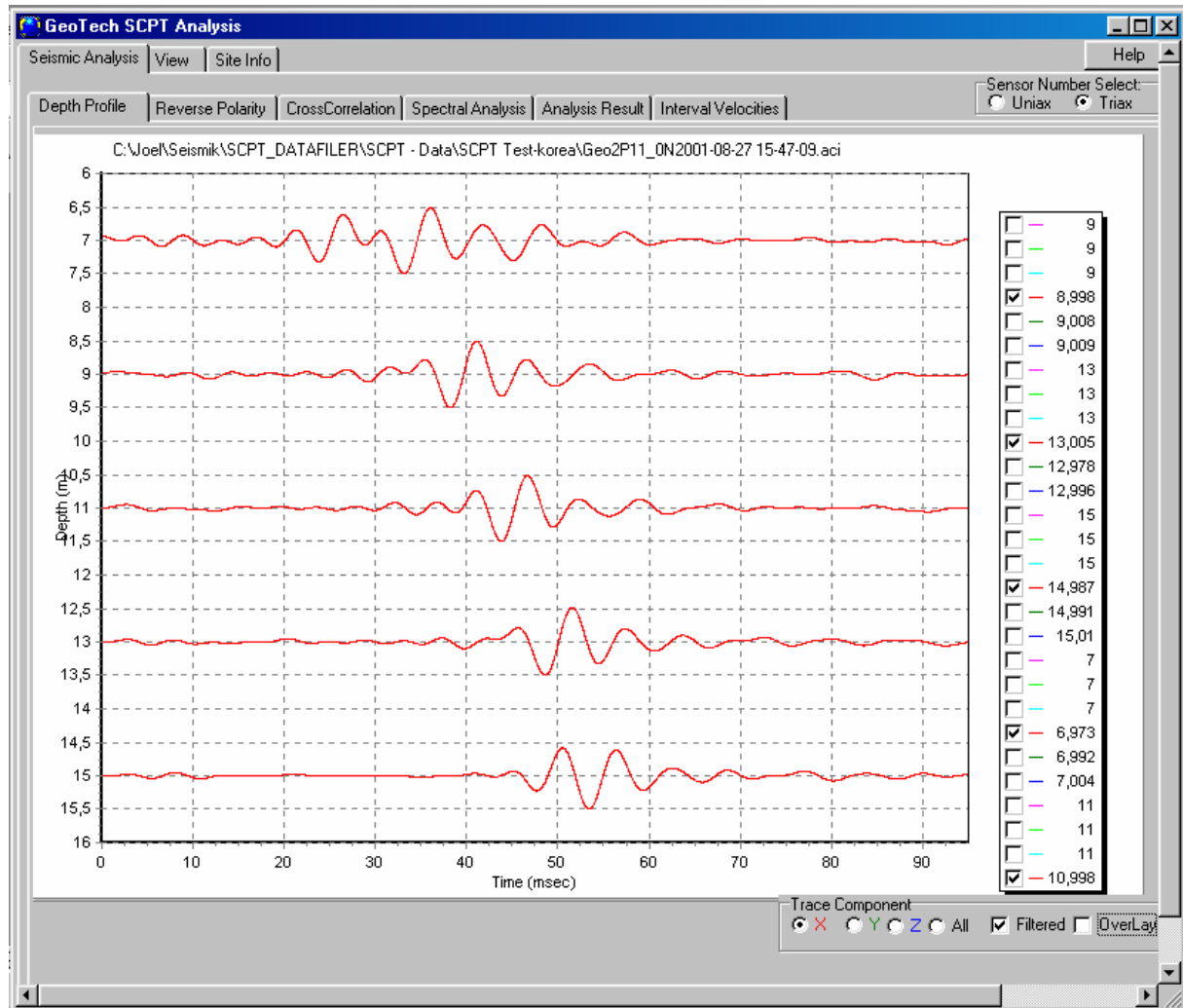
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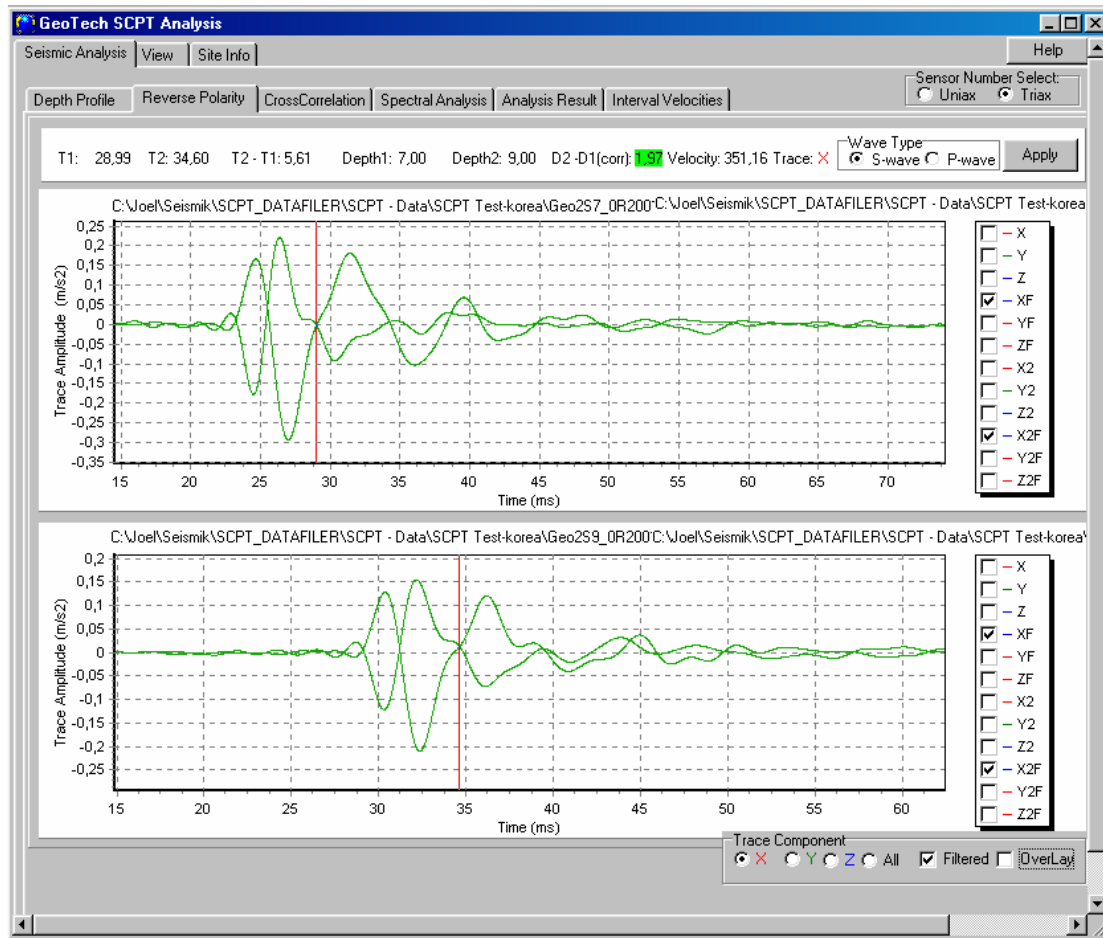
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Depth Profile



The depth profile sheet is used for viewing seismic traces at different depths. To read seismic data from a file, click on the right mouse button and choose "Read Traces". Several files can be loaded in the same time.

Reverse Polarity



”Reverse Polarity” is a method for calculating the wave velocity between two depths. In this option the user specifies four seismic data files to be processed, two files with different polarization from each depth.

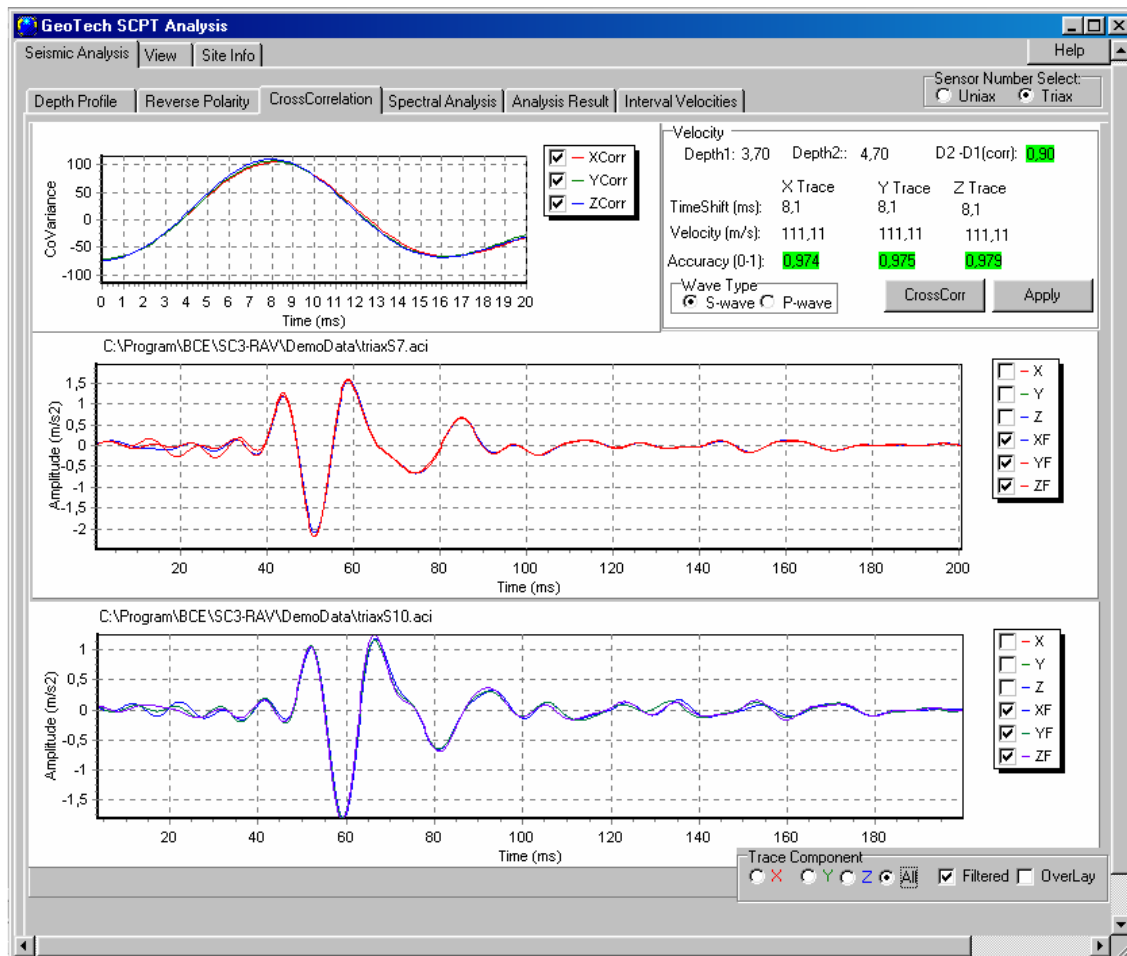
Loading files

To load files for the upper depth, move the mouse pointer to the upper graph window, click on the right mouse button and select “Read Traces”. Use the mouse and the “Control”-button to select two files from the same depth, one left polarized and one right polarized. The two traces will both appear in the upper graph window. To change the filter characteristics, click on the right mouse button and choose “Refilter”. Follow the instructions in the “Spectral Analysis” chapter to change the filter characteristics and press “Apply” to activate the new settings. To load files for the lower depth, move the mouse pointer to the lower graph window and follow the same procedure.

Calculating velocity

Move the red cursor in the upper graph window to a point where the two traces cross each other. Move the cursor in the lower graph to the same point for the lower depth. The difference in time, the difference in distance and the wave velocity between the two depths is now displayed in the top of the window. Press “Apply” to store the result in the Analysis Result sheet.

CrossCorrelation



”CrossCorrelation” is another method for calculating the wave velocity between two depths. In this option the user specifies only two seismic data files to be processed, one file with from each depth. The files should have the same polarization.

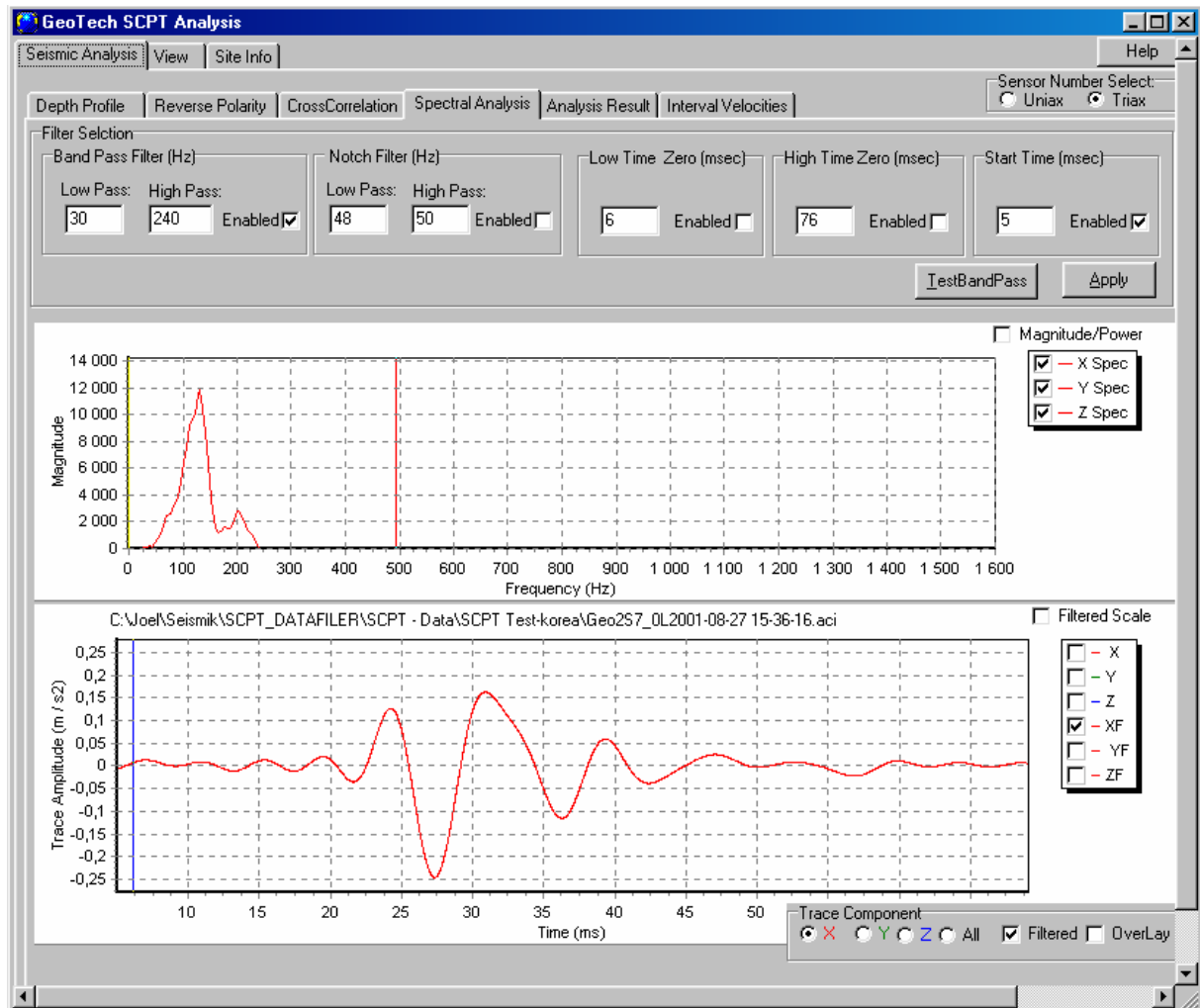
Loading files

To load the data file for the upper depth, move the mouse pointer to the upper graph window, click on the right mouse button and select “Read Traces”. Select a file and click “Open”. The trace will appear in the upper graph window. To change the filter characteristics, click on the right mouse button and choose “Refilter”. Follow the instructions in the “Spectral Analysis” chapter to change the filter characteristics and press “Apply” to activate the new settings. To load the data file for the lower depth, move the mouse pointer to the lower graph window and follow the same procedure.

Calculating velocity

The difference in time, the difference in depth and the wave velocity between the two depths is calculated automatically and displayed in the upper right corner. If the filter characteristics are changed after the first calculation, press “CrossCor” to update the values. Press “Apply” to store the result in the Analysis Result sheet.

Spectral Analysis



The "Spectral Analysis" function is used for filtering seismic data.

Loading a file

Move the mouse pointer to the lower graph window, click on the right mouse button and choose "Read Traces". Choose a file and click "Open". The file will appear in the lower graph window.

Setting filter characteristics

In the upper graph window a frequency spectra is displayed. Use the blue cursor to set the lower filter frequency and the red cursor to set the upper filter frequency. The cursors in the lower graph window are used for masking irrelevant data. The blue cursor sets the lower level and the red cursor sets the upper level. All values can also be entered directly in the text boxes in the top of the window. Press "Apply" to activate the new filter settings.

Analysis Result

GeoTech SCPT Analysis

Seismic Analysis | View | Site Info | Help

Sensor Number Select:
☐ Uniax
☒ Triax

Depth Profile | Reverse Polarity | CrossCorrelation | Spectral Analysis | Analysis Result | Interval Velocities

General

Operator: GeoTech Staff Projekt: ProjektEdit Date: DateEdit BoreHole No: BoreHoleEdit Site Name: Askim Source Type: SledgeHammer

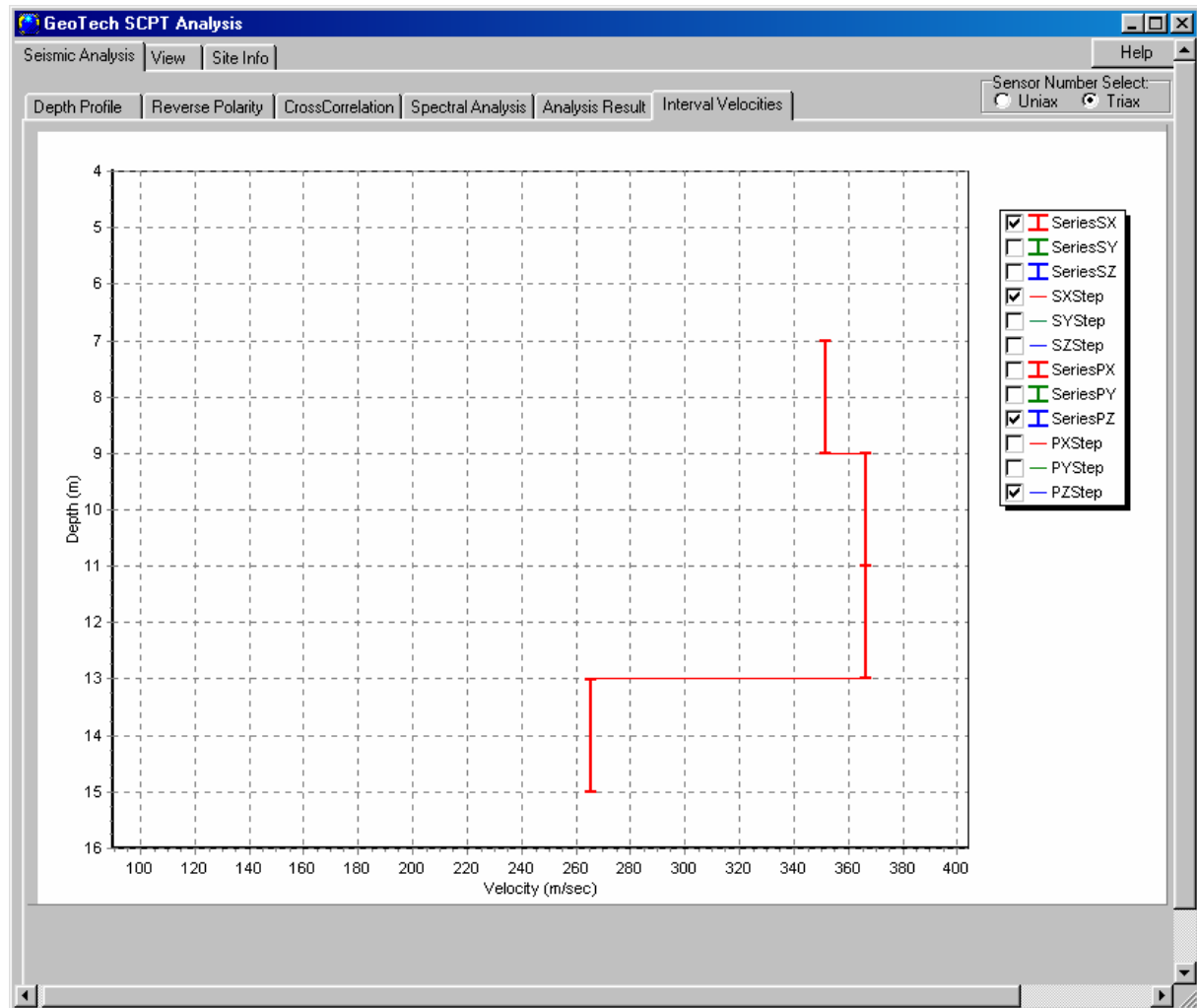
Site Notes:
 Site Conditions: Soil Conditions: Special Notes:

Trace	Depth1(m)	Depth2(m)	WaveType	D2-D1(c)	Interv.Time(n)	Interv.Vel(m)	Accuracy	BPHigh(Hz)	BPLow(Hz)	D1FileName	D2FileName
X	7,00	9,00	S	1,97	5,6	351,79	0,951	336	30	C:\Joel\Seismik\SCPT_01	C:\Joel\Seismik\SCPT_02
Y	7,00	9,00	S	1,97	5,0	394,00	0,624	336	30	C:\Joel\Seismik\SCPT_01	C:\Joel\Seismik\SCPT_02
Z	7,00	9,00	S	1,97	1,0	340,62	0,376	336	30	C:\Joel\Seismik\SCPT_01	C:\Joel\Seismik\SCPT_02
X	9,00	11,00	S	1,98	5,4	366,67	0,920	336	30	C:\Joel\Seismik\SCPT_01	C:\Joel\Seismik\SCPT_02
Y	9,00	11,00	S	1,98	5,1	388,24	0,507	336	30	C:\Joel\Seismik\SCPT_01	C:\Joel\Seismik\SCPT_02
Z	9,00	11,00	S	1,98	2,1	342,86	0,695	336	30	C:\Joel\Seismik\SCPT_01	C:\Joel\Seismik\SCPT_02
X	11,00	13,00	S	1,98	5,4	366,67	0,931	336	30	C:\Joel\Seismik\SCPT_01	C:\Joel\Seismik\SCPT_02
Y	11,00	13,00	S	1,98	5,4	366,67	0,641	336	30	C:\Joel\Seismik\SCPT_01	C:\Joel\Seismik\SCPT_02
Z	11,00	13,00	S	1,98	0,4	345,83	0,523	336	30	C:\Joel\Seismik\SCPT_01	C:\Joel\Seismik\SCPT_02
X	13,00	15,00	S	1,99	7,5	265,33	0,980	336	30	C:\Joel\Seismik\SCPT_01	C:\Joel\Seismik\SCPT_02
Y	13,00	15,00	S	1,99	7,5	265,33	0,922	336	30	C:\Joel\Seismik\SCPT_01	C:\Joel\Seismik\SCPT_02
Z	13,00	15,00	S	1,99	2,7	296,04	0,631	336	30	C:\Joel\Seismik\SCPT_01	C:\Joel\Seismik\SCPT_02

SaveAnalysis ReadAnalysis Apply Velocities Clear Result

The results from the calculations are displayed in the “Analysis Result” sheet. The results can be saved by clicking the “Save Analysis”-button and old analyses can be opened by clicking “Read Analysis”. The button “Apply Velocities” transfers the velocity data to the “Interval Velocities” diagram.

Interval Velocities



The Interval Velocities diagram displays the wave velocities on different depths. The diagram is updated from the “Analysis Result” sheet.