XERIS (CROSS-PLATFORM ELECTRICAL RESISTIVITY IMAGING SOFTWARE)

What is Xeris?
Xeris is software project that provides tools for collection and processing of electrical resistivity imaging data. Project consists of Xeris software, supported instruments' firmware and controlling software. Xeris software is GUI application that is used by operator. Instruments firmware and controlling software are used by supported instruments.

What is difference between instrument firmware and controlling software?
Firmware provides the basic tools for interacting with the instrument's hardware. Controlling software is responsible for using these tools properly.

Which operating systems are supported by Xeris?
Windows 7/8/8.1/10 (x64), Android 5/6/7/8/9 (ARMv7), Linux (x64).

Which instruments are supported?
S48K12, S64K15.

How to connect to instrument over Wi-Fi?
Search for wireless networks and connect to network "I#N" (I: instrument name, N: serial number) using "hellothere" passphrase. Make sure that the other network connections are inactive to avoid communication problems.

How to connect to instrument over Ethernet?
To connect directly use "crossover" type Ethernet cable. Make sure that the other network connections are inactive to avoid communication problems.

How to update instrument firmware?
Get MicroSD card out of instrument, connect it to PC and write disk image ("*.firmware" file) with Win32 Disk Imager. Get MicroSD card back and update instrument controlling software (firmware does not contain it).

How to update instrument controlling software?
Download corresponding "*.bin" file to "xeris/binaries" directory, connect to the instrument over Wi-Fi or Ethernet and use "Update" button.

What do abbreviations mean?
ERI: electrical resistivity imaging.
VES: vertical electrical sounding.
RL: resistivity logging.

Which directories does Xeris use?
xeris/binaries: "*.bin" instruments controlling software files.
xeris/ertlab: "*.txt" ERTLAB sequences files saved in ELECTRE format.
xeris/exports: "*.data" ERTLAB data files, "*.csv" PROSYS II data files, "*.dat" RES2DINV data files, "*.csv" text files.
xeris/projects: "*.pro" ERI data processing projects files.
xeris/schedules: "*.erisch" ERI schedules and "*.vessch" VES files.
xeris/sessions: "*.erises" ERI sessions and "*.vesses" VES sessions files.
xeris/templates: "*.eritem" ERI templates files.

What is difference between template and schedule?
Template is a binary file that can be created or edited by Xeris only. Schedule is a text file that can be created by Xeris or manually.

How to create ERI schedule manually?
See "Example.erisch" in "xeris/schedules" directory. Schedule consists of instrument name ("S48K12"), electrodes arrangement section ("#XYZ") and quadripoles groups sections ("ABMN Schlumberger", "ABMN Dipole-Dipole"). Arrangement section contains horizontal (X and Y) positions of electrodes and their depths (Z). Quadripoles groups sections contain lists of A/B/M/N electrodes commutations.

How to specify remote electrodes in ERI schedule?
Refer to your instrument manual. For instance, S48K12 instrument has two remote electrodes "0" and "49". Remote electrodes usually have a large absolute X and/or Y positions.

How to use ERTLAB sequences?
ERTLAB sequences saved in ELECTRE format can be converted to ERI schedules files via "Design" menu.

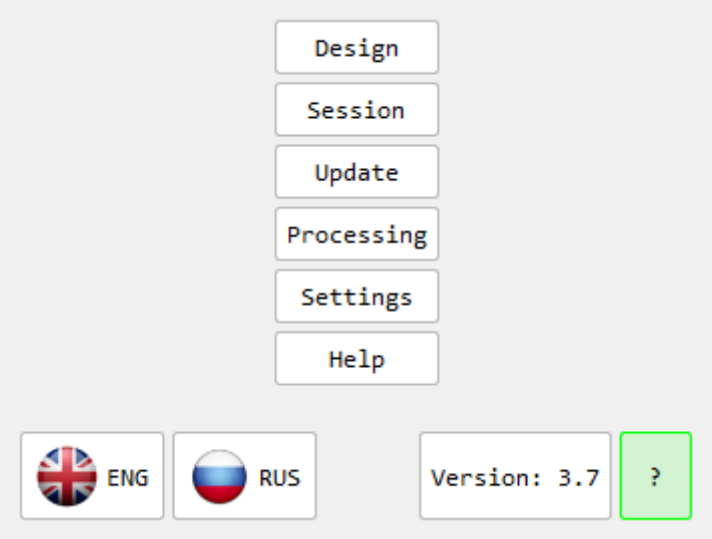
How to create VES schedule manually?
See "Example.vessch" in "xeris/schedules" directory. Schedule consists of header ("AB/2 MN/2") and two corresponding values columns.

How pseudo-depth is calculated?
Refer to the chapter "A 1-D view of the sensitivity function - depth of investigation" of "Tutorial: 2-D and 3-D electrical imaging surveys" by Dr. M. H. Loke.

Where is Xeris manual?
Xeris is self-documented software. Use the buttons with the question sign to get help.

What should I know about my instrument?
S48K12 instrument (revision HW:00) does not provide information about internal supply voltage and circuit breaker.
S48K12 instrument (revisions HW:00, HW:01) does not provide information about battery charge.

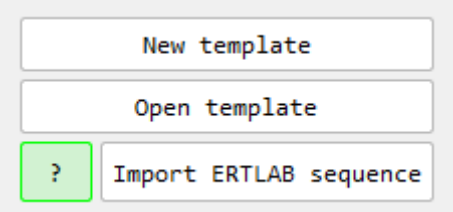
Xeris



[Design] Press to create or modify ERI templates and make ERI schedules.
[Session] Press to start working the instrument.
[Update] Press to update the instrument software.
[Processing] Press to use the data processing tools.
[Settings] Press to change Xeris software settings.
[ENG] Press to switch Xeris software language to English.
[RUS] Press to switch Xeris software language to Russian.
[Version: #.#] Press to view the software version information.

1 - DESIGN

Design

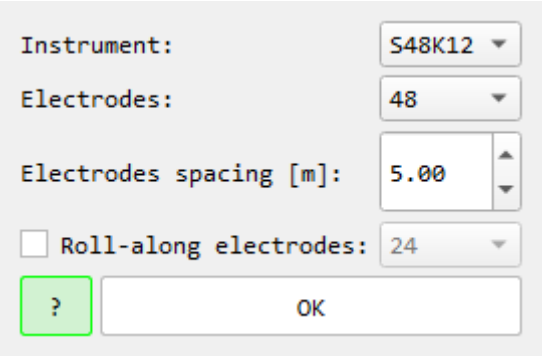


To start ERI measuring session one needs to specify the schedule that contains detailed information about electrodes arrangement and A/B/M/N electrodes commutations. Schedule is the text-based file that may be created with Xeris software or manually. To create the schedule with Xeris software one needs to create ERI template first. Template is a binary file that is created and edited with convenient tools of Xeris software. Schedule may also be created by the import of ERTLAB sequences

saved in ELECTRE format.

[New template] Press to create new template.
[Open template] Press to edit existing template.
[Import ERTLAB sequence] Press to import ERTLAB sequence.

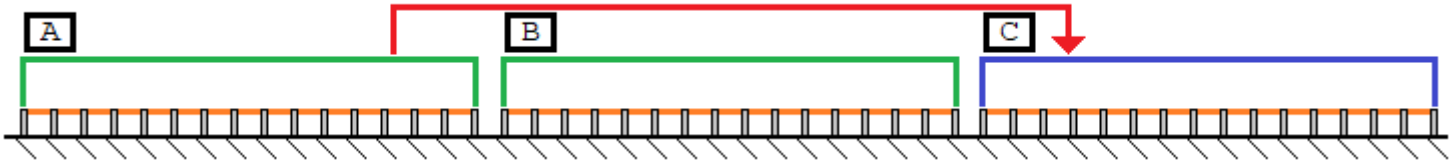
Template base



Currently templates deal only with straight-line regular electrodes arrangements. To use more complex arrangements one has to create ERI schedules ("*.erisch" files) manually. Specify template general configuration (template base).

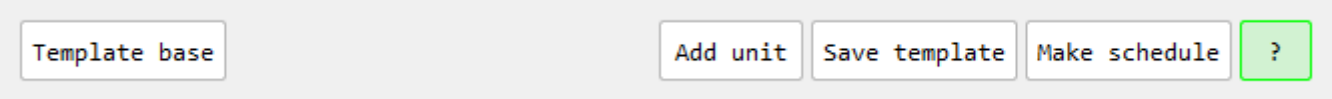
[Instrument] Specifies the instrument which must be used to work with this template.
[Electrodes] Specifies the number of cable electrodes used in this template.
[Electrodes spacing, m] Specifies the distance between adjacent electrodes.
[Roll-along electrodes] Specifies the number of electrodes that remain from the previous arrangement.

Roll-along technique uses last electrodes of previous arrangement as first electrodes of the next one. This technique is recommended to use for second and further arrangements to reduce field data collection time by dropping the duplicate measurements.



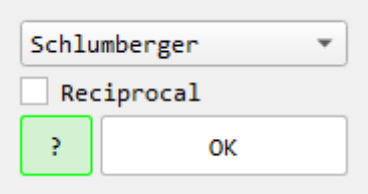
[A] First cable segment.
[B] Second cable segment.
[C] Transferred first cable segment.
[A + B] Previous arrangement.
[B + C] Next arrangement.

Template



[Template base] Press to view a template base settings.
[Add unit] Press to add one more unit to the template.
[Save template] Press to save current ERI template ("*.eritem" file) so it can be modified later.
[Make schedule] Press to make ERI schedule ("*.erisch" file) using current template. ERI template ("*.eritem" file) file will not be saved!

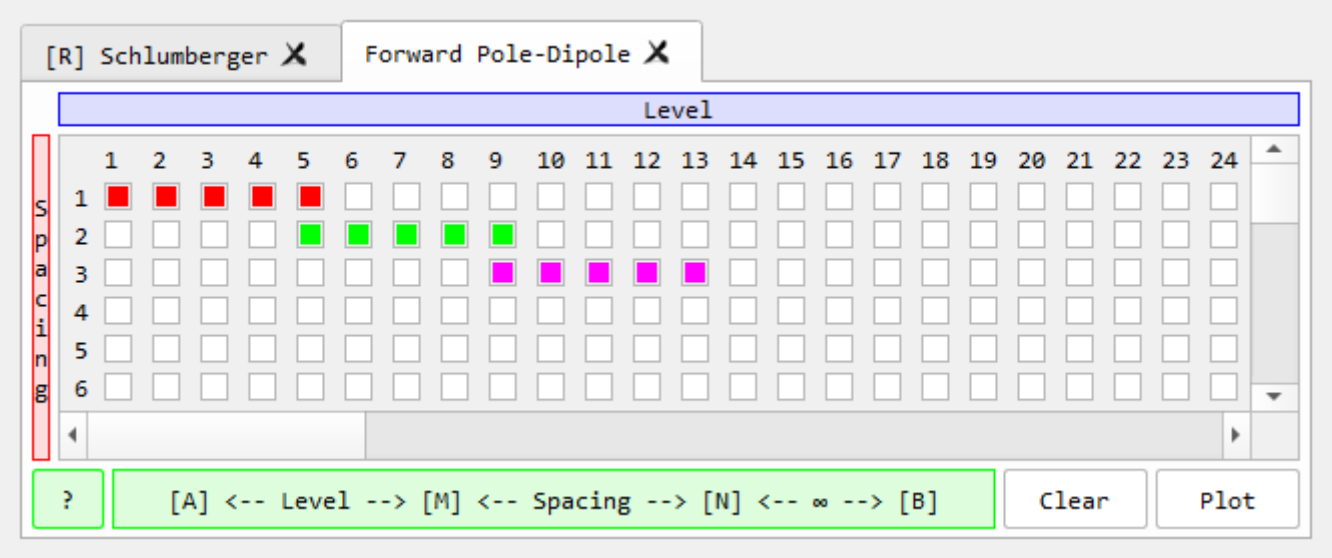
Array type



Template consists of one or several units. Every unit uses a certain array type and has its own independent "Spacing - Level" configuration. Choose an array type to use in this particular unit.

[Reciprocal] If checked, the output A/B electrodes and input M/N electrodes will be swapped to make reciprocal array.

Template unit



"Spacing - Level" parameters specify the electrodes array configurations. Check pairs of "Spacing - Level" parameters for an array used in the current unit. The array scheme is presented at the bottom.

Example 1 (Schlumberger, Spacing = 2, Level = 3):

```
A           M       N           B
|   |   |   |   |   |   |   |   |
```

Example 2 (Reciprocal Schlumberger, Spacing = 1, Level = 4):

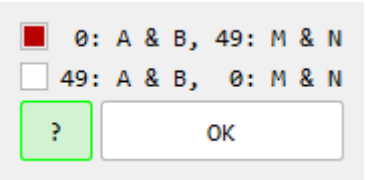
```
M               A   B               N
|   |   |   |   |   |   |   |   |   |
```

Example 3 (Dipole-Dipole, Spacing = 4, Level = 6):

```
A               B                       M               N
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |
```

[X] Press to remove the current unit from template.
[Clear] Press to clear the current unit configuration.
[Plot] Press to view a pseudo-section model for the current unit.

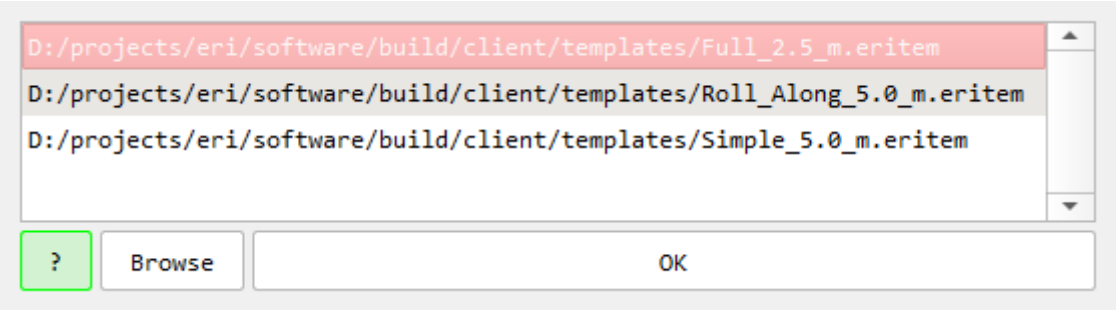
Remote electrodes



The current template applies the remote (outside of multi-wire cable) electrodes. Assign remote electrodes that will be used as output A/B electrodes and input M/N ones. Electrodes' numbers depend

on the instrument specified in the template.

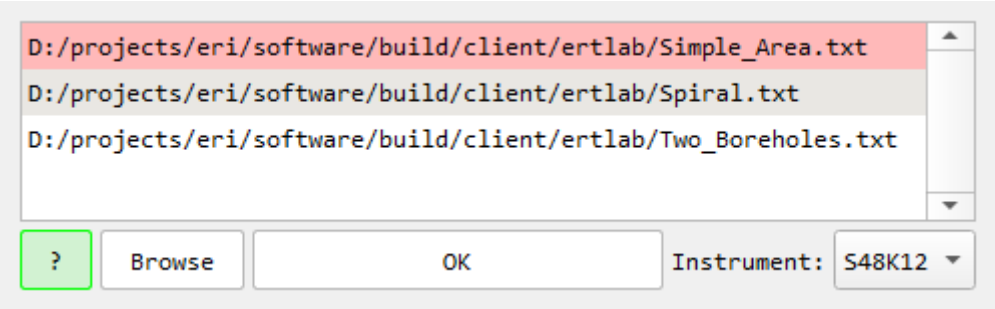
Open template



Select ERI template ("*.eritem" file) located in "templates" directory to open.

[Browse] Press to use a file browser.

Import ERTLAB sequence

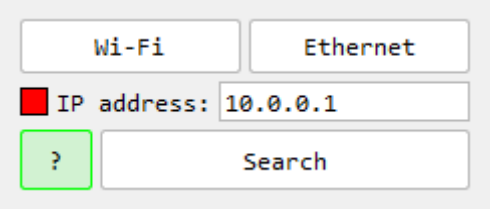


Select ERTLAB sequence ("*.txt" file) located in "ertlab" directory to import.

[Browse] Press to use a file browser.
[Instrument] Specifies an instrument which must be used to work with the selected sequence.

2 - SESSION

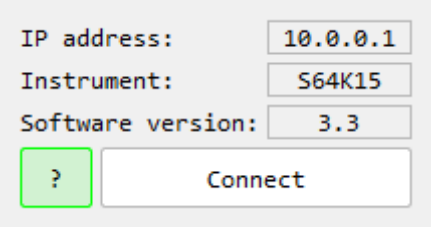
Search



Xeris software uses TCP/IP connection to operate the instruments over Wi-Fi or Ethernet. Beforehand, make sure that Wi-Fi or Ethernet connection with the instrument network was successfully established.

[Wi-Fi] Press to set a default IP address for Wi-Fi connection and search for the instrument.
[Ethernet] Press to set a default IP address for Ethernet connection and search for the instrument.
[IP address] IP address of the instrument. It can be specified manually if needed.
[Search] Press to search for the instrument using the specified IP address.

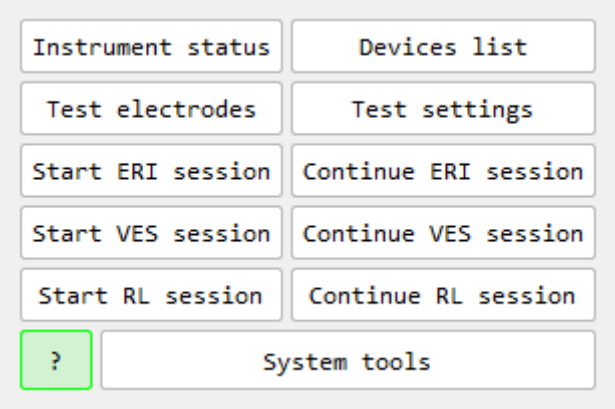
Connect



Pay attention to a software version of the instrument. Instrument software major version (number left side of "." symbol) must correspond to Xeris software major version you plan to use.

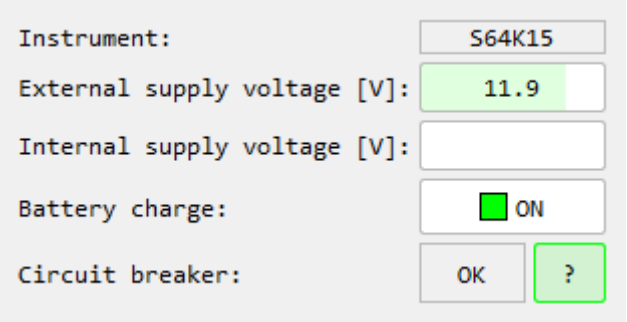
[IP address] IP address of the connecting instrument.
[Instrument] Name of the instrument found at the given IP address.
[Connect] Press to establish a connection with the instrument and get to the field data collection menu.

Session



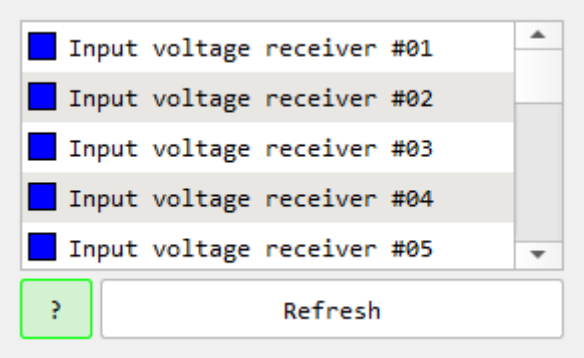
[Instrument status] Press to view the instrument current status.
[Devices list] Press to view detected devices and its firmwares.
[Test electrodes] Press to start testing electrodes groundings.
[Test settings] Press to test the instrument settings with the single measurements.
[Start ERI session] Press to start a new ERI session.
[Continue ERI session] Press to continue a saved ERI session.
[Start VES session] Press to start a new VES session.
[Continue VES session] Press to continue a saved VES session.
[Start RL session] Press to start a new RL session.
[Continue RL session] Press to continue a saved RL session.
[System tools] Press to access system tools.

Instrument status



[Instrument] Name of the currently connected instrument.
[External supply voltage, V] External (main) supply voltage status.
[Internal supply voltage, V] Internal (backup) supply voltage status. Not available when "Battery charge" is on.
[Battery charge] Charging the internal battery from the external one. Press to switch on (default state) or off.
[Circuit breaker] External supply circuit breaker status.

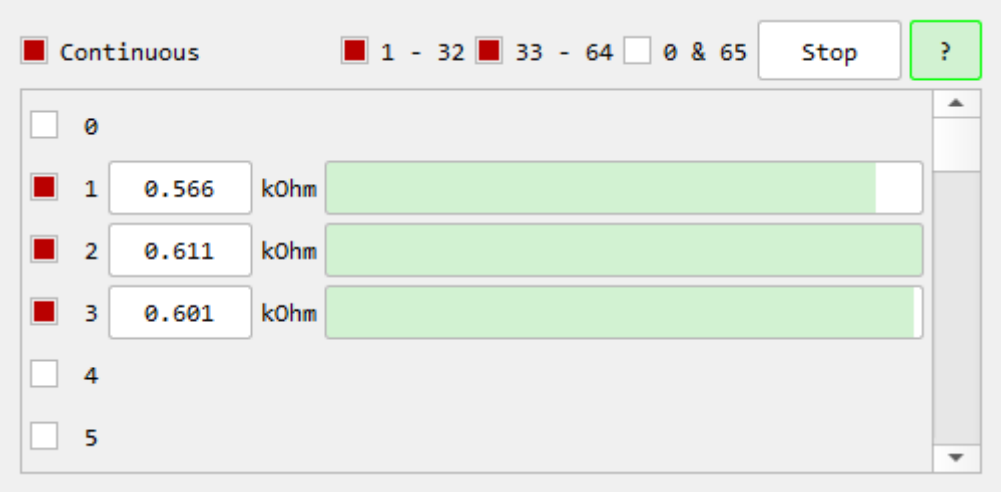
Devices list



This tool is intended for diagnostics. The blue labels shows the successfully detected devices of a currently connected instrument. The red ones indicate the devices that do not respond for some reason.

[Refresh] Press to make another attempt to detect devices.

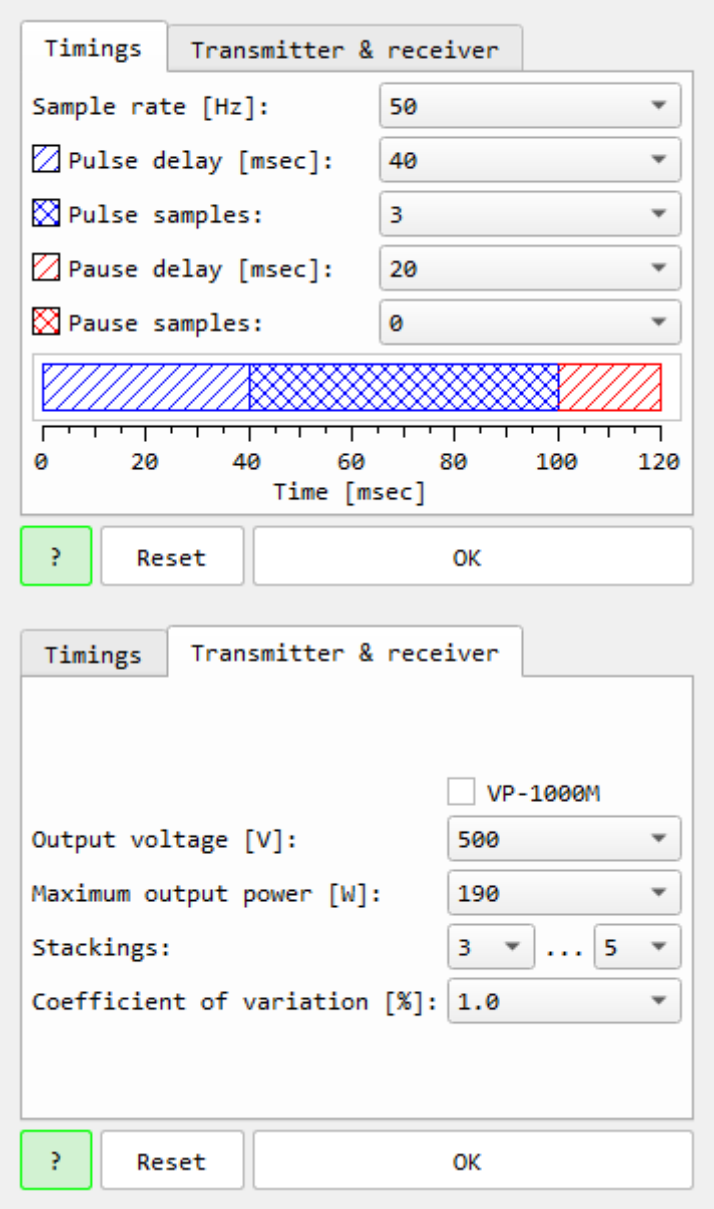
Test electrodes



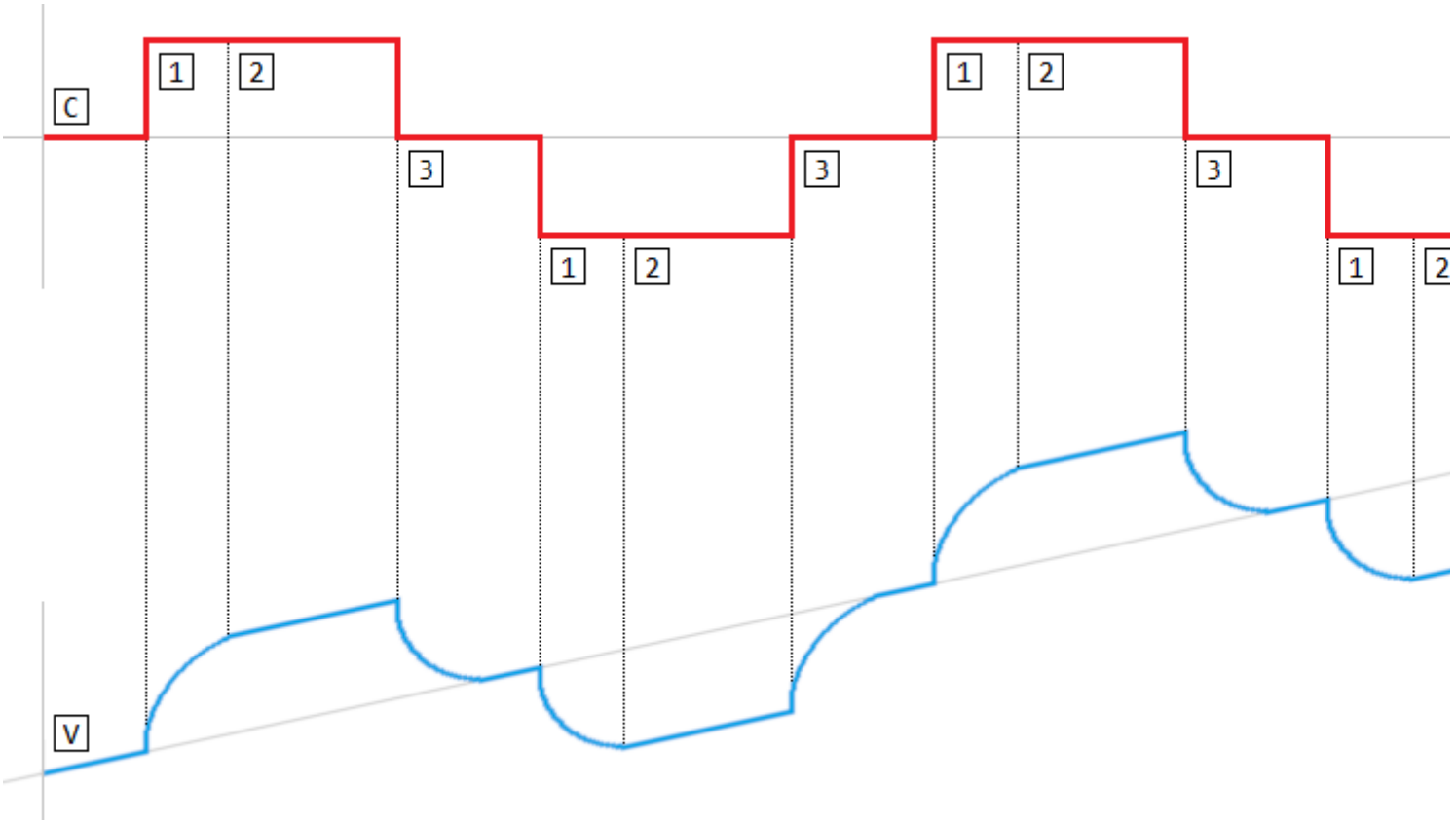
Uncheck the electrodes that must be removed from a current scope. Unchecked electrodes will not be tested. Press electrode button to test its grounding resistance. Bar style indicators will show electrodes grounding resistances relative to the current minimum and maximum limits.

[Continuous] If checked, next electrode testing starts automatically.
[Stop] Press to stop electrodes testing.
[# - #] Use to handle a group of electrodes.

Settings



Every measuring cycle consists of three sequential output pulses of variable polarity. The first measuring cycle uses "positive - negative - positive" pulse triplet, the second one uses "negative - positive - negative" triplet etc. Using three pulses per one measuring cycle instead of two eliminates both constant and linear drift of input voltage.



[C] Output current.
[V] Input voltage.
[1] Pulse delay.
[2] Pulse samples.
[3] Pause delay and samples.

Thus, input voltage can be calculated for every measuring cycle (for every pulse triplet). Resulting input voltage is calculated by averaging input voltages of every measuring cycle.

There are several parameters that control measuring process:
1. Sample rate.
2. Pulse delay.
3. Pulse samples.
4. Pause delay.
5. Pause samples.
6. Output voltage.
7. Maximum output power.
8. Stackings.
9. Coefficient of variation.

1. Sample rate.
The sample rate specifies how long it takes to make a single analog to digital conversion. Periods of 20/16.7 msec correspond to sample rates of 50/60 Hz respectively. The sample rate should be set to 50 Hz or 60 Hz depending on supply system used in the area of investigation. It is used to adjust measuring parameters for filtering of power line noise. Use appropriate sample rate depending on region!

2. Pulse delay.
The pulse delay time defines the interval from switching on current transmission until the signal integration for the resistivity measurement starts. Ideally the delay time should be long enough for the ground to become fully charged. If set to short then the charge-up effect of the ground may cause decreased data quality.

3. Pulse samples.
The pulse samples define how long the signal integration lasts for the each part of the resistivity measuring cycle. Generally, the longer the acquisition time, the better the data quality. It should

be noted, that in some countries the railway system uses a frequency of 16.7 Hz, which means that multiples of 60 msec are required. Keep in mind that such noise may be observed many kilometers or even tens of kilometers away from the railway lines.

4. Pause delay.
The pause delay time defines the interval from switching off current transmission until signal integration for the induced polarization measurement starts.
5. Pause samples.
The pulse samples define how long signal integration lasts for each part of the induced polarization measuring cycle. Choose 0 to disable the induced polarization measuring. It should be noted, that in some countries the railway system uses a frequency of 16.7 Hz, which means that multiples of 60 msec are required. Note that such noise may be observed many kilometers or even tens of kilometers away from railway lines.

6. Output voltage.
Defines the voltge that should be used for measurements. It should be selected according to site conditions (electrodes grounding, noise levels, type of electrode array) to achieve good signal-to-noise ratio and productivity. Setting the output voltage to a lower value helps to save battery power.

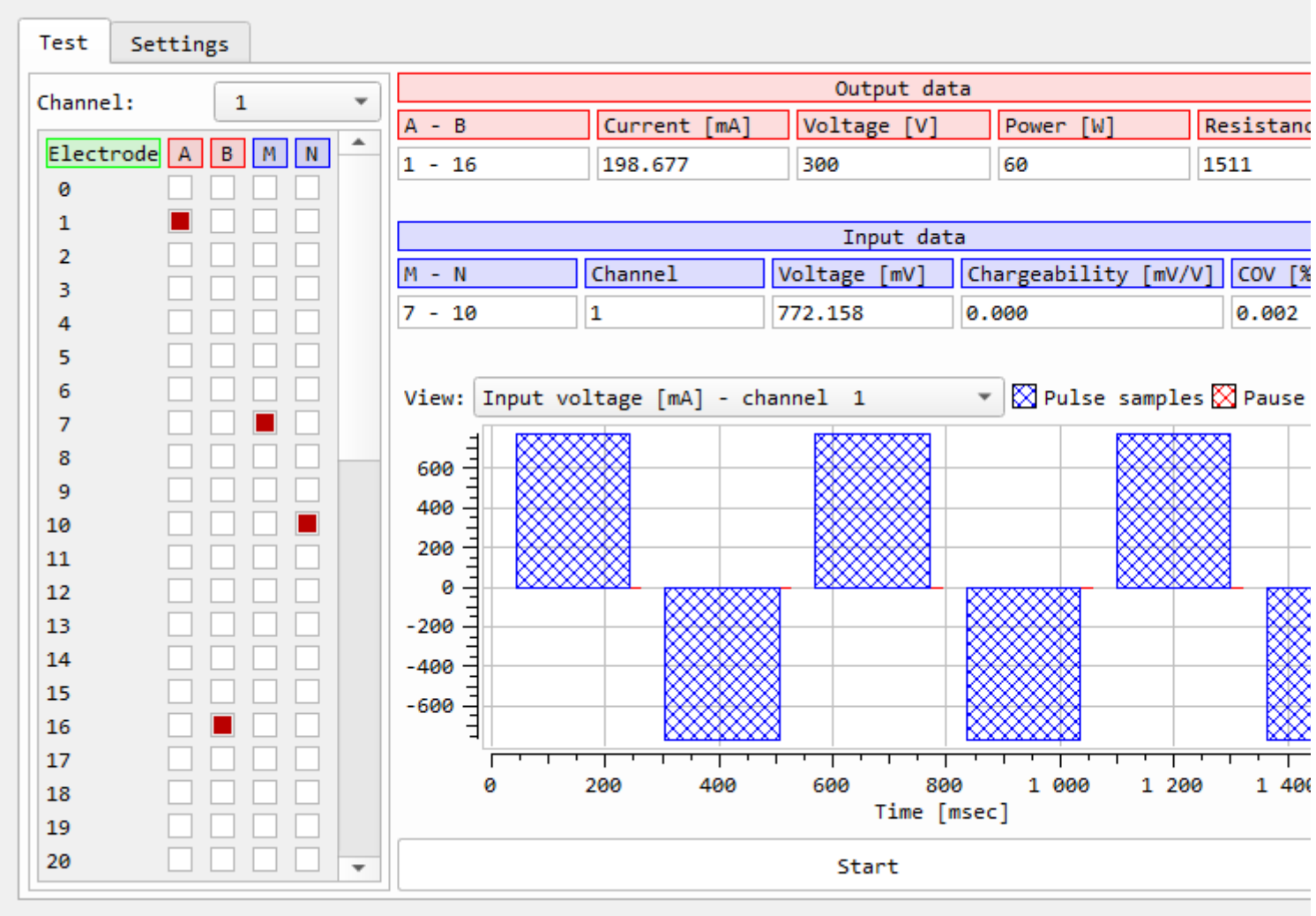
7. Maximum output power.
Maximum output power can be limited, for example to save battery power.

8. Stackings.
The number of stackings needed depends on the site condition, distance among electrodes and the type of electrode array used. It is recommended to test settings with multiple stackings, and if the coefficient of variation is very favorable the maximum number of stackings value may be reduced to even as low as to one to speed up the measurements.

9. Coefficient of variation.
Measuring cycles will be repeated at least the minimum number of stackings requested. Current measurement will stop if the coefficient of variation falls within the specified limit. If not, it will continue until either the coefficient of variation drops to the limit or the maximum number of stackings have been reached.

[Sample rate, Hz] Specifies sample rate. Use appropriate sample rate depending on the region of the investigation!
[Pulse delay, msec] Specifies the delay between the pulse beginning and the start of measuring in the pulse.
[Pulse samples] Specifies the number of samples in the pulse.
[Pause delay, msec] Specifies the delay between the pause beginning and the start of measuring in the pause.
[Pause samples] Specifies the number of samples in the pause.
[VP-1000M] If checked, the external VP-1000M transmitter will be used instead of the internal one.
[Output voltage, V] Specifies the output voltage.
[Maximum output power, W] Specifies the output power limitation.
[Stackings] Specifies minimum and maximum number of the pulses triplets to get the desired coefficient of variation of resistivity.
[Coefficient of variation, %] Specifies the desired coefficient of variation of resistivity.
[Reset] Press to set the default settings.

Test settings



Use this tool to figure out how output and input signals depends on various settings.

[Test] Choose the tab to view the recently obtained data.
[Settings] Choose the tab to view and change the current measuring settings.

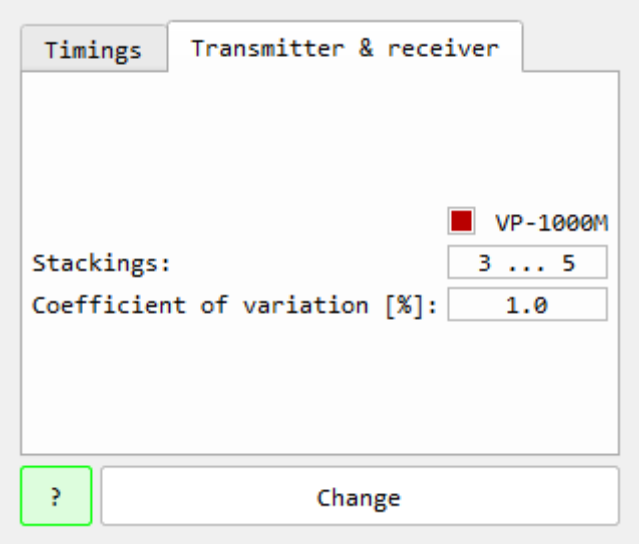
[Channel] Specifies the input voltage receiver channel to use.
[Electrode A B M N] Assign output A/B and input M/N electrodes.

[A - B] Indicates output A/B electrodes.
[Current, mA] Indicates the output current.
[Voltage, V] Indicates the output voltage.
[Power, W] Indicates the output power.
[Resistance, Ohm] Indicates the output load resistance.

[M - N] Indicates the input M/N electrodes.
[Channel] Indicates the input voltage receiver channel.
[Voltage, mV] Indicates the input voltage.
[Chargeability, mV/V] Indicates the apparent chargeability.
[COV, %] Indicates the coefficient of variation of resistivity.

[View] Choose the input voltage (output voltage or output current) receiver channel to view the signal plot.
[Start] Press to execute the single measuring.
[Cancel] Press to interrupt the measuring.

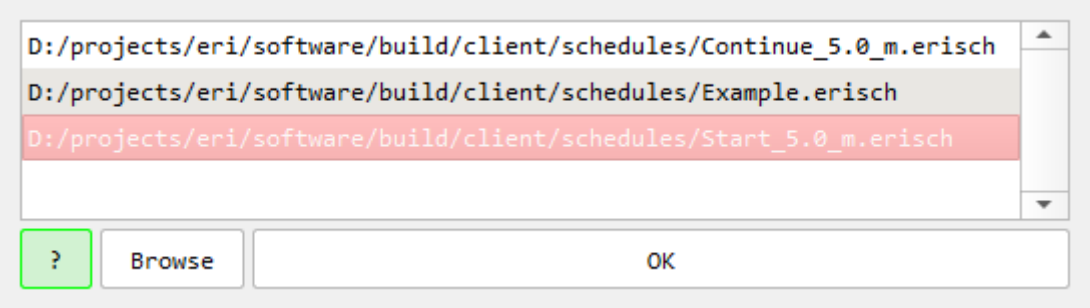
Settings



Current measuring settings.
Note that "Timings" settings are locked during session and must be set in advance.

[Change] Press to change the current measuring settings.

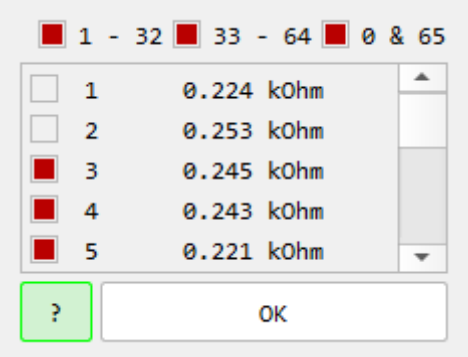
Start ERI session



Select ERI schedule ("*.erisch" file) located in "schedules" directory to use in this session.

[Browse] Press to use the file browser.

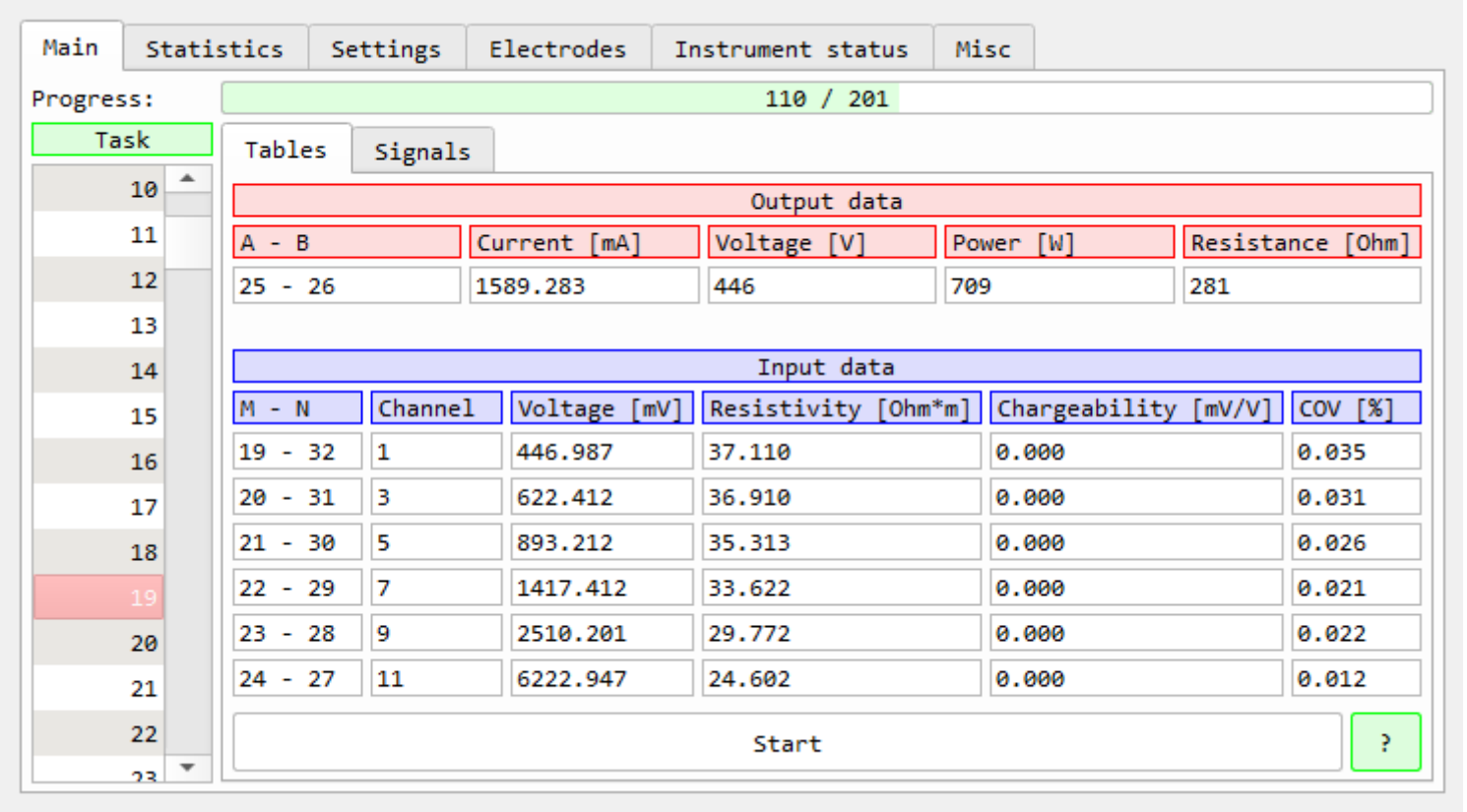
Enabled electrodes



Perhaps some of the electrodes should not or cannot be used for some reason. Uncheck electrodes that must be disabled in this session. All measurements that use the disabled electrodes will be lost.

[# - #] Use to handle group of electrodes.

ERI session



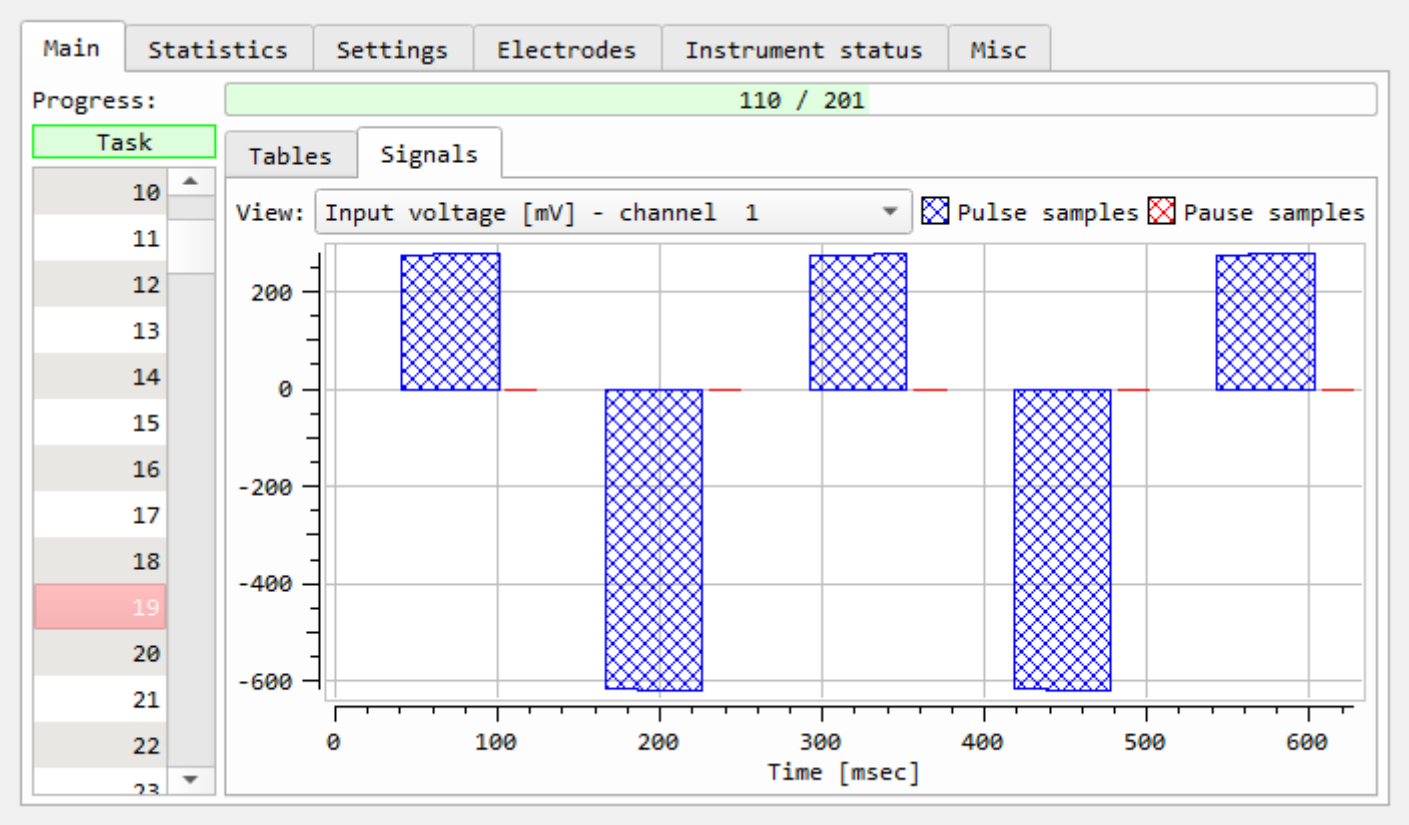
[Main] Choose the tab to view the recently obtained data.
[Statistics] Choose the tab to view the data statistics.
[Settings] Choose the tab to view and change the current measuring settings.
[Electrodes] Choose the tab to view the current information about electrodes.
[Instrument status] Choose the tab to view the instrument current status.
[Misc] Choose the tab to view miscellaneous information.

[Progress] Indicates overall measuring progress.
[Task] Choose number of the task to display data.
[Signals] Choose the tab to view raw data.

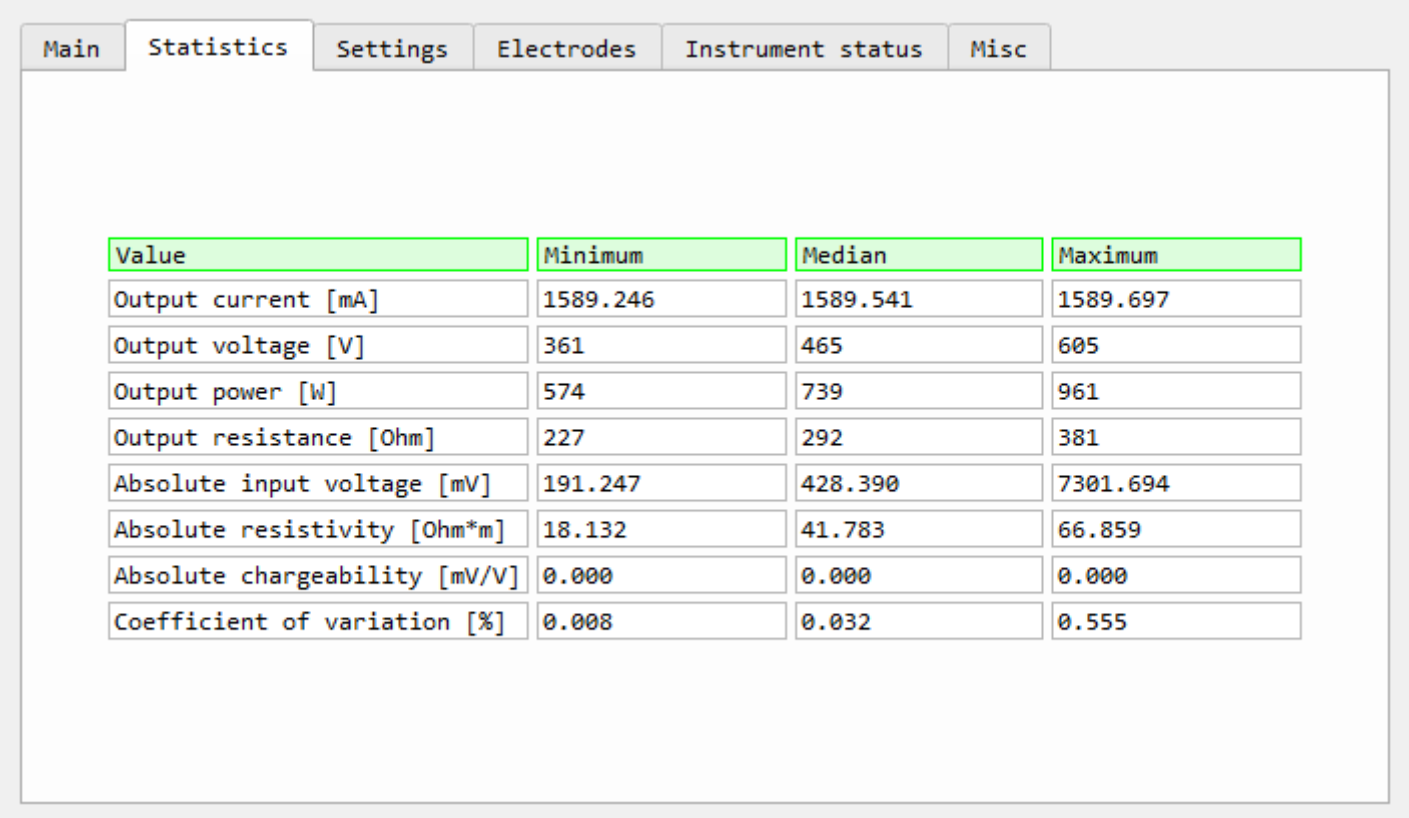
[A - B] Indicates the output A/B electrodes.
[Current, mA] Indicates the output current.
[Voltage, V] Indicates the output voltage.
[Power, W] Indicates the output power.
[Resistance, Ohm] Indicates the output load resistance.

[M - N] Indicates the input M/N electrodes.
[Channel] Indicates the input voltage receiver channel.
[Voltage, mV] Indicates the input voltage.
[Resistivity, Ohm*m] Indicates the apparent resistivity.
[Chargeability, mV/V] Indicates the apparent chargeability.
[COV, %] Indicates the coefficient of variation of resistivity.

[Start] Press to execute continuous measuring.
[Cancel] Press to interrupt measuring.



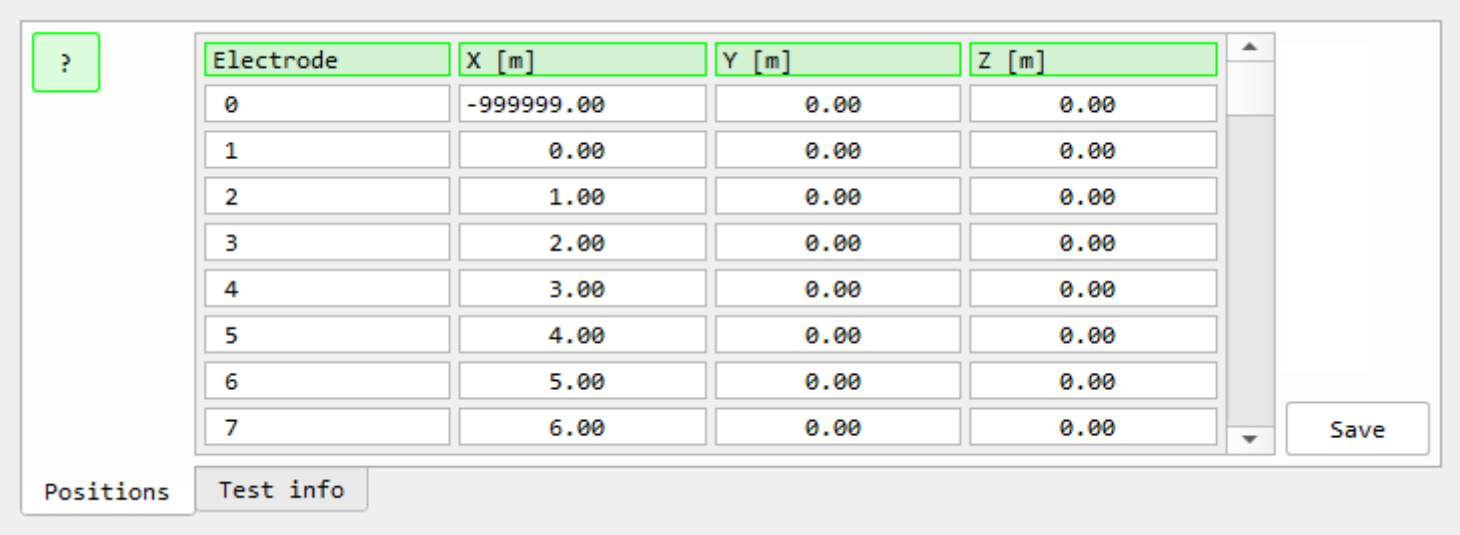
[View] Choose the input voltage (output voltage or output current) receiver channel to view the signal plot.



Value	Minimum	Median	Maximum
Output current [mA]	1589.246	1589.541	1589.697
Output voltage [V]	361	465	605
Output power [W]	574	739	961
Output resistance [Ohm]	227	292	381
Absolute input voltage [mV]	191.247	428.390	7301.694
Absolute resistivity [Ohm*m]	18.132	41.783	66.859
Absolute chargeability [mV/V]	0.000	0.000	0.000
Coefficient of variation [%]	0.008	0.032	0.555

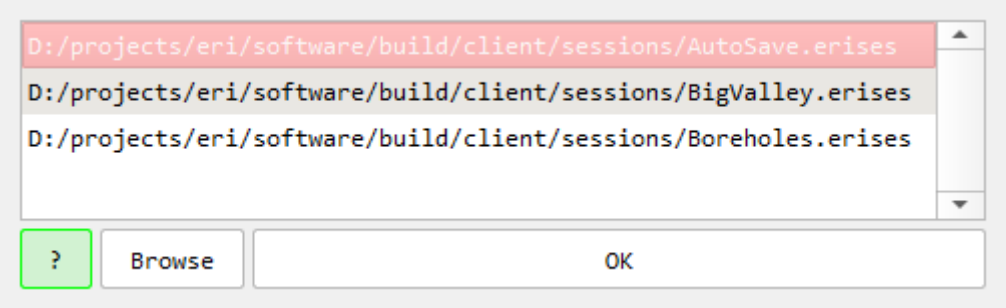
Current data statistics.

Electrodes



[Positions] Choose the tab to view the electrodes positions as they described in the schedule that used in current session.
[Test info] Choose the tab to view the electrodes grounding resistance values that were obtained during the last electrodes testing.
[Save] Press to save the displayed data to a text file.

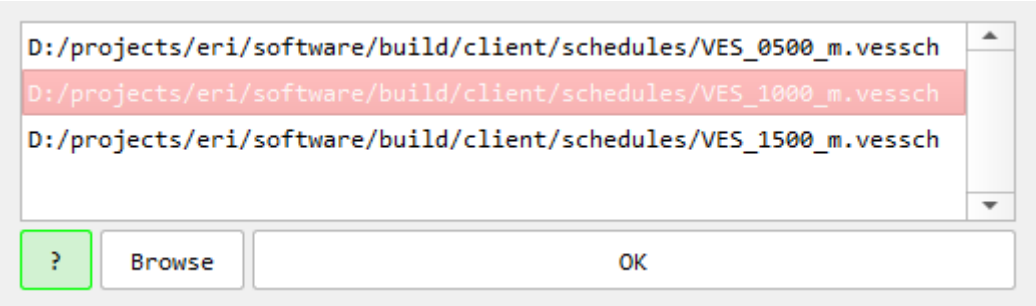
Continue ERI session



Select saved ERI session ("*.erises" file) located in "sessions" directory to continue. Note that the last session can be continued with "AutoSave.erises" file even if it has not been saved properly.

[Browse] Press to use the file browser.

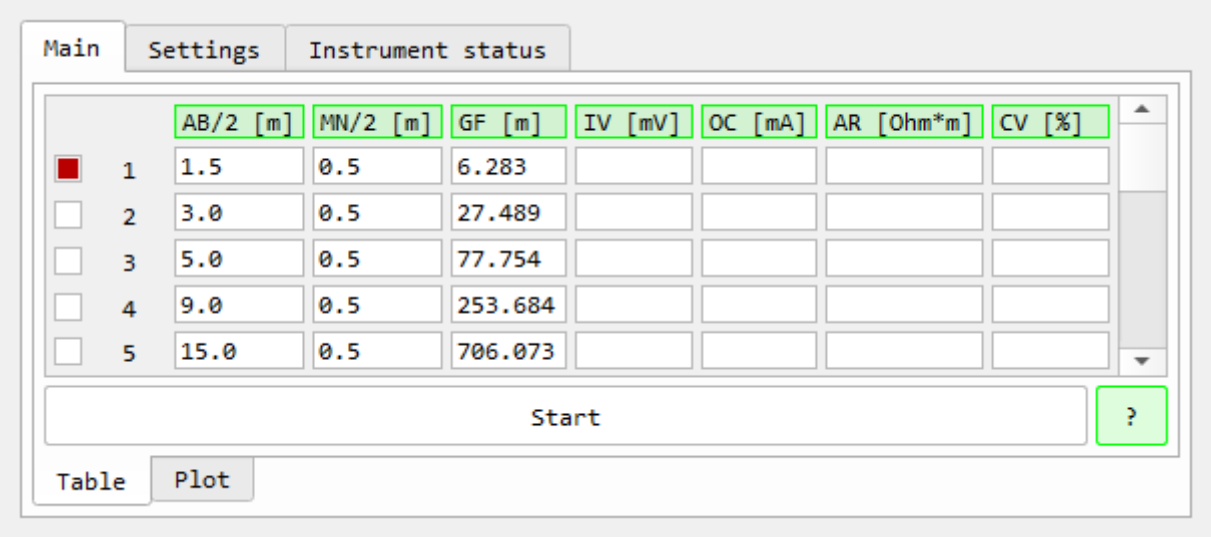
Start VES session



Select VES schedule ("*.vessch" file) located in "schedules" directory to use in this session.

[Browse] Press to use the file browser.

VES session



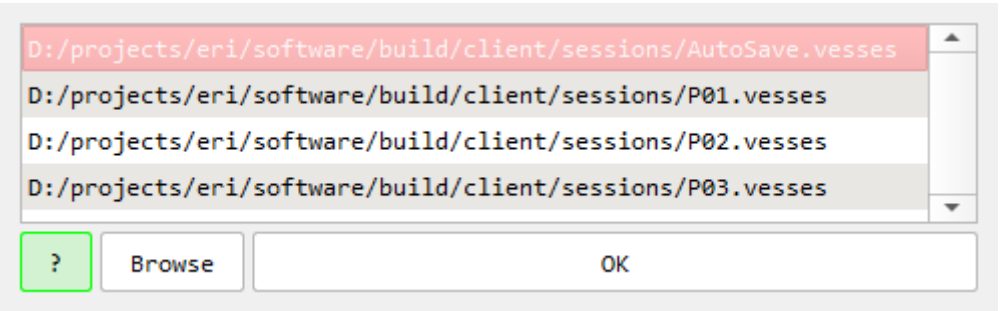
[Main] Choose the tab to view the recently obtained data.
[Settings] Choose the tab to view and change the current measuring settings.
[Instrument status] Choose the tab to view the instrument current status.

[Table] Choose the tab to view the data table.
[Plot] Choose the tab to view VES curve.

[AB/2, m] Half-length of output AB line.
[MN/2, m] Half-length of input MN line.
[GF, m] Geometric factor.
[IV, mV] Input voltage.
[OC, mA] Output current.
[RE, Ohm*m] Apparent resistivity.
[CV, %] Coefficient of variation.

[Start] Press to execute a single measurement.
[Cancel] Press to interrupt a measurement.

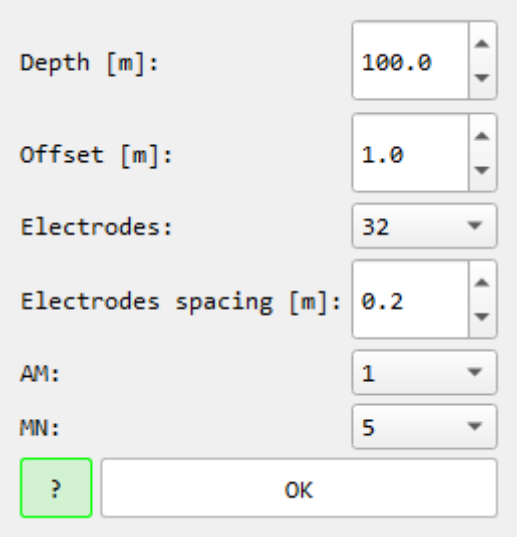
Continue VES session



Select saved VES session ("*.vesses" file) located in "sessions" directory to continue. Note that the last session can be continued with "AutoSave.vesses" file even if it has not been saved properly.

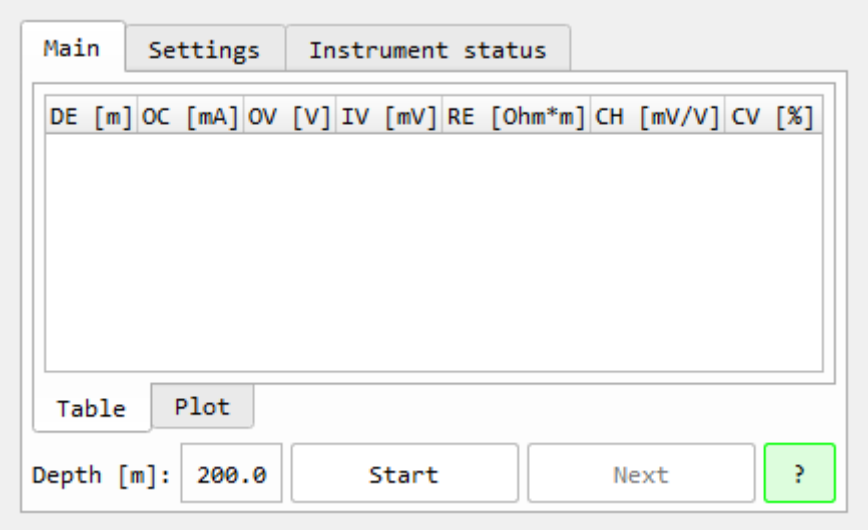
[Browse] Press to use the file browser.

RL configuration



[Depth, m] Specifies the initial depth of logging.
[Offset, m] Specifies the distance from end point of the logging probe to its first electrode.
[Electrodes] Specifies the number of cable electrodes used in the logging probe.
[Electrodes spacing, m] Specifies the distance between adjacent electrodes.
[AM, MN] Specifies the geometry of measuring array.

RL session



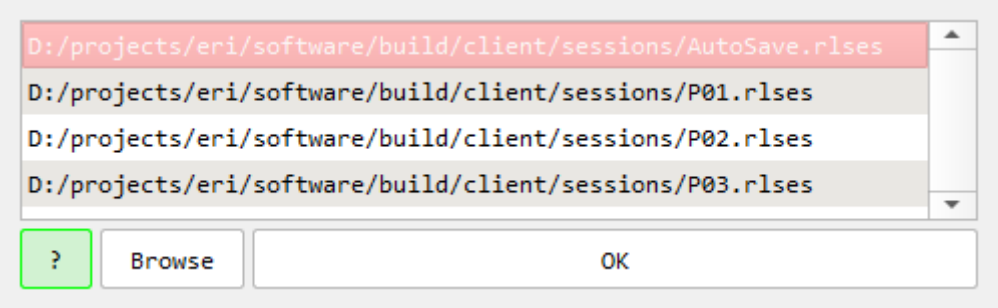
[Main] Choose the tab to view the recently obtained data.
[Settings] Choose the tab to view and change the current measuring settings.
[Instrument status] Choose the tab to view the instrument current status.

[Table] Choose the tab to view the data table.
[Plot] Choose the tab to view RL curve.
[Depth, m] Current depth of logging probe.

[DE, m] Depth.
[OC, mA] Output current.
[OV, V] Output voltage.
[IV, mV] Input voltage.
[RE, Ohm*m] Resistivity.
[CH, mV/V] Chargeability.
[CV, %] Coefficient of variation.

[Start] Press to execute a measurement.
[Cancel] Press to interrupt a measurement.
[Next] Press to accept the results at current depth.

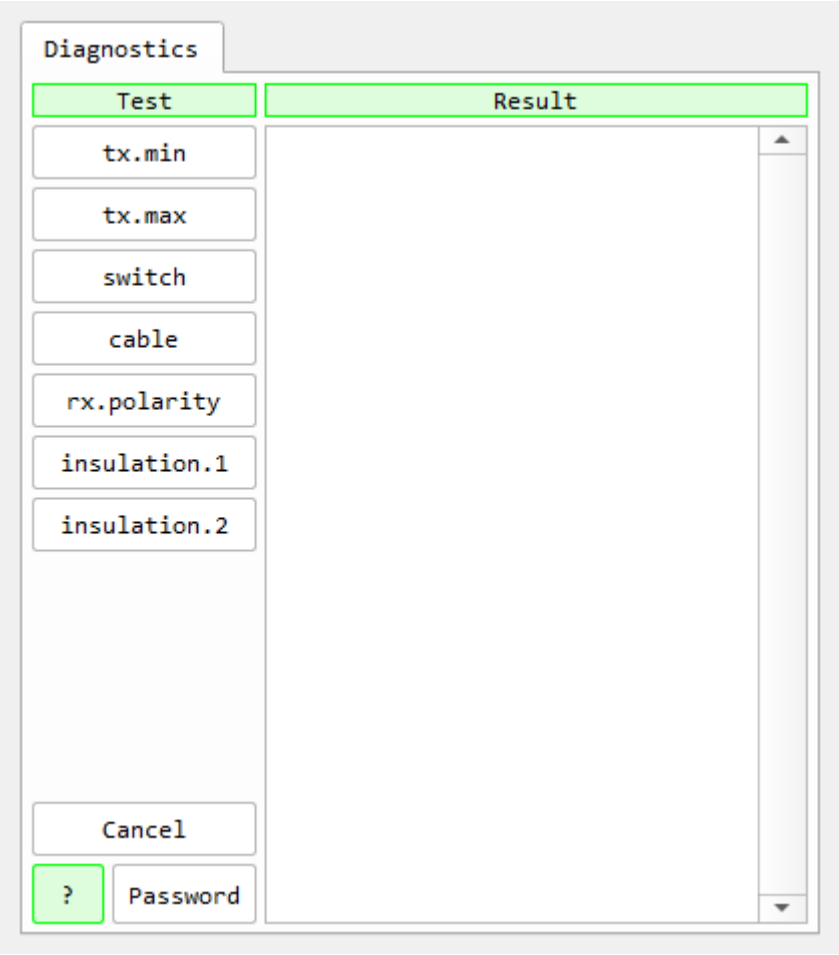
Continue RL session



Select saved RL session ("*.rlses" file) located in "sessions" directory to continue. Note that the last session can be continued with "AutoSave.rlses" file even if it has not been saved properly.

[Browse] Press to use the file browser.

Diagnostics



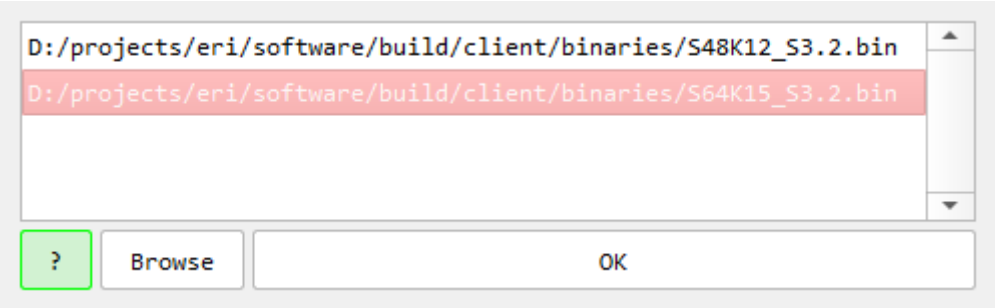
Use this tool for quick instrument testing. Tests "tx.min", "tx.max", "switch" and "rx.polarity" are supposed to be run without multi-wire cables. Tests "cable", "insulation.1" and "insulation.2" are supposed to be run without grounded electrodes.

[tx.min] Test transmitter at minimal voltage via A and B terminals.
[tx.max] Test transmitter at maximum voltage via A and B terminals. Beware of high voltage while running this test.
[switch] Test switches working capacity.
[cable] Test continuity of multi-wire cable connected to both sockets of instrument.
[rx.polarity] Test input voltage receivers polarity.
[insulation.1] Test insulation of multi-wire cable connected to the first socket of instrument. Beware of high voltage while running this test.
[insulation.2] Test insulation of multi-wire cable connected to the second socket of instrument. Beware of high voltage while running this test.
[Result] The result of last test. "OK" means success.

[Cancel] Press to cancel running current test.
[Password] Enter password to unlock low level tools.

3 - UPDATE

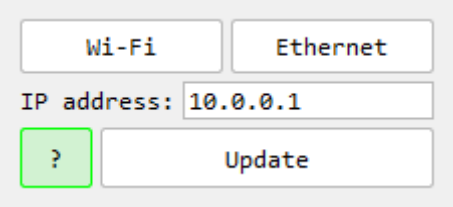
Software



Select software ("*.bin" file) located in "binaries" directory to upload into instrument. Instrument software major version (number left side of "." symbol) must correspond to Xeris software major version you plan to use.

[Browse] Press to use the file browser.

Update

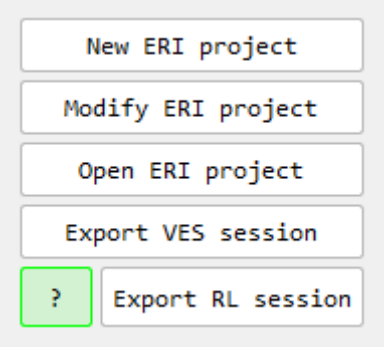


Update the instrument software via Wi-Fi or Ethernet connection. This may be necessary to satisfy software dependencies. Beforehand, make sure that Wi-Fi or Ethernet connection with the instrument network was successfully established.

[Wi-Fi] Press to set a default IP address for the Wi-Fi connection and upload software into the instrument.
[Ethernet] Press to set a default IP address for the Ethernet connection and upload software into the instrument.
[IP address] IP address of the instrument. It can be specified manually if needed.
[Update] Press to upload software into the instrument using the specified IP address.

4 - PROCESSING

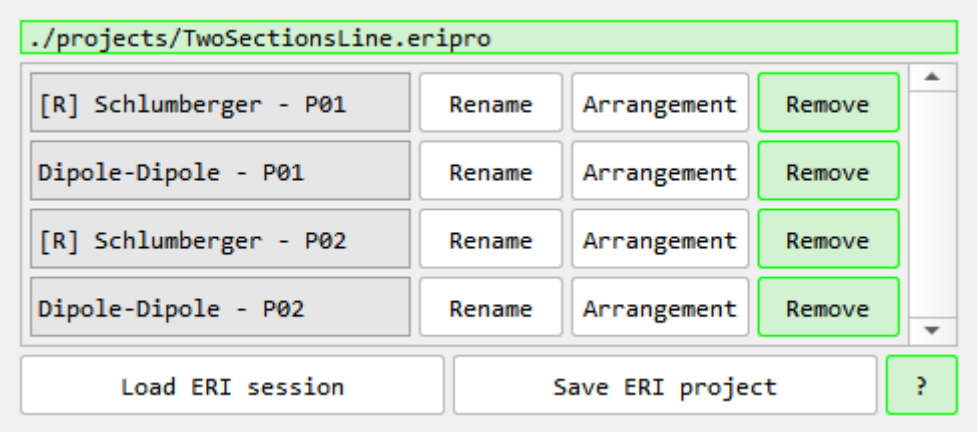
Processing



[New ERI project] Press to create new ERI project.
[Modify ERI project] Press to modify data composition and the electrodes' arrangement of an existing ERI project.
[Open ERI project] Press to open the data processing main window.

[Export VES session] Press to export VES session to a text file.
[Export RL session] Press to export RL session to a text file.

ERI project

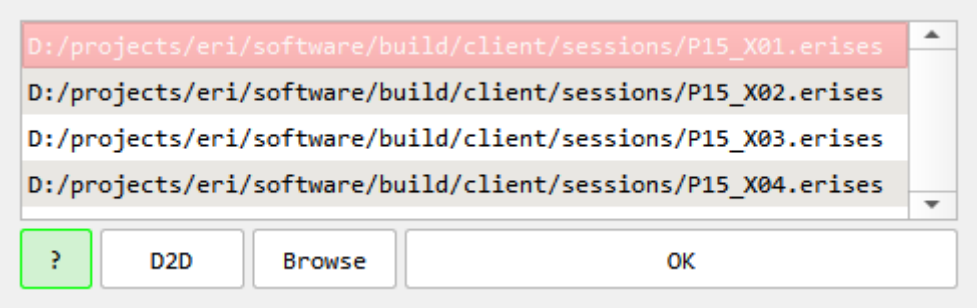


Use this tool to manage the project. Data groups with modified arrangements are highlighted.

[Rename] Press to rename a data group.
[Arrangement] Press to view or modify an electrodes arrangement for a data group.
[Remove] Press to remove a data group.

[Load ERI session] Press to add ERI session ("*.erises" file) to the project.
[Save ERI project] Press to save current ERI project ("*.eripro" file).

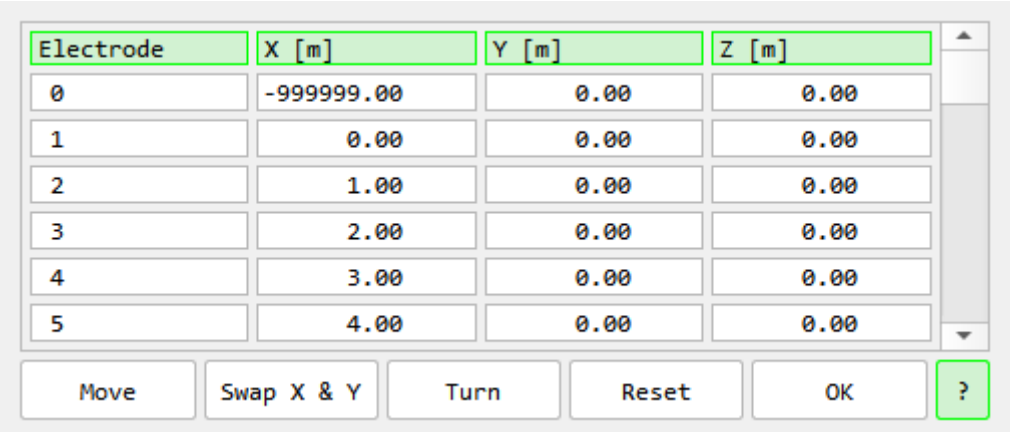
Load ERI session



Select ERI session ("*.erises" file) located in "sessions" directory to add to a current project.

[D2D] Press to load D2D data files.
[Browse] Press to use the file browser.

Arrangement

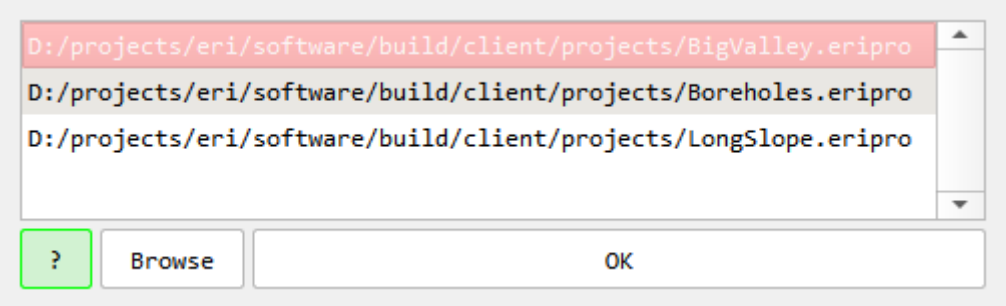


Use this tool to arrange separate data into a project. Also, it is possible to specify or fix the

electrodes' positions. Current file name is presented at the top.

[Electrode] Electrode number.
[X, Y, m] Horizontal positions of an electrode.
[Z, m] Depth of the electrode.
[Move] Press to move the electrodes along X and/or Y directions.
[Swap X & Y] Press to swap X and Y columns.
[Turn] Press to turn the electrodes arrangement.
[Reset] Press to discard changes.

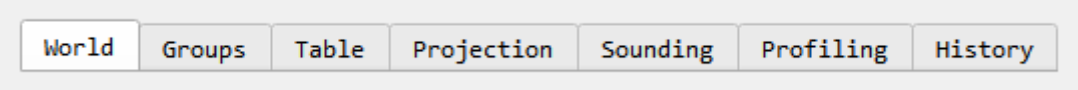
Open or modify ERI project



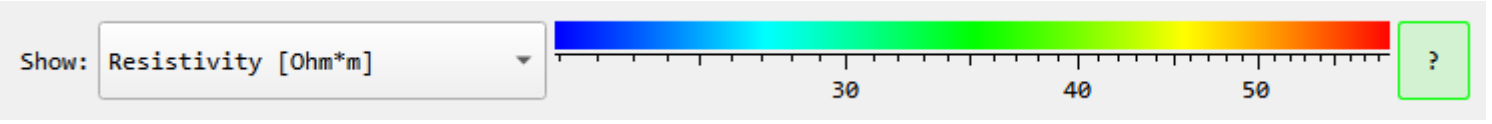
Select ERI project ("*.eripro" file) located in "projects" directory to open or modify.

[Browse] Press to use the file browser.

Main data processing window

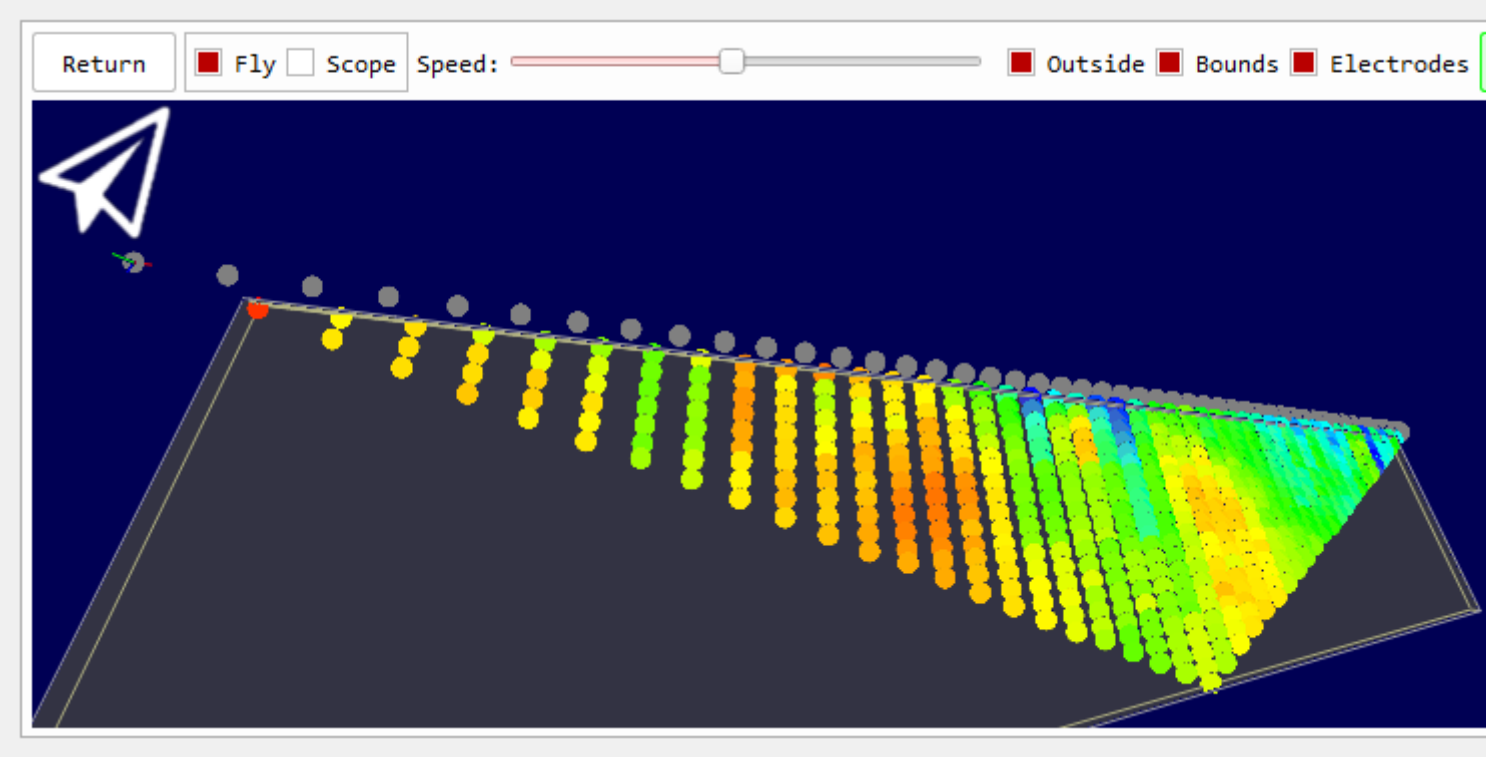


[World] Choose the tab to view 3D pseudo-section and manage the scope.
[Groups] Choose the tab to manage data groups.
[Table] Choose to view a data table.
[Projection] Choose the tab to view data as a projection of pseudo-section on the face of the scope.
[Sounding] Choose the tab to view all the samples of the sounding curves.
[Profiling] Choose the tab to view scalable profiling curves.
[History] Choose the tab to view recently applied processing operations and undo/redo them.



[Show] Choose the current value to view.

World



World window offers fly and scope modes.

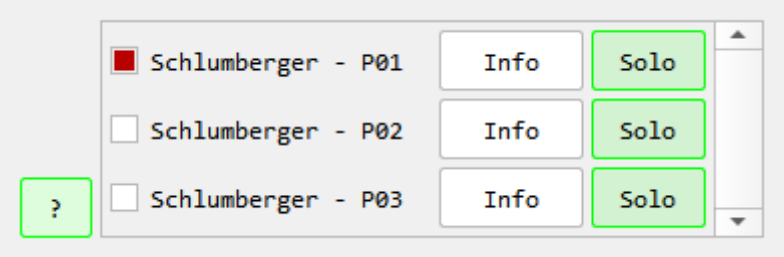
General:
[Left mouse button] Activate controls.
[Mouse wheel up] Increase data points size.
[Mouse wheel down] Decrease data points size.

Fly mode:
[W] Move forward.
[S] Move backward.
[A] Move left.
[D] Move right.
[Q] Move up.
[Z] Move down.
[Shift] Increase speed.

Scope mode:
[W, S] Move scope along X direction.
[D, A] Move scope along Y direction.
[Q, E] Rotate scope.
[Left, Right] Resize scope in X direction.
[Up, down] Resize scope in Y direction.
[[,]] Change scope display position.
[Enter] Accept changes.
[Esc] Discard changes.

[Return] Press to return to the initial position.
[Fly] Press to enter a fly mode.
[Scope] Press to enter a scope mode.
[Speed] Specifies speed of the movement.
[Outside] If checked, the data outside of the current scope will be shown.
[Bounds] If checked, overall data bounds will be shown.
[Electrodes] If checked, the electrodes' positions will be shown.

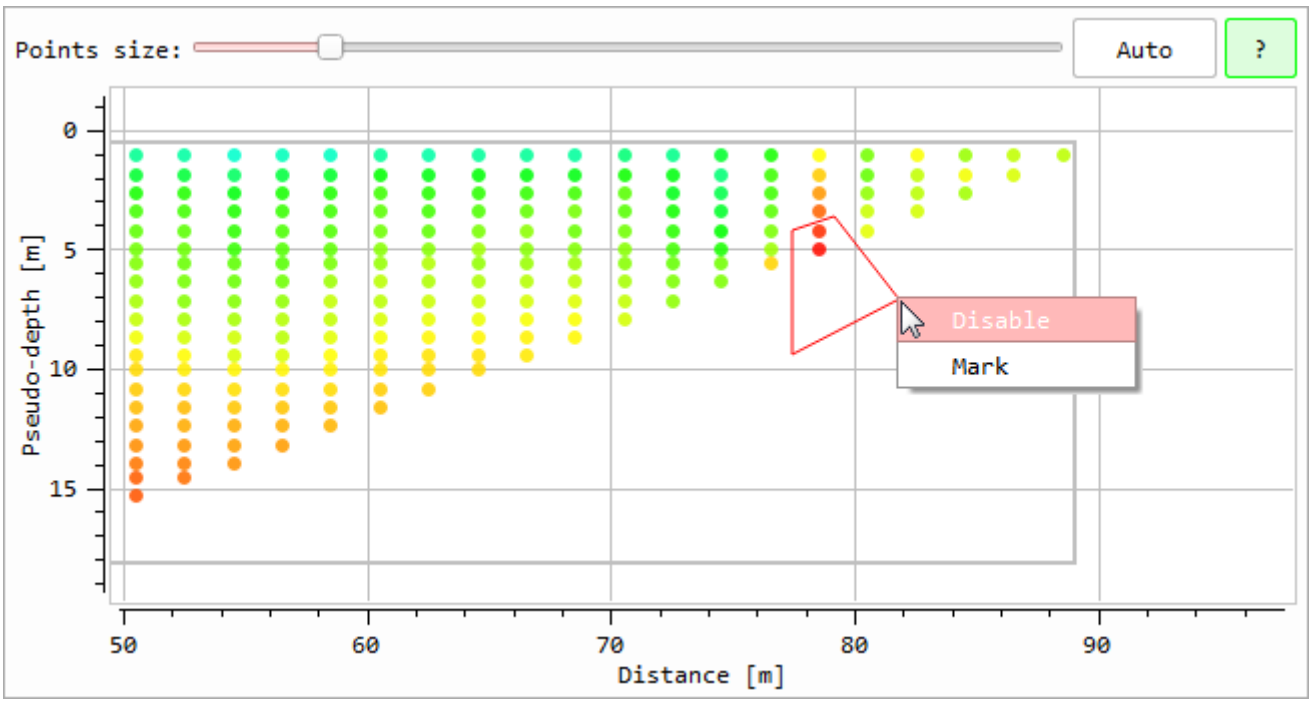
Groups



Check or uncheck the data groups to make them currently active or inactive. This is helpful when one needs to analyze some data separately.

[Info] Press to view the information about electrodes.
[Solo] Press to make only one data group active.

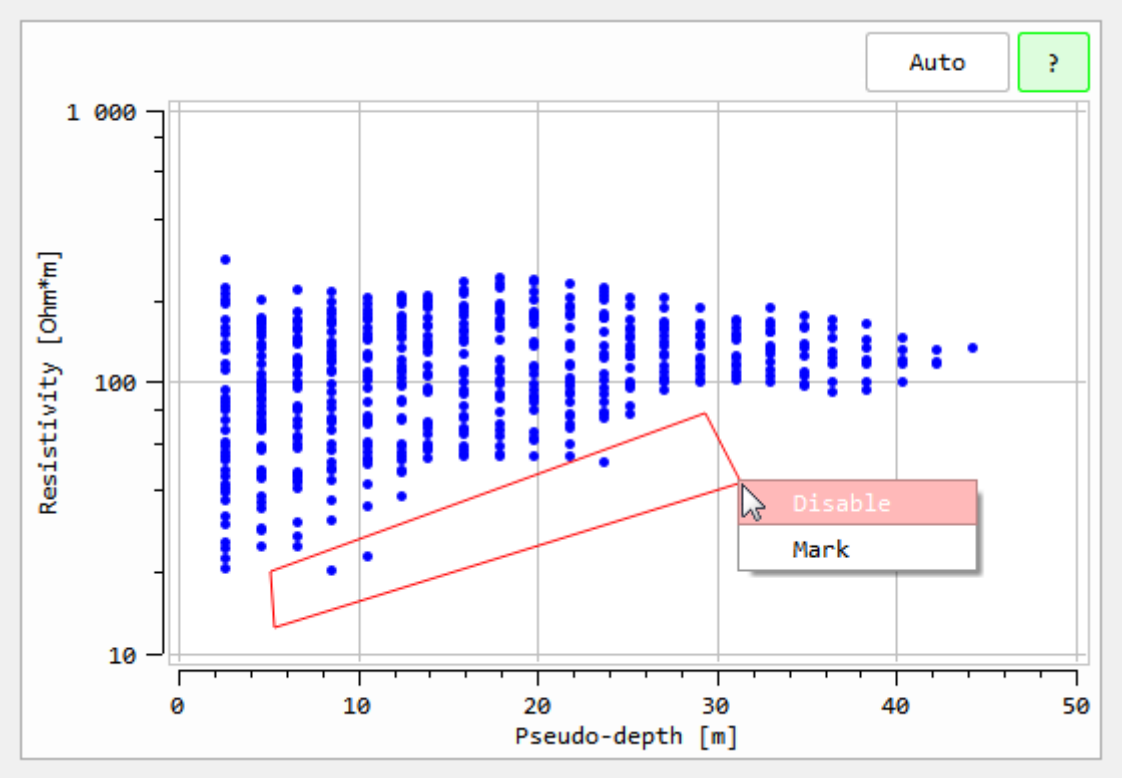
Projection



[Left mouse button] Use to make a polygon selection.
[Middle mouse button] Use to move a view.
[Mouse wheel] Use to scale a plot.

[Points size] Use to adjust plot points size.
[Auto] Press to fit all data into the plot.
[Disable] Choose entry to disable data inside the selection.
[Mark] Choose entry to mark data inside the selection.

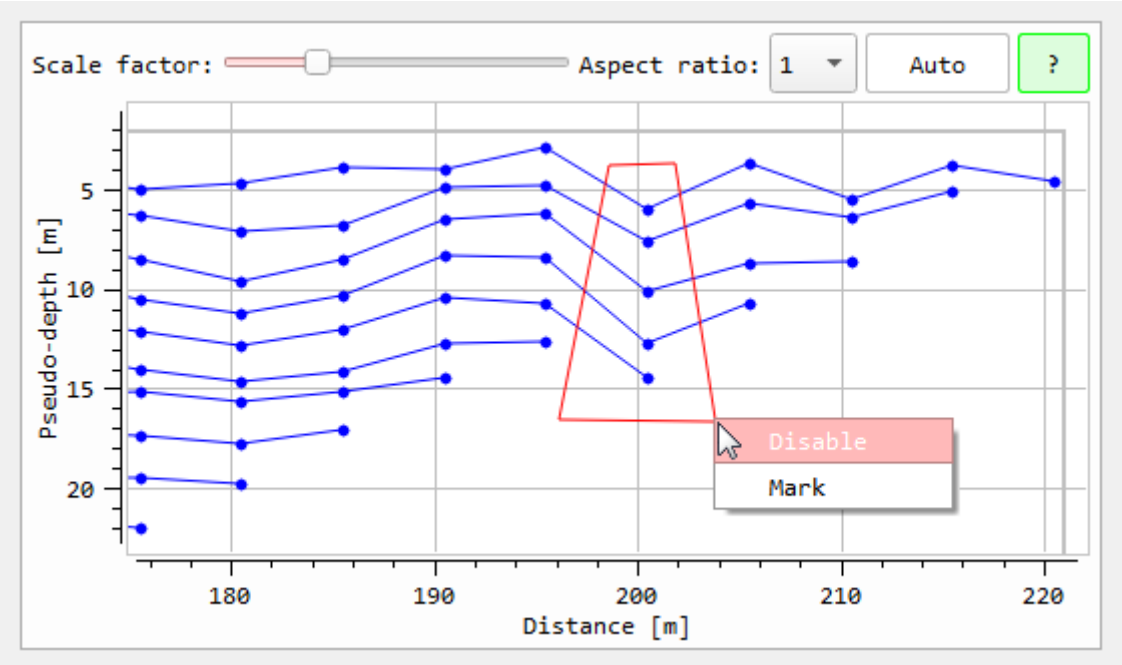
Sounding



[Left mouse button] Use to make a polygon selection.
[Middle mouse button] Use to move a view.
[Mouse wheel] Use to scale a plot.

[Auto] Press to fit all data into the plot.
[Disable] Choose entry to disable data inside the selection.
[Mark] Choose entry to mark data inside the selection.

Profiling

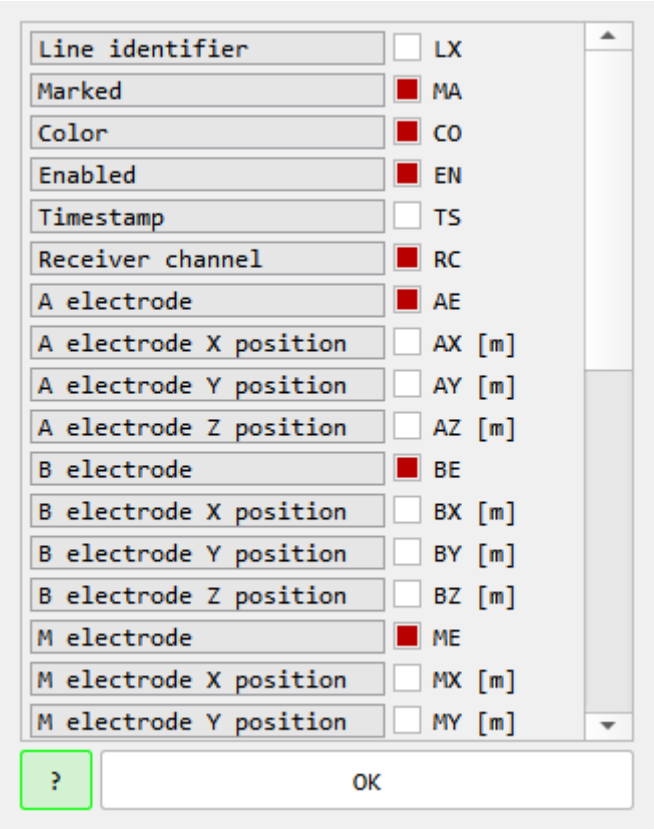


[Left mouse button] Use to make a polygon selection.
[Middle mouse button] Use to move a view.
[Mouse wheel] Use to scale a plot.

[Scale factor] Use to adjust profiling curves scale.
[Aspect ratio] Use to adjust plot aspect ratio.

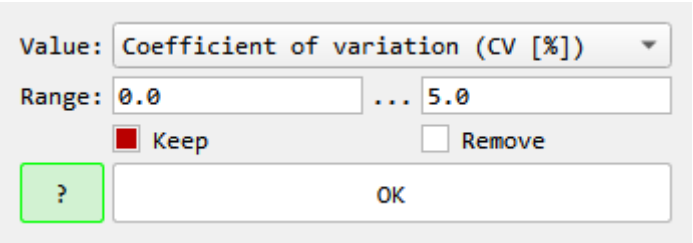
[Auto] Press to fit all data into the plot.
[Disable] Choose entry to disable data inside the selection.
[Mark] Choose entry to mark data inside the selection.

Headers



Choose headers that are present in "Table" tab.

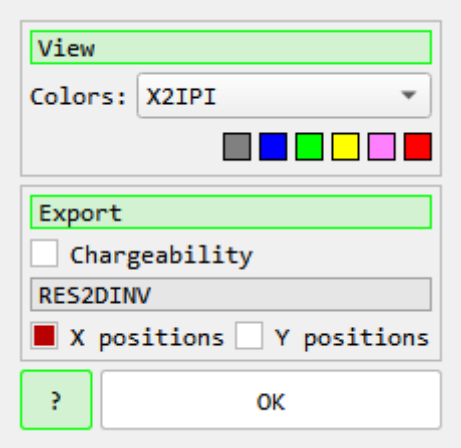
Filter



Use this tool to apply filter to the data located inside of the scope. Data located outside of the scope will not be affected by the filter.

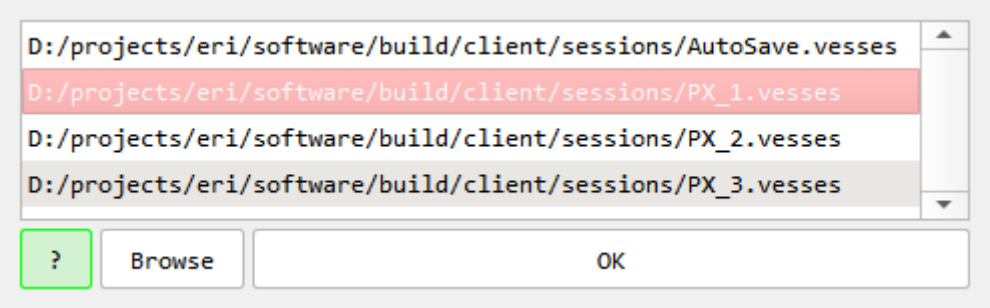
[Value] Specifies the value that will be filtered.
[Range] Specifies the range of filtering.
[Keep] If checked, values within the range will be kept.
[Remove] If checked, values within the range will be removed.

Options



[Colors] Choose a color scheme to use.
[Chargeability] If not checked, the chargeability values will not be exported.
[X positions, Y positions] Choose X or Y electrode positions for export to RES2DINV.

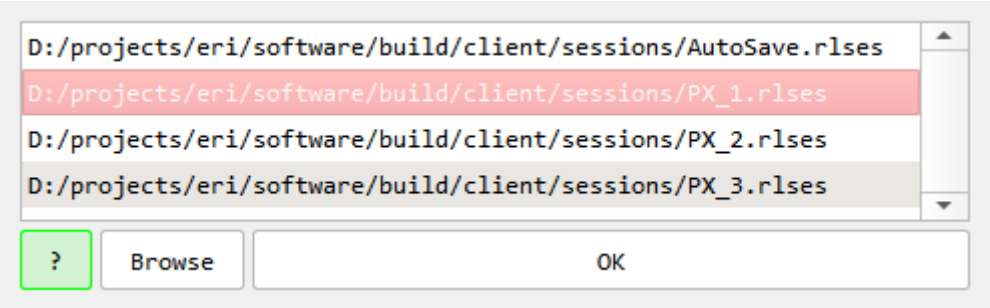
Export VES session



Select VES session ("*.vesses" file) located in "sessions" directory to export.

[Browse] Press to use the file browser.

Export RL session

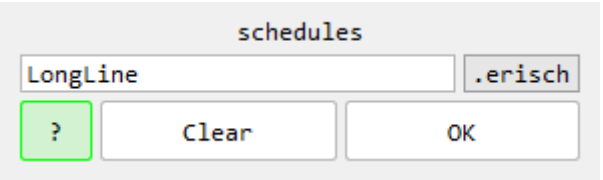


Select RL session ("*.rlses" file) located in "sessions" directory to export.

[Browse] Press to use the file browser.

5 - MISC

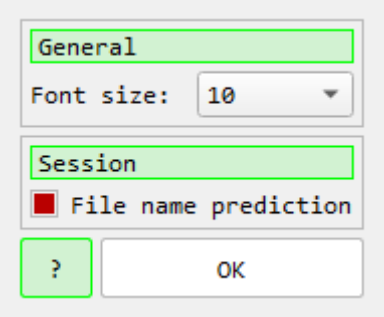
Save



Enter file name to save. Current directory is shown at the top.

[*.###] Specifies the file extension.
[Clear] Press to clear the typed text.

Settings



[Font size] Choose font size of Xeris software.
[File name prediction] Offer default file name based on previously entered one.