

Managing the Displays in IX1D v 3 – A Tutorial

Version 1.0


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Adjusting Display Parameters

IX1D v 3 has several commands and dialogs that are used to manage the views of the various kinds of data.

View/Unzoom autoscales the data and uses the button 

View/Zoom allows the user to select an area for display with the mouse. This command toggles the state, which is also controlled or indicated by the button 

Several commands (and buttons) in the sounding window control what parameters are displayed on the graphs.

There are several types of profile displays controlled by the View menu or by right-clicking in a blank area of the profile graph.

All graphs have the option to display a grid.

All graphs have a View/Properties, also accessed by right click or button 

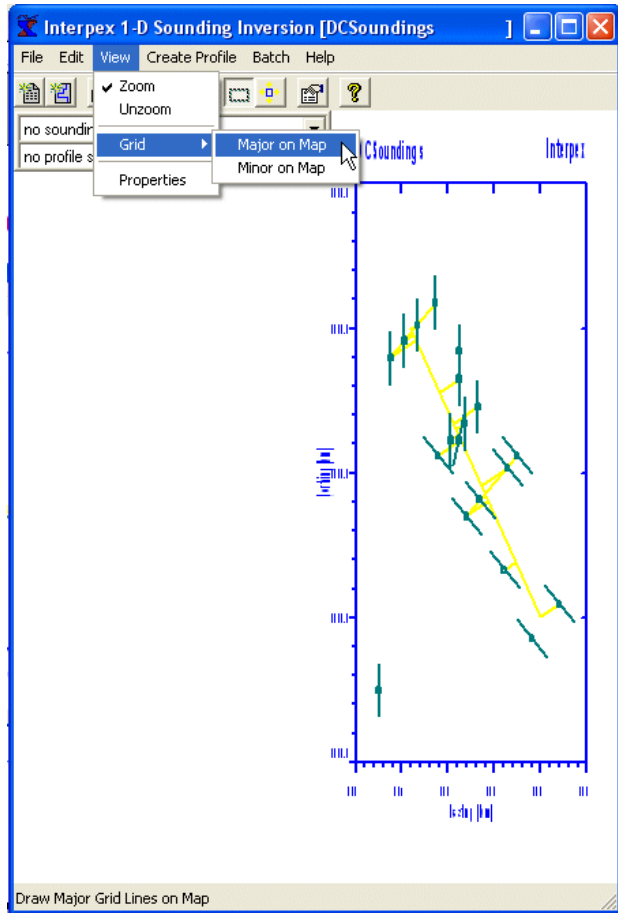
Zoom and Unzoom

Unzoom autoscales the display according to the boundaries of the data. This may be affected by what items are selected for display and what items are available. For sounding data, the layered, smooth and equivalent models may be available or selected for display or not. For MT data, the Niblett and/or Bostick models may be selected. A red line display at 10 ohm-m and 1 Hz is available for MT data. For Resistivity data, the model can be displayed on the same graph as the data. TEM data can be displayed alternatively as voltage and on a linear axis. The model axis can be logarithmic or linear.

Zoom requires the user to draw a rubber-band box with the mouse. Then, rather than using the actual limits of the data for the selected graph, the boundaries of the rubber-band box are used to generate the scales, but in the same way. This is why using the zoom feature does not give axes which fit the rubber-band box exactly.

Both Zoom and Unzoom use a unique autoscaling feature to ensure that the axes which are generated are pleasing in the number of intervals and the interval values themselves.

Managing the Map Display



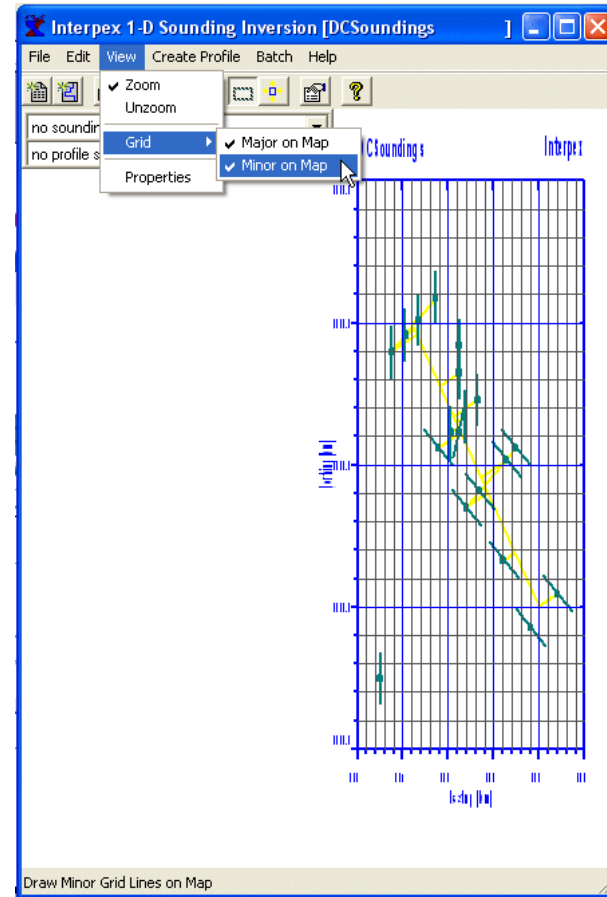
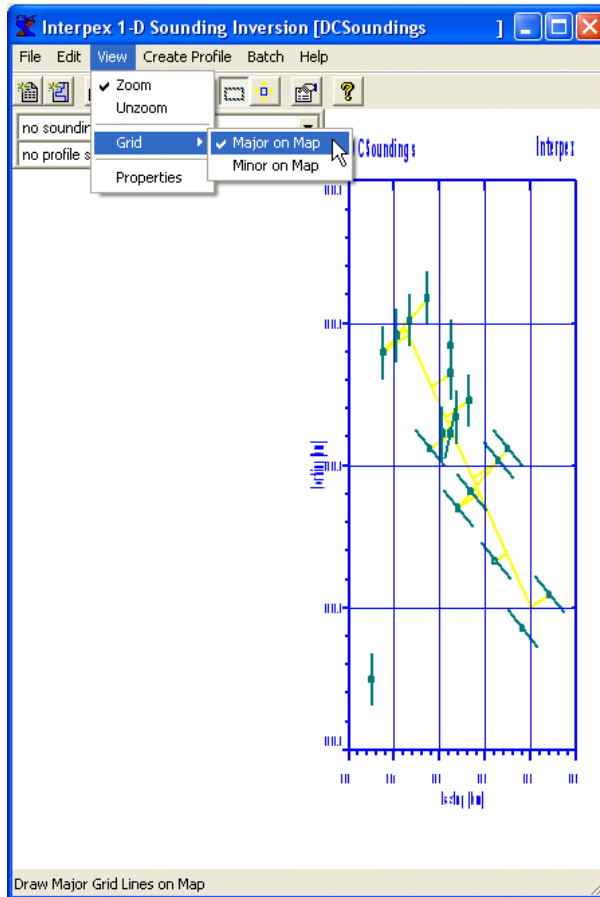
The 'View Properties - Map' dialog box is shown, allowing for the configuration of map display properties. It has two tabs: 'Northing' and 'Easting'. The 'Northing' tab is active, showing the 'North Axis Label (40 chars):' field with the text 'Northing [m]'. Below this are fields for 'Label size (height):' (0.18000 inch / 0.45720 cm), 'Label offset (towards graph):' (0.0000 inch / 0.0000 cm), and 'Minor Divisions:' (5). The 'Axis has' field is set to 4, 'Major Divisions, starting at' is 4387500.0, and 'Incrementing in' is 5000.0. At the bottom, there are fields for 'Data base name size:' (0.27000 inch / 0.68580 cm), 'Units:' (radio buttons for 'Inches' and 'cm', with 'cm' selected), and 'Line Width:' (2). Buttons for 'OK', 'Cancel', and 'Apply' are at the bottom.

The properties dialog allows for editing of the axis titles and all of the features of the axes. There are also controls for position and size of the axis labels and the Data Base name size.

The line width is for making heavier lines on printed output.

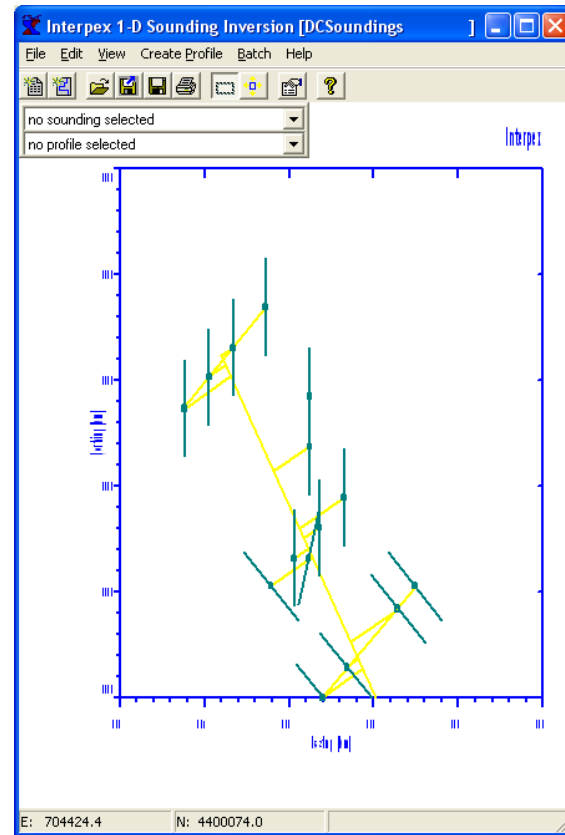
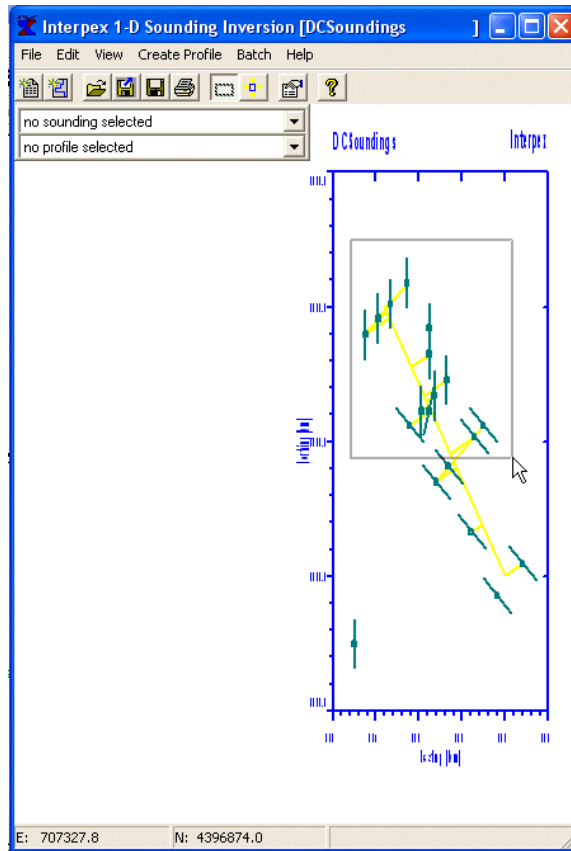
The map display is the most basic of all the displays. Available options for controlling the view are Zoom, Unzoom, Grid and properties.

Managing the Map Display



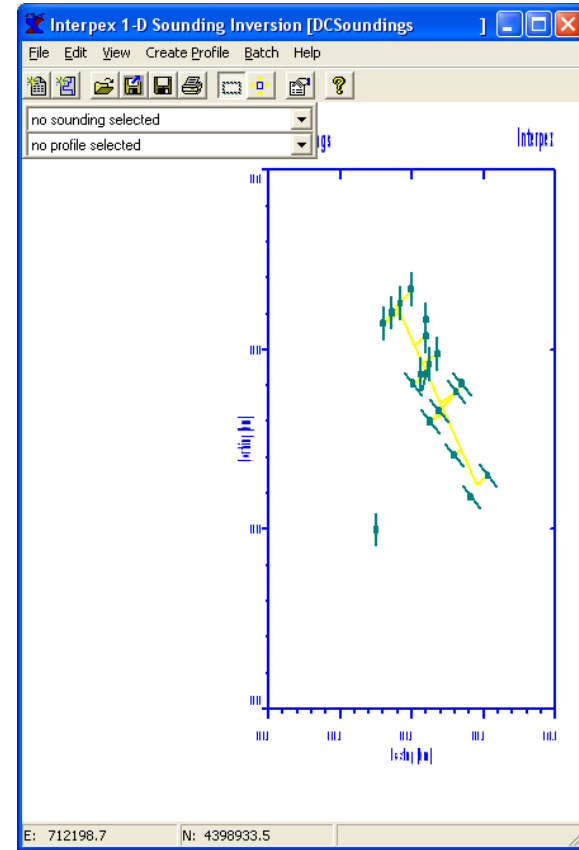
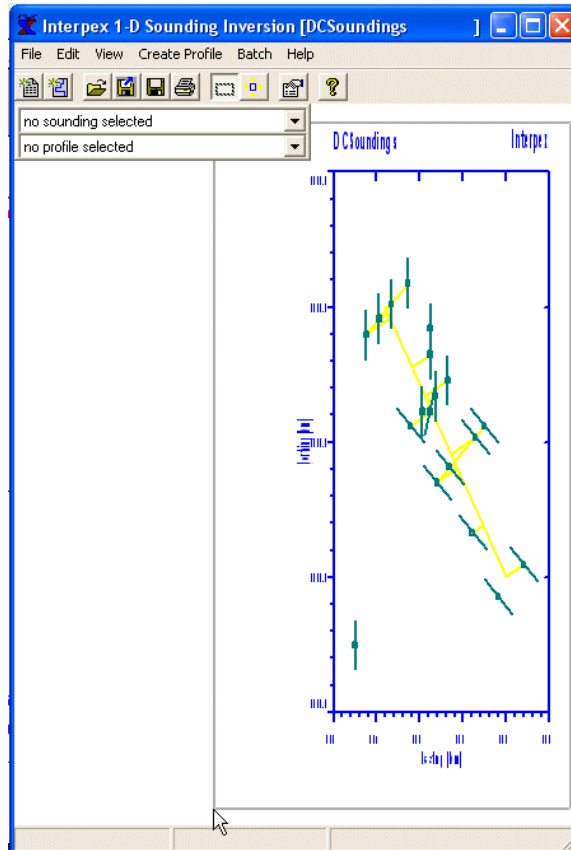
Gridlines on minor tick marks require grid on major tick marks as well. Turning on minor grid lines turns on major. Turning off major turns off minor.

Zooming the Map Display



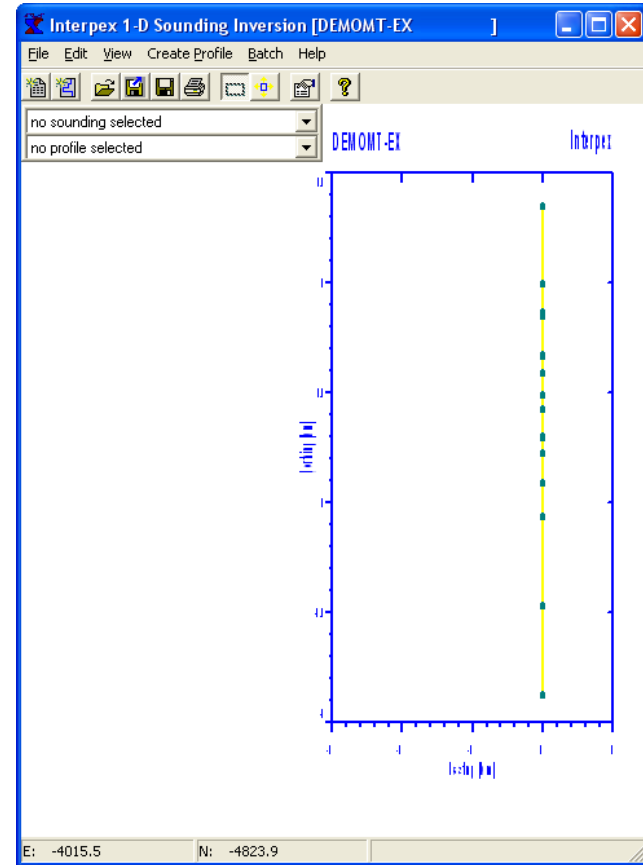
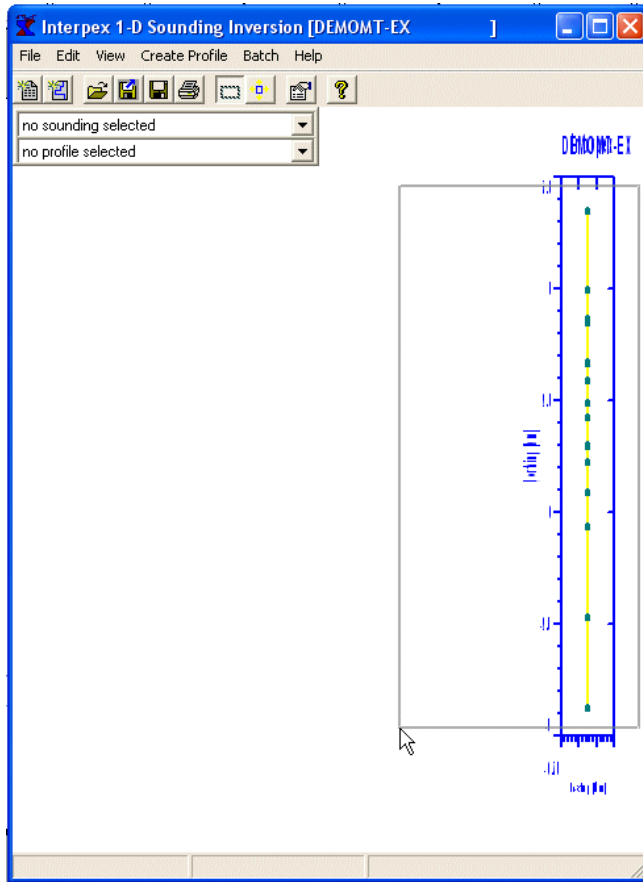
To zoom in the map display, use the mouse to draw a rubber-band box by depressing the left button. Release the mouse to zoom the display. Because the scales are selected for even numbers, the zoom may be slightly larger than selected.

Zooming the Map Display



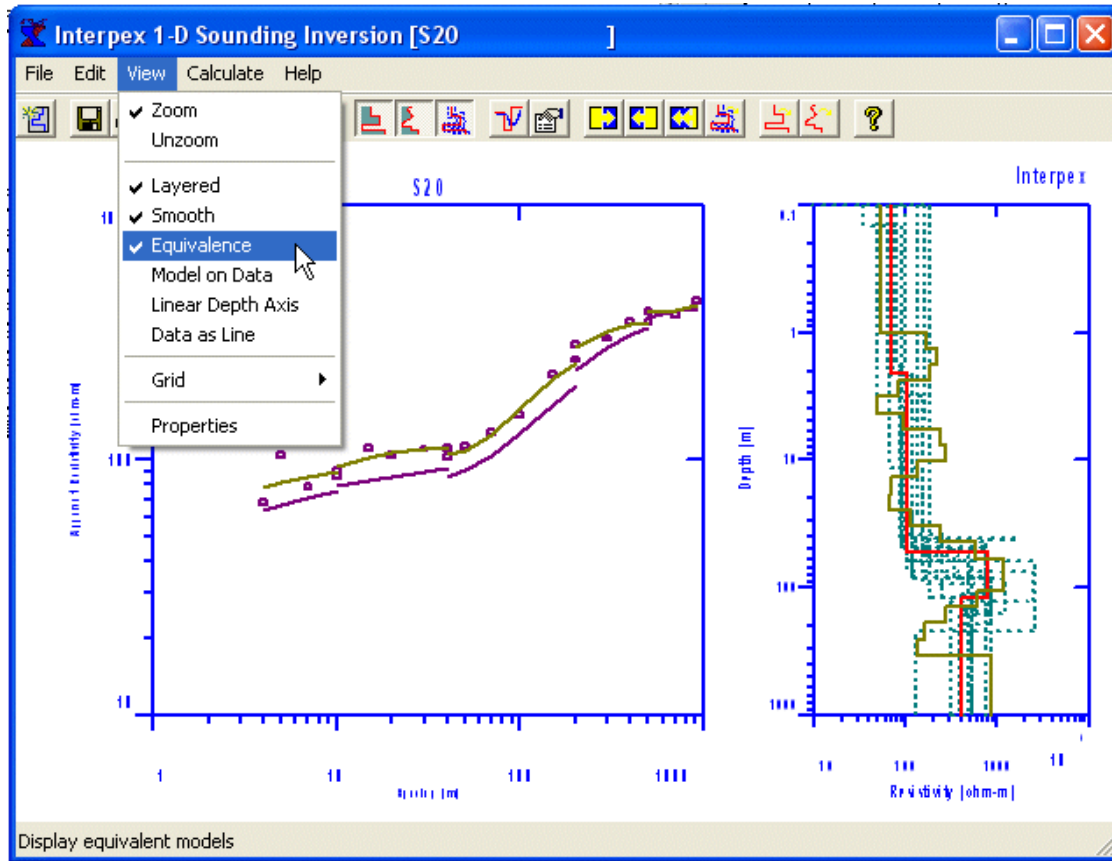
To zoom out the map display, use the mouse to draw a rubber-band box larger than the existing graph. Release the mouse to zoom the display. Because the scales are selected for even numbers, the zoom may be slightly larger than selected.

Zooming the Map Display



Sometimes the map display will be tall and skinny and this makes the user name and data base name plot on top of each other. This can be fixed by zooming the display to make it wide enough to accommodate both labels.

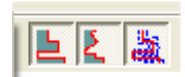
Managing the Sounding Display



The model display can contain the Layered and/or Smooth model.

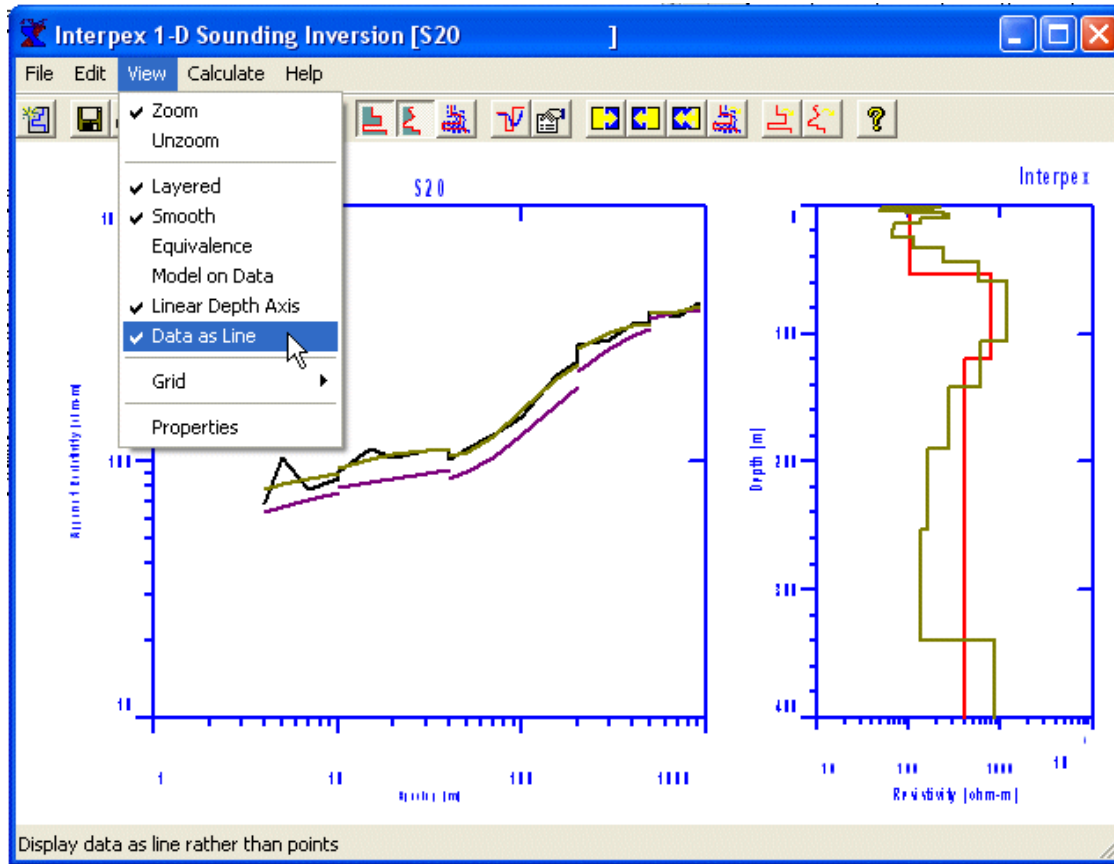
The appropriate synthetic curves are also displayed at the same time. Equivalent models are not displayed unless Layered models is selected.

The toolbar buttons for these options behave accordingly:



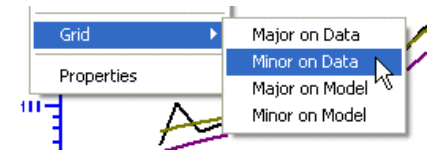
Zoom works the same as for the map except that either the data or model graphs are zoomed while Unzoom autoscales both data and model graphs.

Managing the Sounding Display



The model can be displayed with a linear axis instead of a log axis.

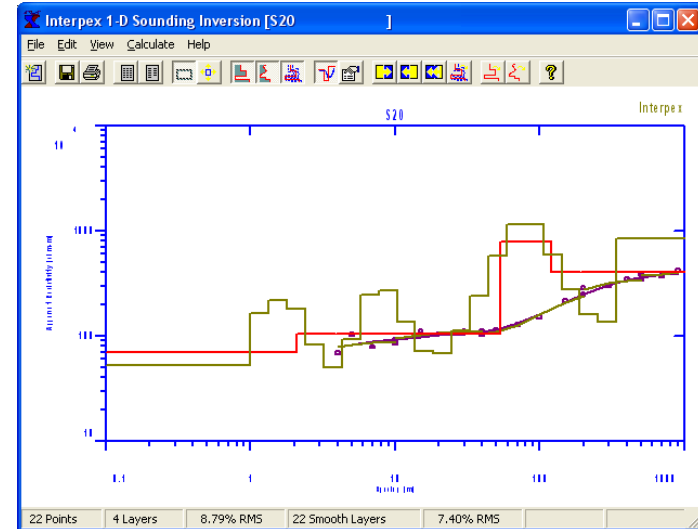
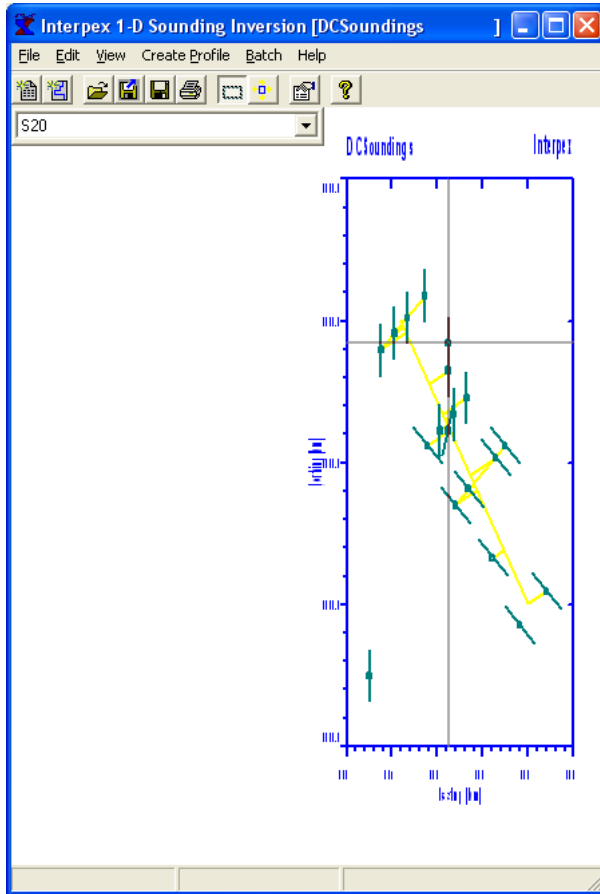
The data are normally displayed as boxes but they can also be displayed as a line.




Gridlines can be selected separately for the data and model graphs.

Linear displays of model depth work well for soundings with low dynamic range while a logarithmic depth axis is better for those with large dynamic range.

Managing the Sounding Display

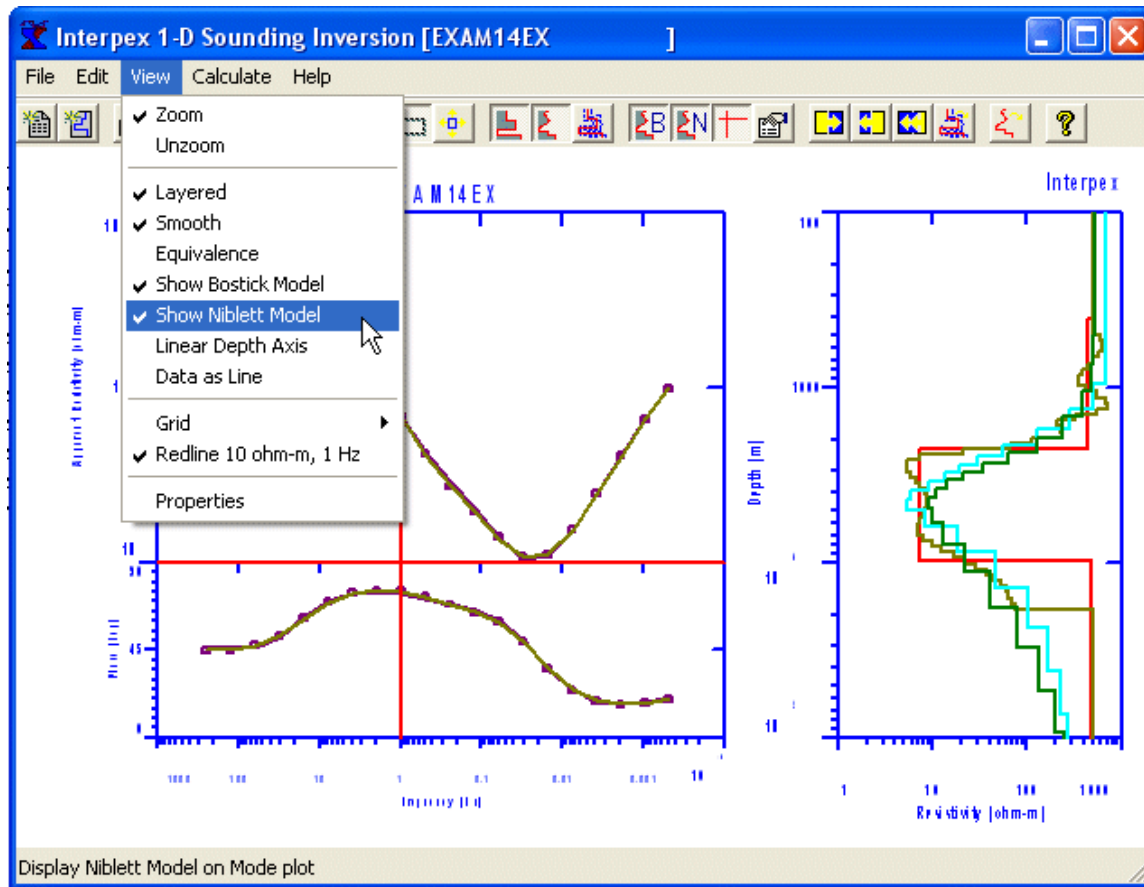


Some of the View management tools are only available for certain sounding types.

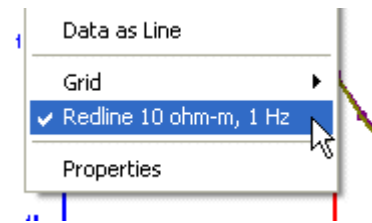
For DC Resistivity (and IP), Models can be displayed on the same graph as the data. Toggle View/Model on Data to control this or press 

When a sounding is selected from the map, the location of the sounding is marked and the sounding is highlighted. Soundings cannot be selected from the map when a profile is selected and displayed. Select soundings from the profile instead.

Managing the MT Sounding Display



Models derived using the Bostick or Niblett method can be displayed on the model axis and used as a guide to developing a starting model for the inversion.

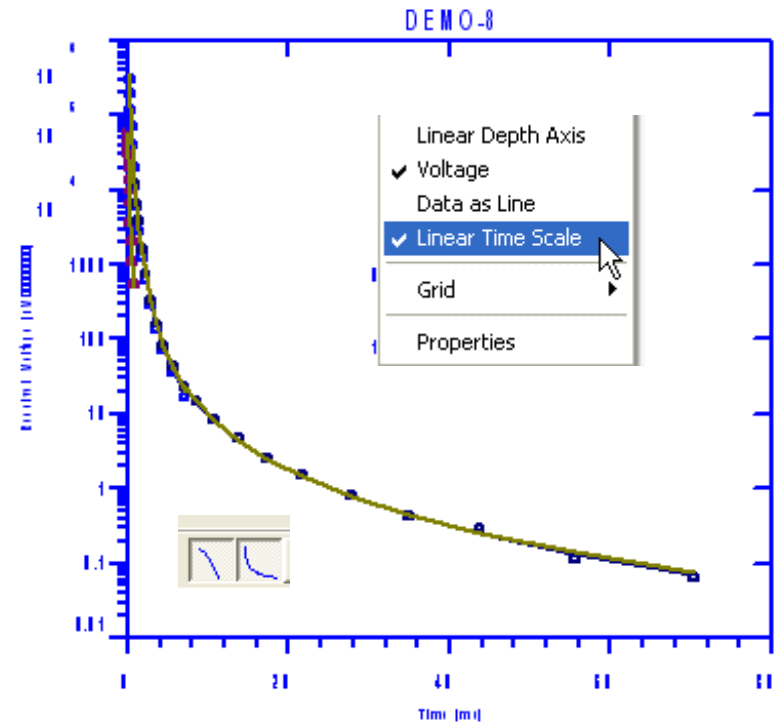
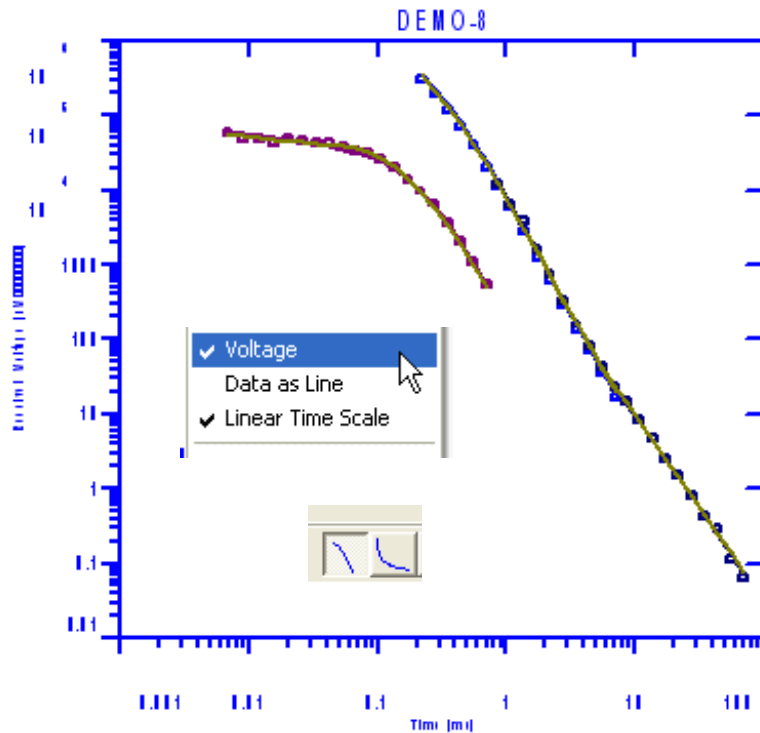


Also, a red line can be displayed at 10 ohm-m and 10 Hz.

These are available only for MT data.

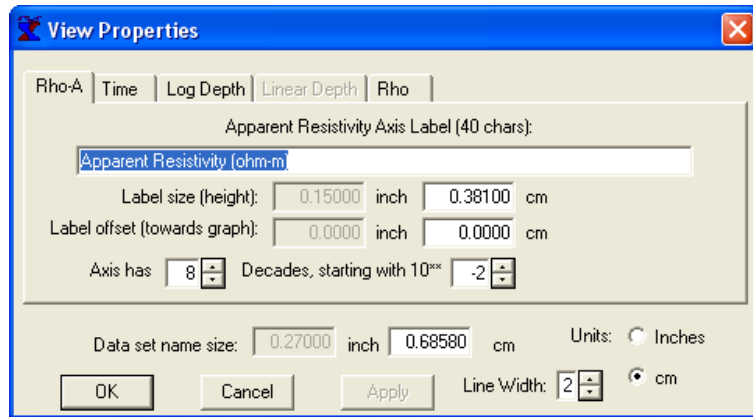
MT Data can be easily converted to a depth model using well known algorithms developed by Bostick or Niblett.

Managing the TEM Sounding Display



TEM Data can be displayed as voltages instead of apparent resistivities. Also a linear time axis voltage display is available. Toolbar buttons show the state of these options and are used to toggle them. The linear time scale is for voltage only.

Managing the Sounding Display

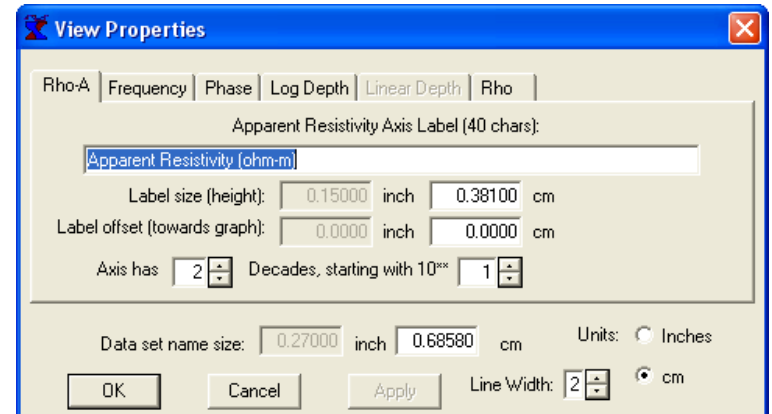


To some extent, the View Properties dialog depends on the type of data; specifically on the number of graphs.

Either the log depth or linear depth tab is grayed, depending on which type of axis is selected.

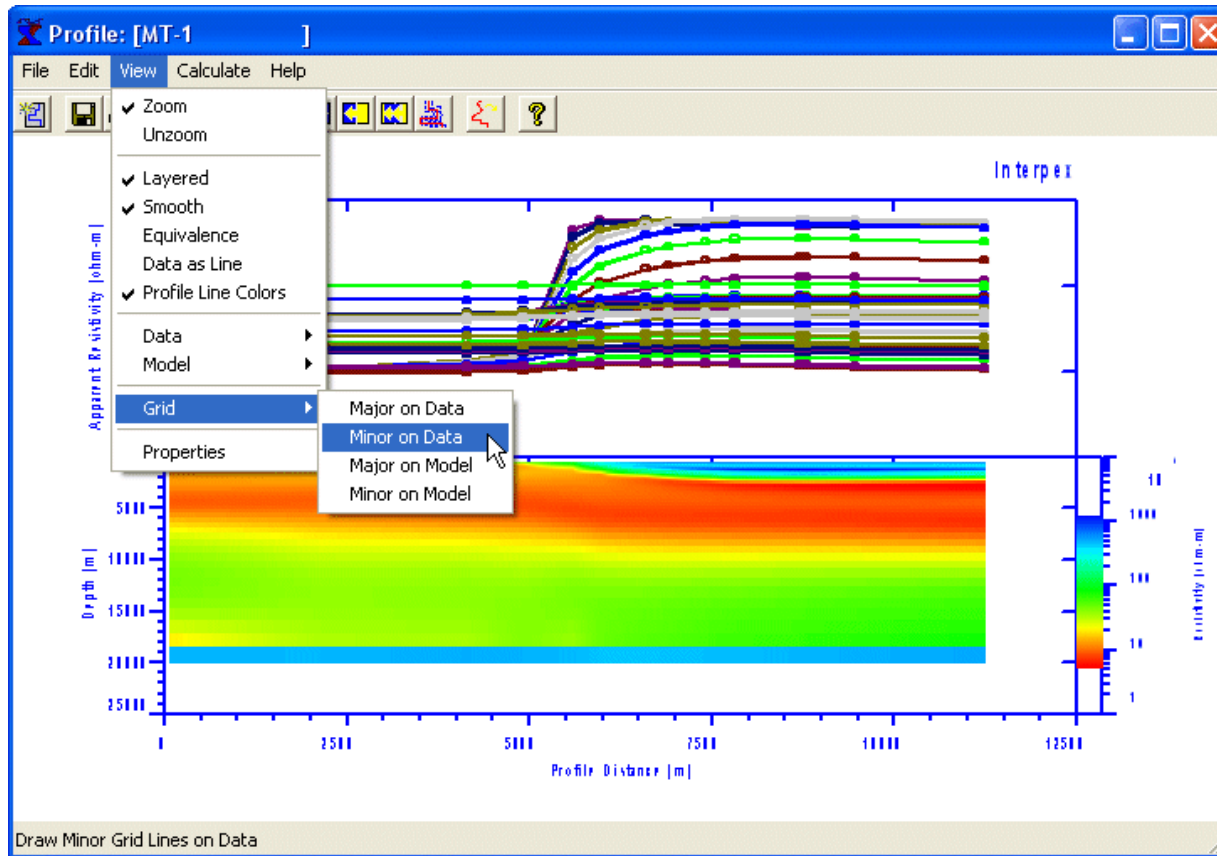
The properties dialog allows for editing of the axis titles and all of the features of the axes. There are also controls for position and size of the axis labels and the Data Base name size.

The line width is for making heavier lines on printed output.



View Properties can be invoked by using View/Properties, pressing the toolbar button  or by right-clicking in the model or data graph while not pointing at anything.

Managing the Profile Display



For the profile display, the gridlines on the model and data are controlled separately as they are on the sounding display.

Consistent data can be displayed as profiles, with data displayed as boxes (alternatively as line) and synthetic as lines.

Profile data can be plotted as different colors by selecting View/Profile Line Colors. Profile display management is discussed in detail in Working with Profiles in IX1D v 3 (IX1DProfileTutorial.PPS).