



NEEShub.org – Getting started with inDEED

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Brief Description:	Instructions for loading and plotting data using the inDEED tool		

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Change History

Description and Version	Created / Updated By	Date of Change
NEEShub – Getting started with inDEED	(Created) Rachelle Howell	4/23/2010
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Introduction

This document will introduce you to the inDEED visualization and analysis tool. In order to use this tool, you will need data files that are in a CSV (comma delimited) format and the *.ind file for your instrumentation, which is created by the Specimen Authoring Tool. The data files need to be in the same directory in the workspace as the *.ind file (Figure 1).

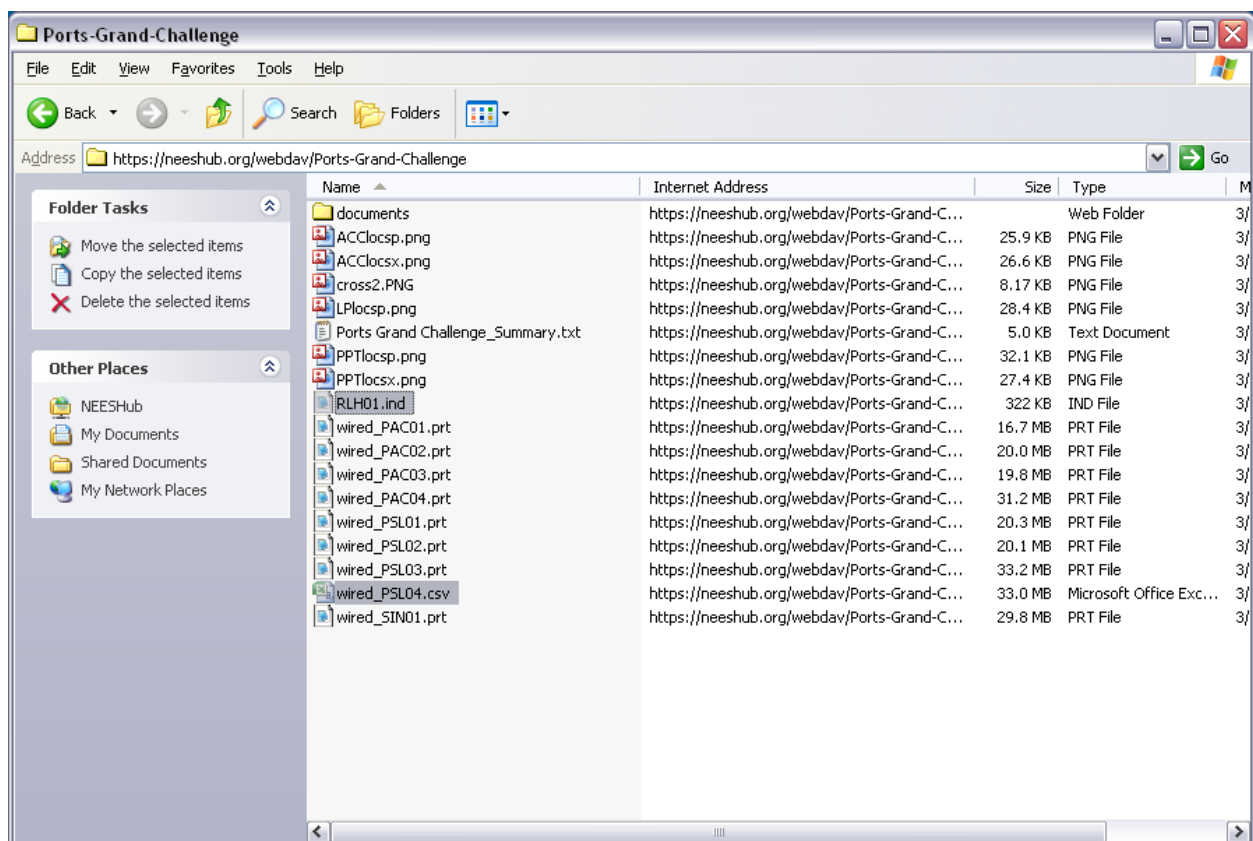


Figure 1: Data files and *.ind file in the same directory in the NEESHub workspace

1.0 Loading Data (File -> Open -> *.csv file)

Launch inDEED. From the “File” menu, choose “Open”, and browse to your comma delimited data file (Figure 2). The tool will automatically locate the *.ind file and load it so that all of the instruments, groups, specimen views, and notes made in the Authoring Tool are now available along with the data from the selected data file (Figure 3).

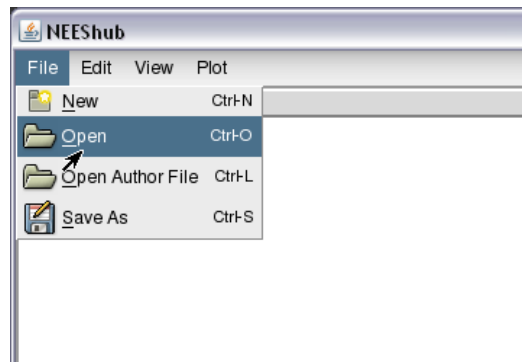


Figure 2: Loading a data file

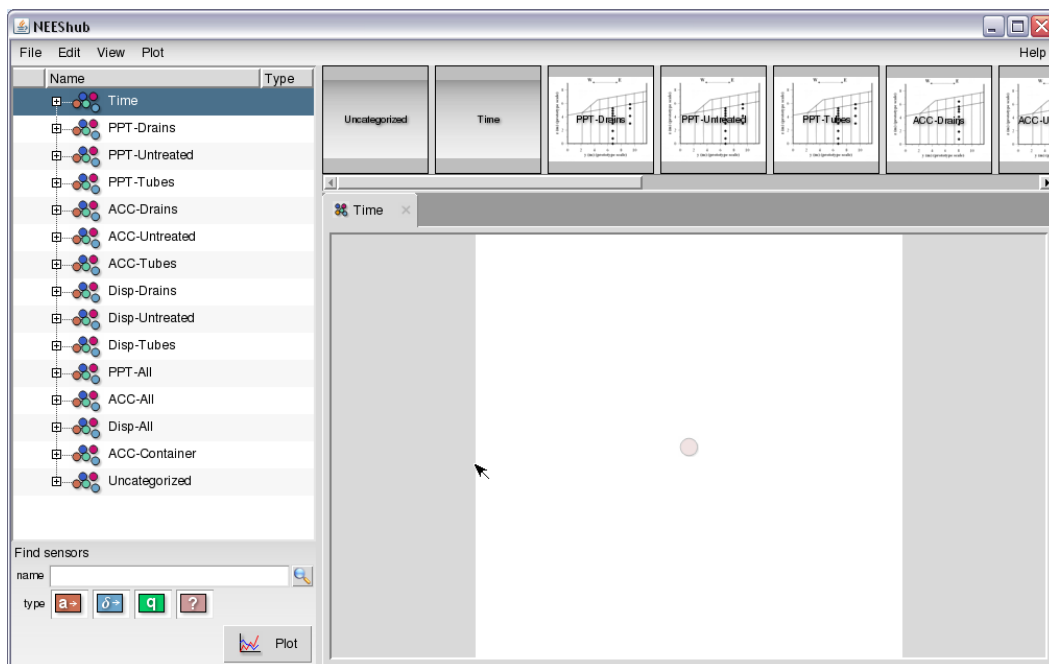


Figure 3: inDEED automatically loads the *.ind file

2.0 Viewing the Instruments

The instrument list and specimen views are loaded from the *.ind file. The instrument list is in the left panel and the specimen views appear in the storyboard panel. Selected specimen views will appear in the large area in the bottom right. Multiple specimen views can be open simultaneously and each will have its own tab (Figure 4). The instrument list panel can be widened or narrowed by grabbing the right panel frame and dragging it (a double arrow \leftrightarrow will appear when your mouse is in the right spot). Below the instrument list is a search text box that can be used to search for a particular instrument. Below the search text box are the instrument type buttons, which are all selected by default. Deselecting a type button will remove all instruments of that type from the instrument list.

The “View” menu contains the options for viewing the instruments and for selecting which tool panels are displayed (Figure 5). “Tree View” sorts the instruments by group while the “List View” does not. If you choose to sort the instruments based on name, type, etc. , the tool will automatically switch to list view (Figure 6). “Show Storyboard” displays / hides the storyboard panel. “Show Sensor List” displays/hides the instrument list. “Expand Groups” expands all of the groups so that the individual instruments are displayed and “Collapse Groups” hides the individual instruments and displays only the group names. Groups may also be collapsed/expanded in tree view by clicking on the - / + next to the group name. The remaining options (“Sensor Type”, “Measurement Type”, Measurement Units”, “Sensor Direction” and “Sensor Description”) may be selected / deselected to show / hide additional sensor information.

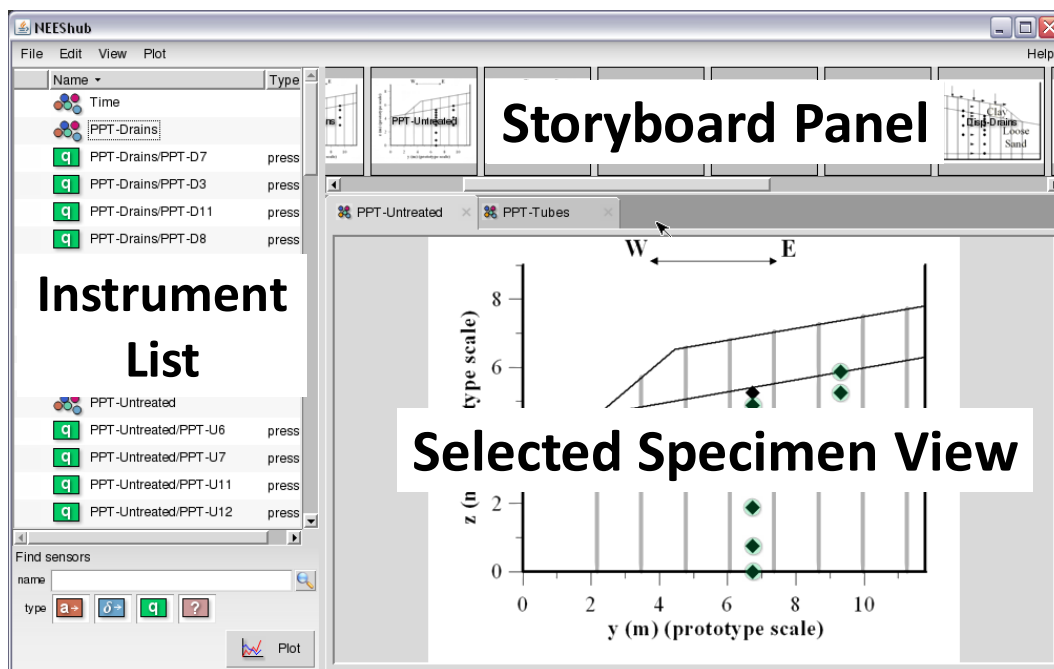


Figure 4: Viewing the instruments

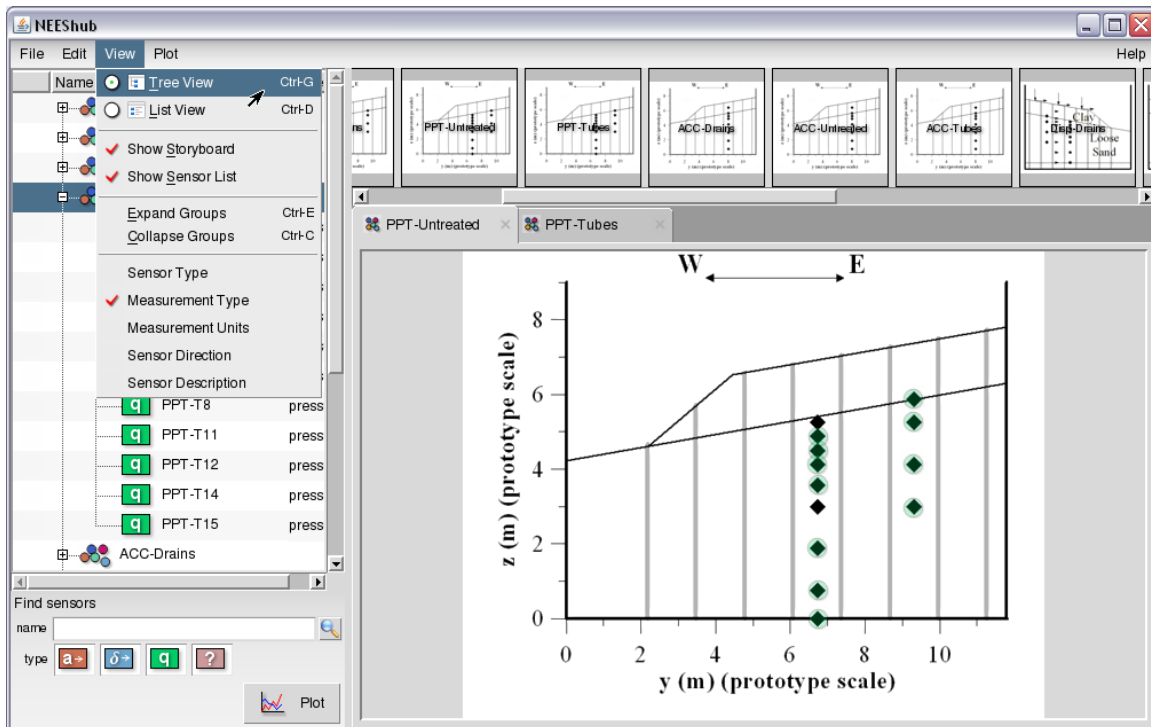


Figure 5: The "View" menu

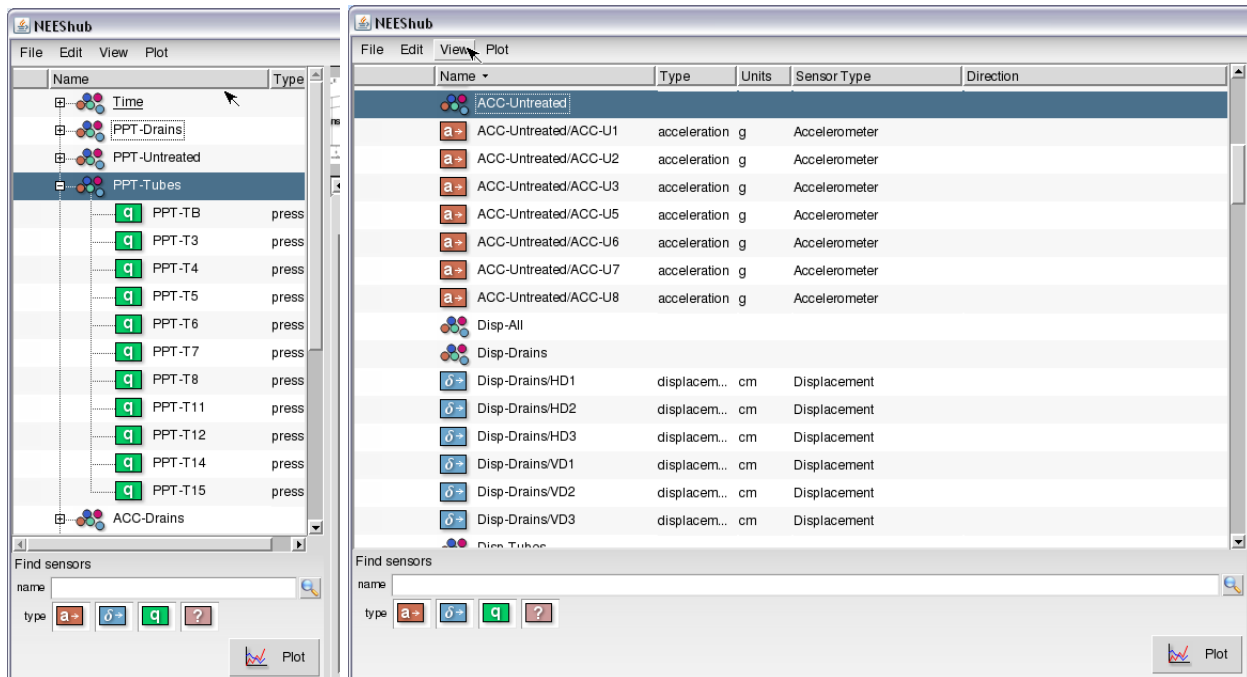


Figure 6: Tree view (left) and List view (right) sorted by name

3.0 Selecting Instruments

Selecting the instruments whose data you want to plot can be done either from the specimen views or from the instrument list. If you select more than one instrument type, e.g., pore pressure transducers and accelerometers, which instruments get plotted will depend on the type of plot that you create.

3.1 *Selecting Instruments from the Specimen View*

Select a specimen view by clicking on it in the storyboard bar at the top of the tool. Then, select instruments by double clicking them in the large specimen view. When an instrument is selected, a red checkmark will appear on the instrument marker (Figure 8). You can unselect a marked instrument by double clicking it again.

Additional notes:

You may select instruments from multiple specimen views.

If you hover the mouse over the instrument a text box will appear with the instrument name and type (Figure 9).

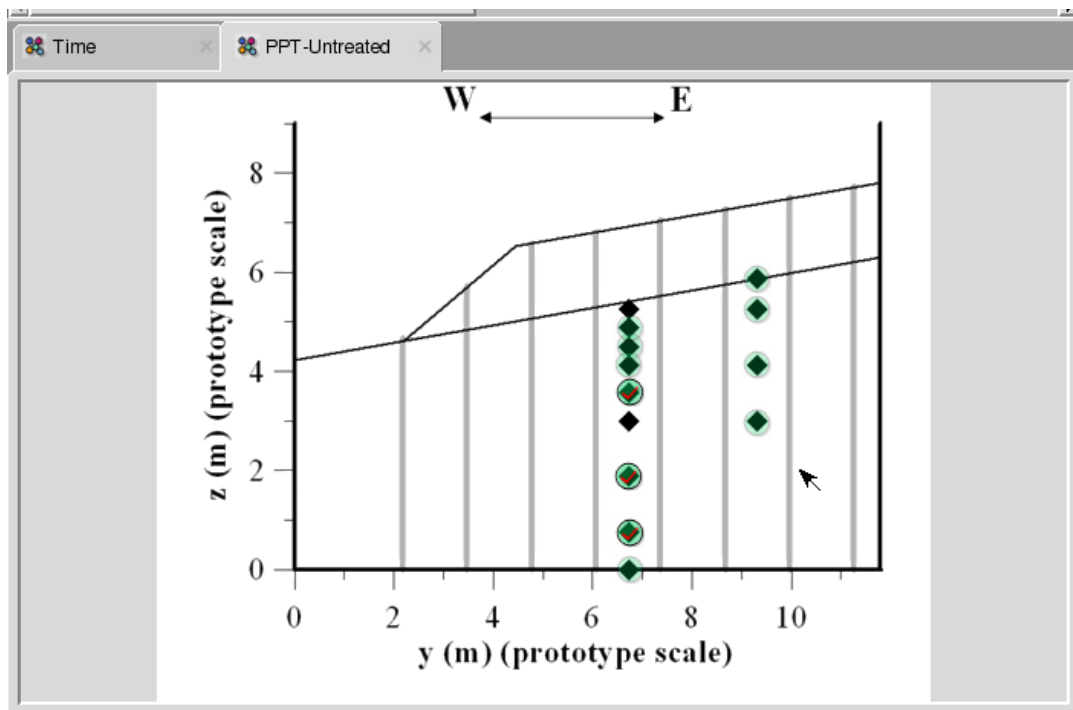


Figure 7: Selected instruments with red check mark on the instrument marker

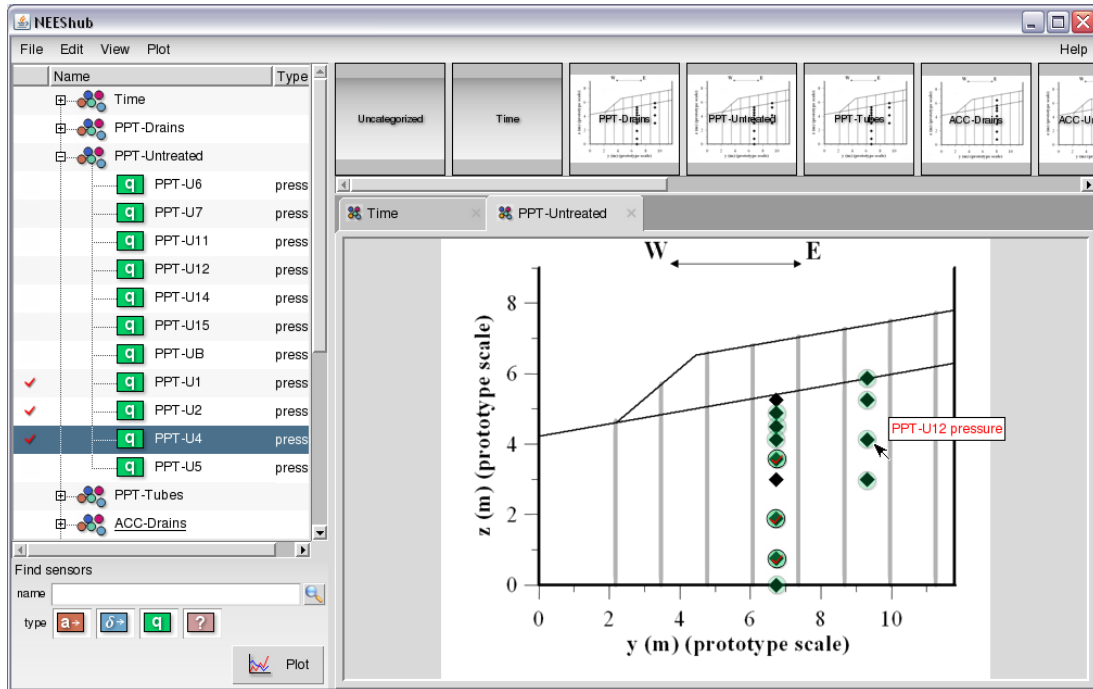


Figure 8: Text box with instrument name and type

3.2 Selecting Instruments from the Instrument List

There are several ways to select instruments from the instrument list. The first way is to click the column to the left of the instrument. A red check will appear indicating that the instrument has been selected for plotting (Figure 10). To deselect the instrument, click the red check and it will disappear.

You can highlight several instruments by highlighting the first instrument, holding down the shift key, and then clicking on the last instrument you want to highlight. You can also hold down the control key and highlight multiple instruments by clicking on them individually. Once you have multiple instruments selected you can select them by right clicking with the mouse and choosing “select” from the menu (Figure 11). From this menu, you can also deselect instruments or toggle the instrument status, meaning that an instrument that was selected will be deselected and an instrument that was not selected will be selected (Figure 12). The right-click menu options also work for single instruments, not just selections of multiple instruments.

In the right-click menu there are also “Select All” and “Select None” options. The “Select All” option will select all instruments (not just highlighted instruments), and the “Select None” option will deselect all instruments (Figure 13).

The same options available in the right-click menu can also be found in the Edit menu (Figure 14).

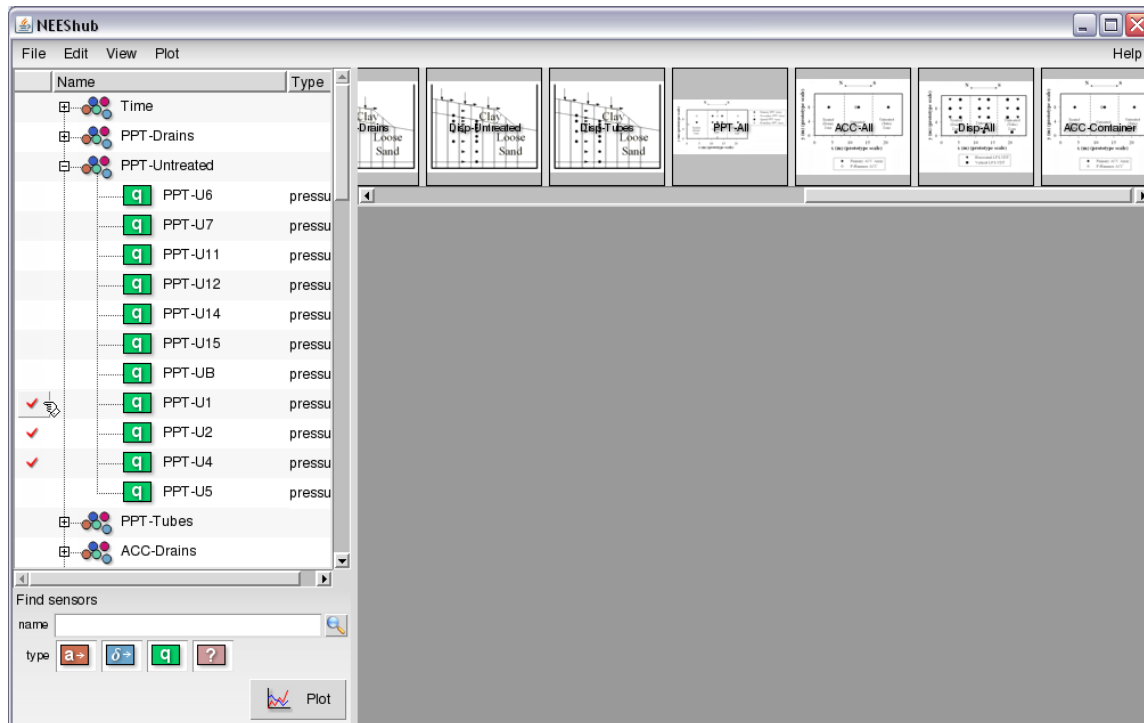


Figure 9: Selecting an instrument from the instrument list

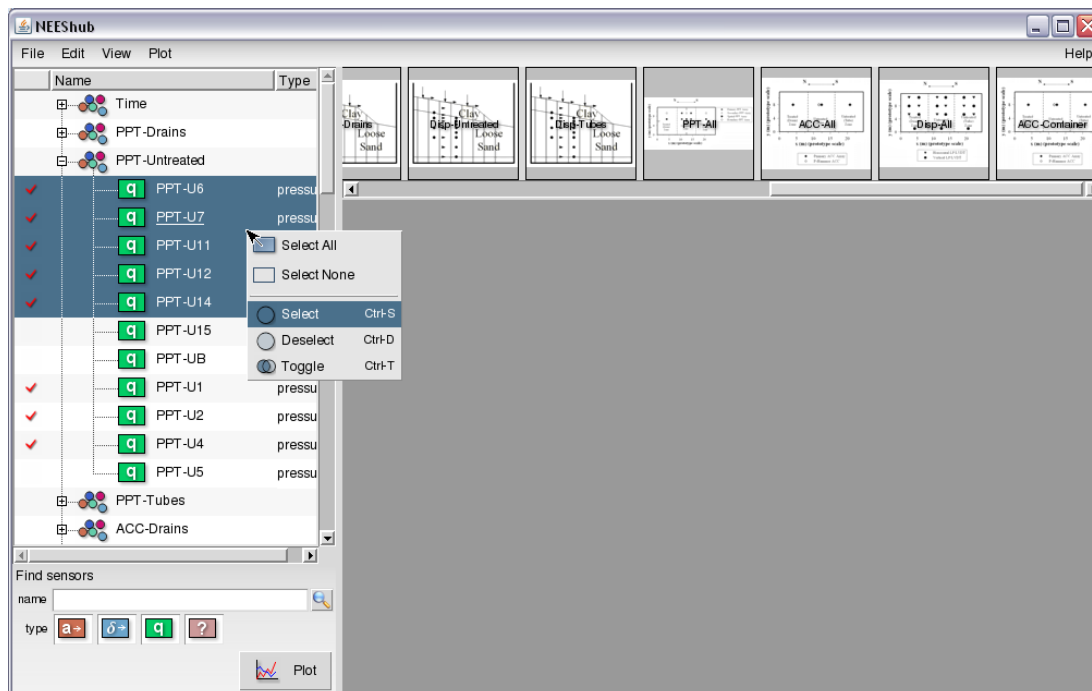


Figure 10: Selecting several instruments at once

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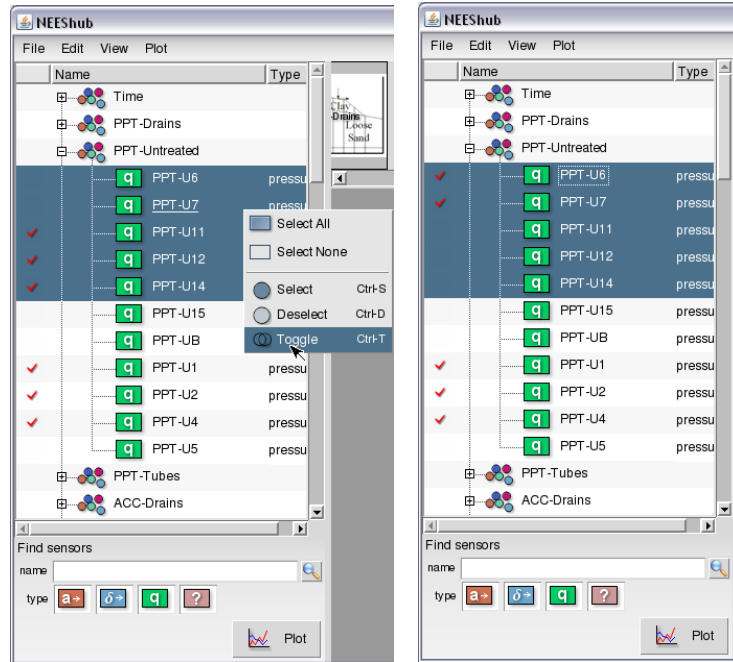


Figure 11: Using the toggle function

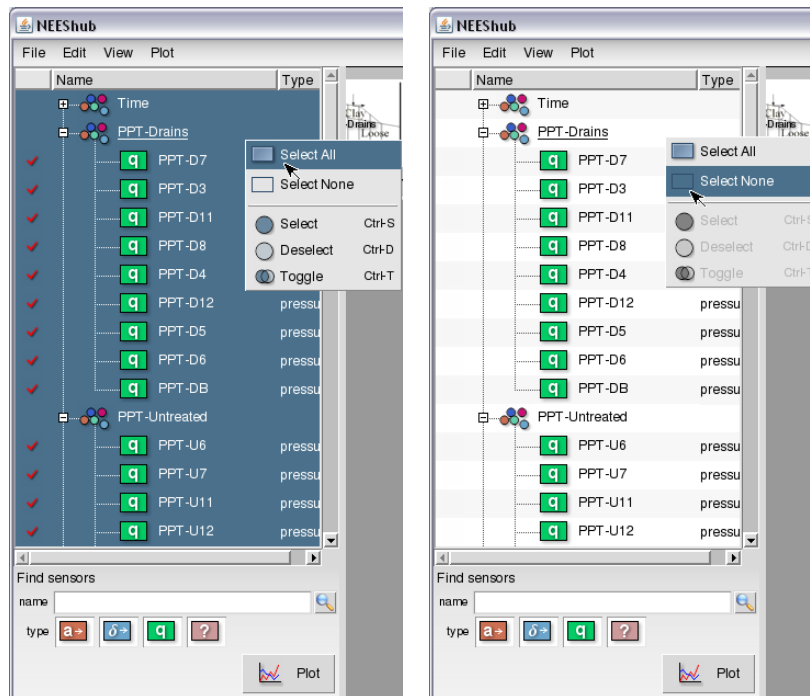


Figure 12: Select All and Select None Functionality

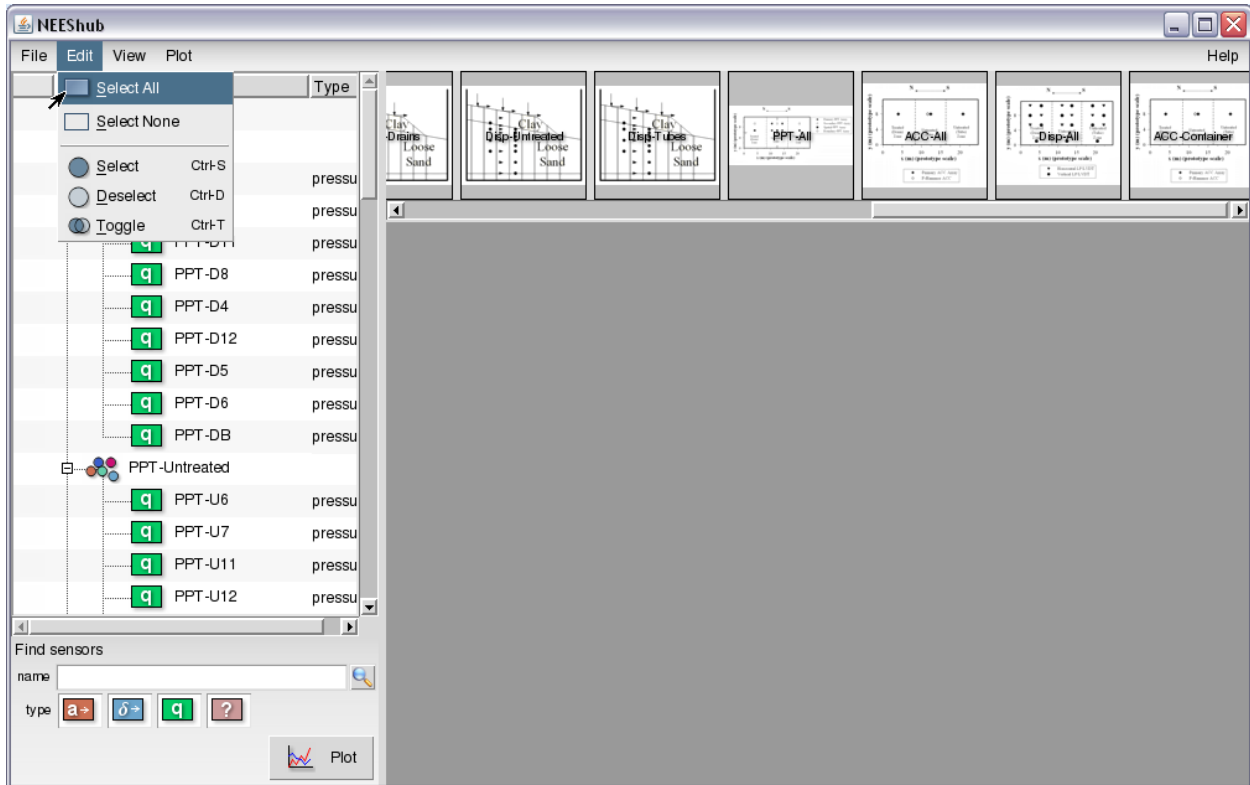


Figure 13: The "Edit" menu

4.0 Creating Plots

Once you have selected instruments, you can begin making plots. The “Plot” menu contains separate plotting options for acceleration, displacement, and pressure (Figure 14). Choose the plot type appropriate for your selected instruments (Figure 15). You can create multiple plots; each one will appear in a new tab. If you try to create a plot that is not appropriate to the type of instruments you have selected, the plot will be empty.

Clicking the “Plot” button at the bottom of the left-side panel will create a plot of the same type as the last plot that was created. If you have not yet created a plot, the “Plot” button will create an Acceleration/Sample # plot. If you do not have any acceleration instruments selected, this plot will be empty.

The “New Template” and “Plot Selected Sensors” options are not currently functional, but will be in future versions.

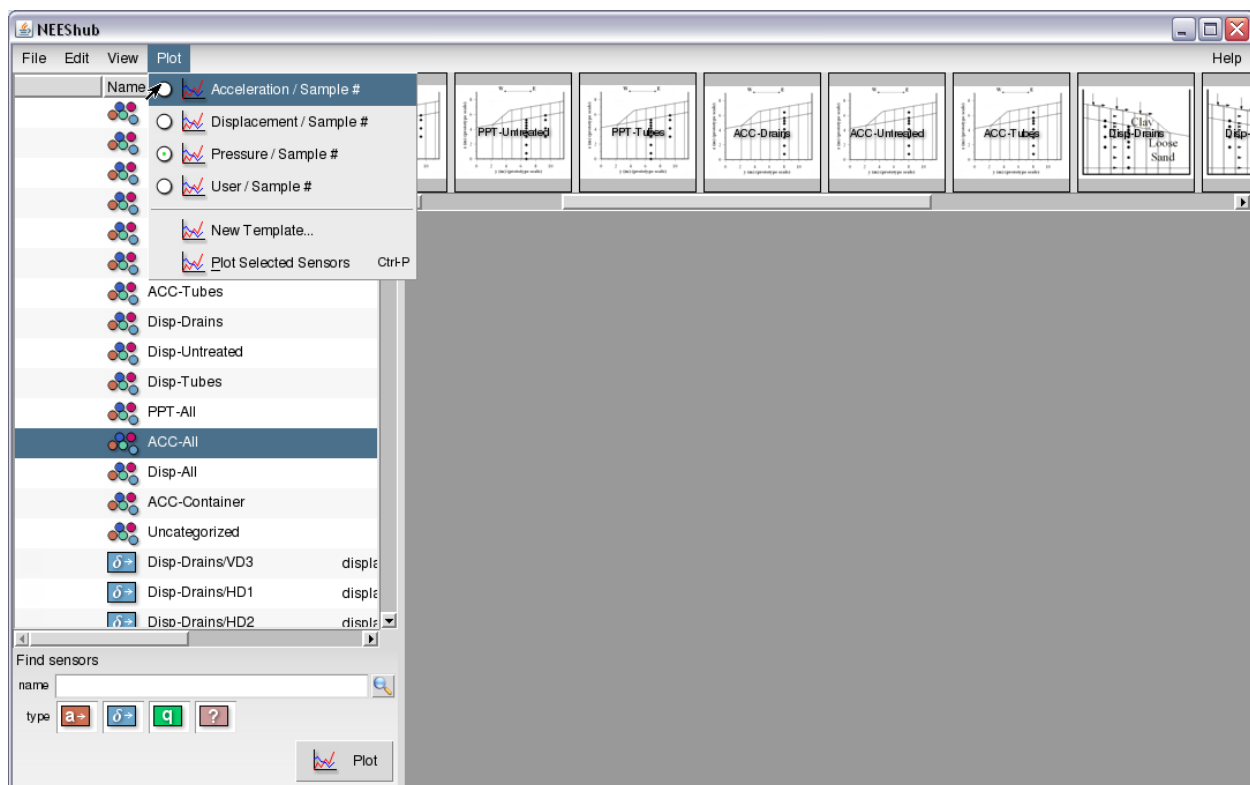


Figure 14: The "Plot" menu

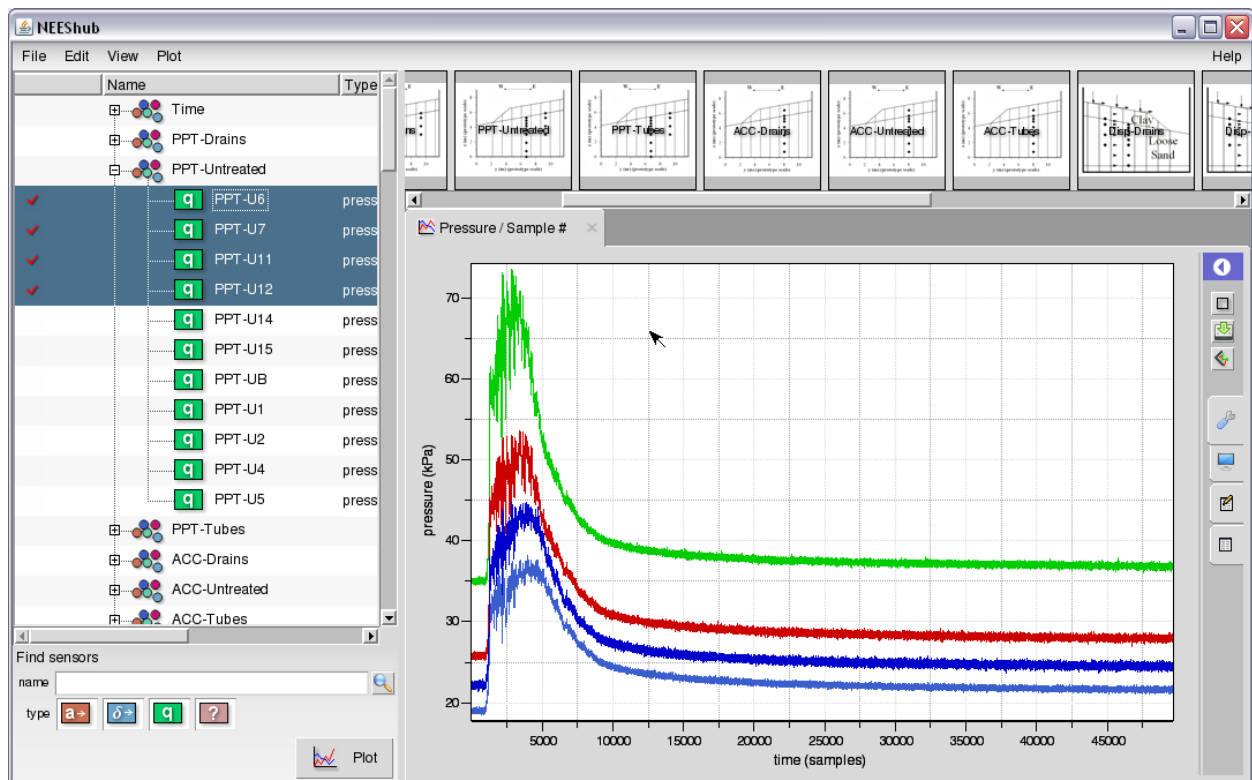


Figure 15: A pressure/sample # plot



5.0 Editing Plots

5.1 *The Sidebar*

The sidebar (Figure 16) contains options for editing the plots you have created. You can hide or show a selected instrument, raise an instrument (moves it back), lower an instrument (brings it to the front), rename the instrument, and recolor the plot. If you select two instruments, you can find the difference or the average of those two instruments. If you select more than two instruments, you can find the average of those instruments, but not the difference. You can recolor multiple instruments at once. You can delete the average and difference plots by highlighting them and selecting delete.

In the panel next to the legend are three buttons and four tabs. The top button resets the zoom level. You can zoom in on parts of the plot by left clicking on the plot window, creating a zoom box, and left clicking again to finalize the shape of the zoom box (Figure 17). You can also reset the zoom level by right-clicking in the plot window. If you have zoomed several times, it will back you up by one zoom level for each right-click.

The second button in the sidebar allows you to download the plot data. There are two options, one to download the data as comma-separated values and one to download the data as an image. The first option is not currently functional. The second option opens an image save dialog box with several options that you can customize (Figure 18). Depending on the file format that you have chosen, you may need to rename the file with the appropriate file extension (*.png). Some of the file formats are not currently functional and for those formats, clicking the save button will not produce a save dialog box. The third button in the sidebar inverts the graph axes; the x-axis becomes the y-axis and vice versa.

Below the three buttons are four tabs. The first tab opens and closes the sidebar while the other three tabs are not currently functional.



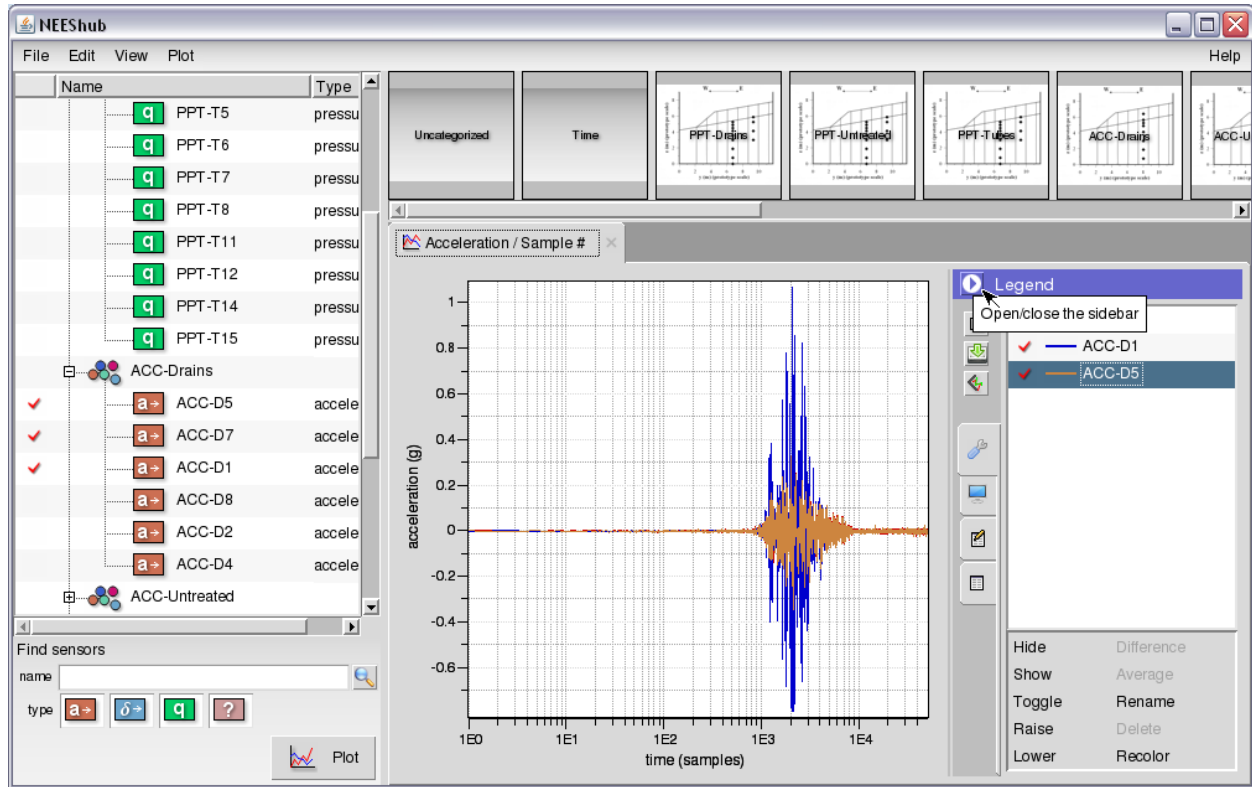


Figure 16: The sidebar

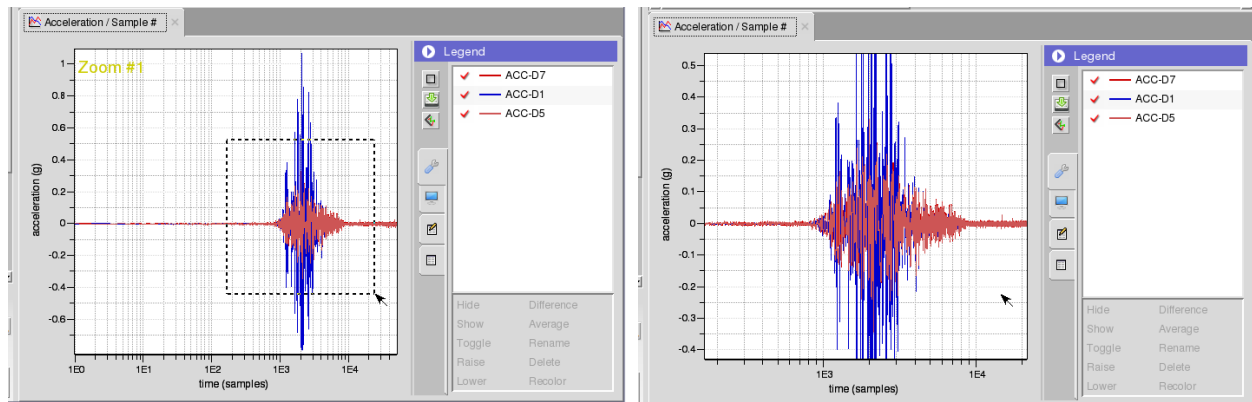


Figure 17: Zooming in on a selection

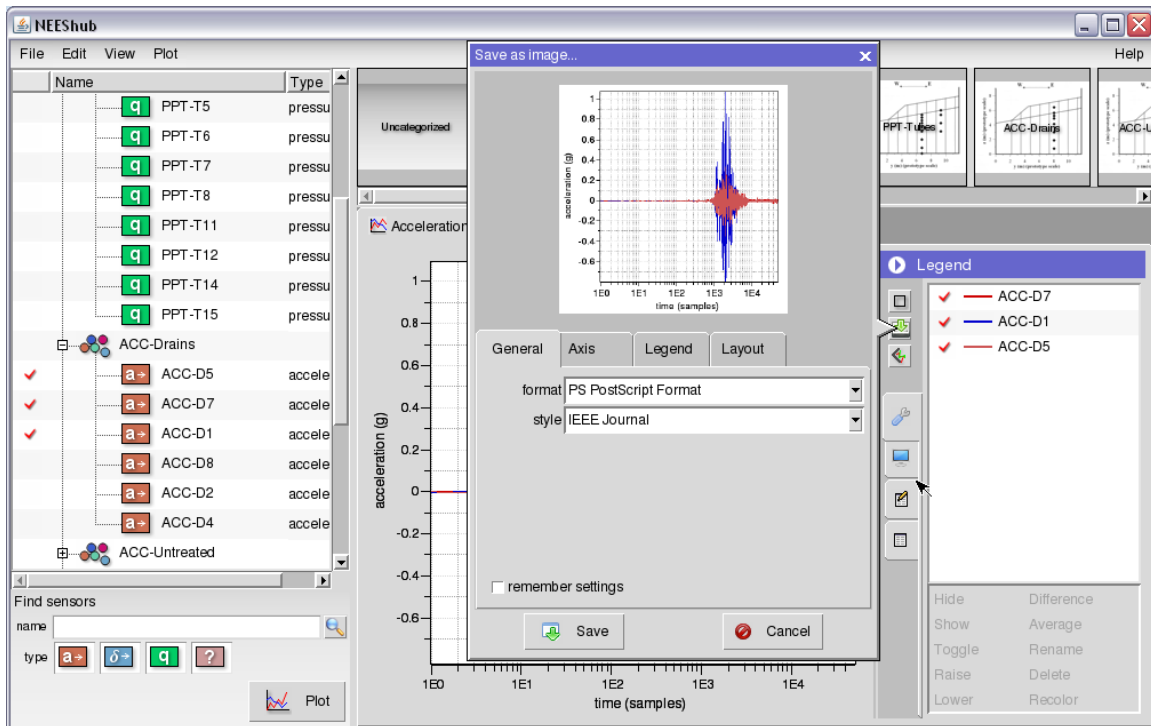


Figure 18: Downloading data as image file

5.2 The Axes

Axis information can be edited through a dialog box that appears when you right click on the axis (Figure 19). You can change the axis label, maximum, minimum, number format, and scale type (linear or logarithmic).

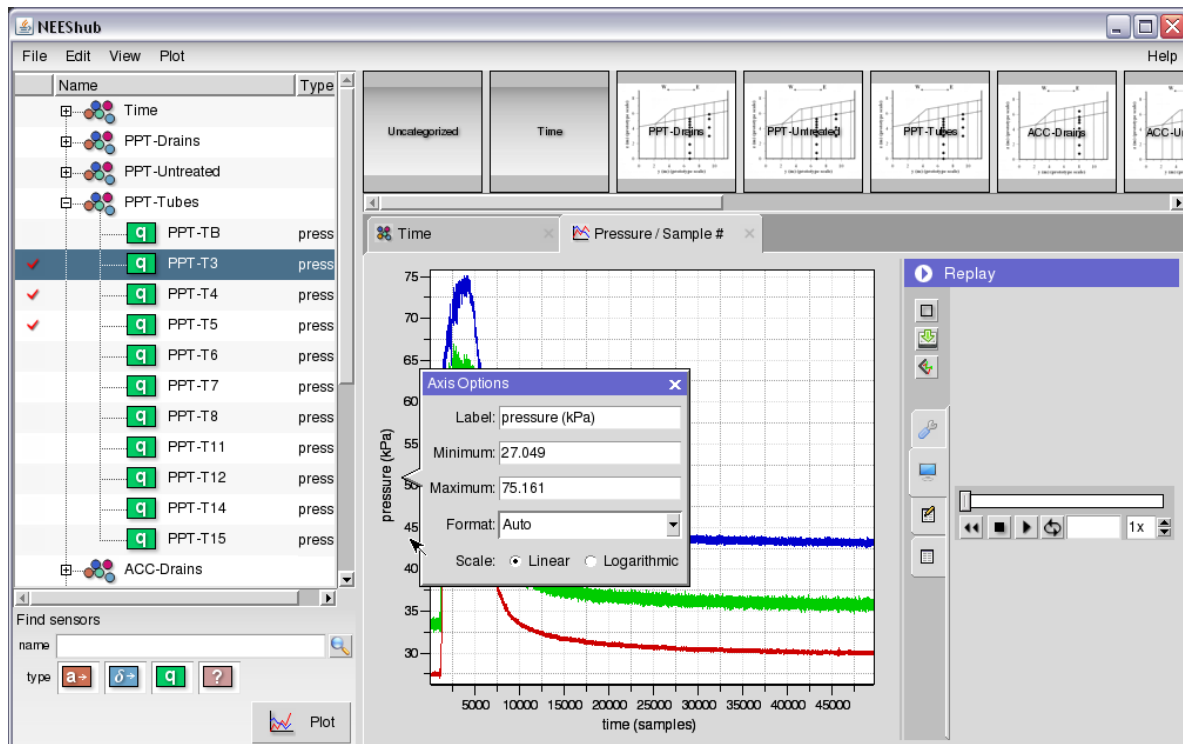


Figure 19: Axis options