Viewing Data for TPV6 and TPV7
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1   Introduction

CVWS (the Code Validation Web Server) lets you view the data that various users have submitted for code validation problems. Using CVWS, you can:

- Graph all the data submitted by a user.

- Compare the data for two or more different locations.

- Compare the data from two or more different users.

- Graph one data field versus another, at a single location.

1.1   Logging in and Selecting a Problem

To log in, start your web browser and go to the CVWS home page. On the SCEC web server, the home page is at this address:

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http://scecdata.usc.edu/cvws/cgi-bin/cvws.cgi
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Click on "View Data," and then log in using your user name and password. Remember that passwords are case-sensitive.

You are then presented with a list of code validation problems. Find the problem you want, and click the "Select" button.

You will then see a list of users who have submitted data for the problem.

1.2 Navigating the Site

You navigate through the site by clicking buttons on the web pages.

Avoid using your browser's Back or Forward buttons. If you use the Back or Forward buttons, you may get error messages from your browser.

1.3 Software Compatibility

We have found that some ad-blocking software interferes with the graphs displayed on CVWS. Apparently, some ad-blocking software mistakenly believes that the graphs are advertisements.

If you have ad-blocking software installed on your computer, we recommend that you disable it while using CVWS.

2 Browsing Data from a Single User

These instructions assume you are starting from the user list, which says "Select User(s)" at the top of the page.

Step 1. Find the user you want, and click "Select."

The software displays a list of files submitted by that user.

Step 2. Do any of the following:

- To display time-series data, find the station you want and click "Graph." The software displays graphs of all the data submitted for that station.

- To display a rupture front contour-plot, find the contour plot you want and click "Graph." The software displays a graph of the contour plot.

- To display raw data, in text form, find the station or contour plot that you want and click "Raw Data."

When you graph time-series data, you can apply a low-pass filter to remove any high-frequency noise or oscillations. To do this, scroll down to the bottom of the page, enter the desired filter cutoff frequency in Hertz, and click "Apply Changes."

Additional graphing options are described later.

3 Graphing One Data Field Versus Another

You can make a graph that shows the behavior of one data field as a function of another data field. For example, you could plot shear stress versus normal stress to see how a model's friction is behaving.

These instructions assume you are starting from the user list, which says "Select User(s)" at the top of the page.

Step 1. Find the user you want, and click "Select."

The software displays a list of files submitted by that user.

Step 2. Find the time-series file you want, and click "X-Y Plot."

The software displays a list of data fields.

Step 3. Use the radio buttons at the left to select the fields you want to plot on the X- and Y-axes, and then click "Plot Selected."

The software draws a graph showing the relationship of the two data fields.

At the bottom of the page, there is a box where you can adjust graphing preferences or apply a low-pass filter. This is described later.

4 Comparing Time-Series Data for Different Stations

CVWS can plot time-series data from different stations on a single page, so you can compare them easily. It can also superimpose the graphs, for a very detailed comparison.

These instructions assume you are starting from the user list, which says "Select User(s)" at the top of the page.

Step 1. Find the user you want, and click "Select."

The software displays a list of files submitted by that user.

Step 2. Do one of the following:

- To compare all the stations, click "Select All" in the section labeled "On-Fault Time Series."

- To compare selected stations, click the checkboxes to the left of the stations you want, and then click "Select Checked."

The software displays a list of data fields.

Step 3. Find the data field you want, and click "Graph."

The software draws graphs for all the stations, and displays them on a single page for easy comparison. Each graph is shown in a different color.

Note: A maximum of twelve graphs fit on a single page. If you selected more than twelve stations, then they are displayed on several pages. There are buttons you can use to go to the next page, the previous page, the first page, and the last page.

Step 4. To superimpose the graphs, scroll down to the bottom of the page. Check "Superimpose graphs" and then click "Apply Changes."

The software redraws all the colored curves, on a single graph. It also displays a key showing which color is used for each station.

Additional graphing options are described later.

5 Comparing Time-Series Data from Different Users

CVWS can plot time-series data from different users on a single page, so you can compare them easily. It can also superimpose the graphs, for a very detailed comparison.

These instructions assume you are starting from the user list, which says "Select User(s)" at the top of the page.

Step 1. Do one of the following:

- To compare all the users, click "Select All."

- To compare selected users, click the checkboxes to the left of the users you want, and then click "Select Checked."

The software displays a list of possible files.

Step 2. Find the time-series file you want, and click "Select."

The software displays a list of data fields.

Step 3. Find the data field you want, and click "Graph."

The software draws graphs for all the users, and displays them on a single page for easy comparison. Each graph is shown in a different color.

Note: A maximum of twelve graphs fit on a single page. If you selected more than twelve users, then they are displayed on several pages. There are buttons you can use to go to the next page, the previous page, the first page, and the last page.

Step 4. To superimpose the graphs, scroll down to the bottom of the page. Check "Superimpose graphs" and then click "Apply Changes."

The software redraws all the colored curves, on a single graph. It also displays a key showing which color is used for each user.

Additional graphing options are described later.

6 Comparing Contour-Plots from Different Users

CVWS can draw contour plots from different users on a single page, so you can compare them easily. It can also superimpose the graphs, for a very detailed comparison.

These instructions assume you are starting from the user list, which says "Select User(s)" at the top of the page.

Step 1. Do one of the following:

- To compare all the users, click "Select All."

- To compare selected users, click the checkboxes to the left of the users you want, and then click "Select Checked."

The software displays a list of possible files.

Step 2. Find the contour plot you want, and click "Graph."

The software draws contour plots for all the users, and displays them on a single page for easy comparison. Each plot is shown in a different color.

Note: A maximum of twelve plots fit on a single page. If you selected more than twelve users, then they are displayed on several pages. There are buttons you can use to go to the next page, the previous page, the first page, and the last page.

Step 3. To superimpose the contour plots, scroll down to the bottom of the page. Check "Superimpose graphs" and then click "Apply Changes."

The software redraws all the colored curves, on a single plot. It also displays a key showing which color is used for each user.

Additional graphing options are described later.

7 Graphing Preferences and Filtering

At the bottom of each graph page, there is a box you can use to set graphing preferences and apply digital filters to the data. The following sections describe the available options. Note that not every option is available on every page.

7.1 Superimpose Graphs

When comparing data from different users or different stations, you can superimpose the graphs for a detailed comparison.

To superimpose the graphs, put a check in the box labeled "Superimpose graphs" and then click "Apply Changes."

To draw separate graphs, remove the check from the box labeled "Superimpose graphs" and then click "Apply Changes."

CVWS remembers this setting so long as you stay on the web site.

7.2 Plot Size

You can control the width and height of the graphs, by specifying how many pixels you want in each direction. The size in each direction can range from 100 to 1600 pixels. The default size is a width of 800 pixels and a height of 400 pixels.

To change the plot size, enter the desired width and height in pixels and click "Apply Changes."

The plot size refers to just the size of the graph, not the numbers and labels that surround it.

CVWS remembers this setting so long as you stay on the web site.

7.3 Curve Thickness

You can control the thickness of the curves drawn in the graphs. The thickness can range from 1 to 32 pixels. The default thickness is 3 pixels.

To change the curve thickness, enter the desired thickness in pixels and click "Apply Changes."

CVWS remembers this setting so long as you stay on the web site.

7.4 Low-Pass Filter Frequency

CVWS can apply a low-pass filter to time-series data. The low-pass filter removes any high-frequency noise or oscillations in the data.

To apply a low-pass filter, enter the desired cutoff frequency in Hertz, and then click "Apply Changes."

To remove the filter, clear the filter frequency text box, and then click "Apply Changes."

CVWS remembers this setting so long as you stay on the web site.

Note: The filter used is a two-pass two-pole Butterworth filter. The filter frequency is the 3dB cutoff frequency.

7.5 X Range

You can control the range of data values that appear on the X-axis. By default, CVWS attempts to choose a range that fits the available data. To change the range, enter the desired values, and click "Apply Changes."

7.6 Y Range

You can control the range of data values that appear on the Y-axis. By default, CVWS attempts to choose a range that fits the available data. To change the range, enter the desired values, and click "Apply Changes."

7.7 Use the Same Scale on Both Axes

For contour plots and X-Y plots, you can tell CVWS to use the same scale on the X- and Y-axes.

To use the same scale on both axes, put a check in the box labeled "Use the same scale on both axes" and then click "Apply Changes." When you do this, CVWS automatically adjusts the plot size and data ranges to achieve the same scale on the X- and Y-axes.

To remove this setting, remove the check from the box labeled "Use the same scale on both axes" and then click "Apply Changes."

7.8 Restoring Defaults

Click on "Restore Defaults" to restore all the graphing preferences to their default values.