

Export Results

This tutorial will show you how to export the results of your analysis. This allows users to report specific signals, metrics, or events from a data set and to share results from analysis conducted within Sift.

Data

This tutorial uses overground walking data from four subjects. The subjects walked at three different speeds: slow, normal and fast. The data was processed using a pipeline with automatic event detection and link model based item calculations (most notably the knee joint angles). [Four Subjects Walking Data Set](#).

This tutorial also uses query definitions that have been previously saved in a [.q3d file](#). [AnkleAngles.q3d](#).

Load the Library

As with previous tutorials, we begin by loading the library and defining the queries relevant to our question.

1. Click  **Load Library** in the [toolbar](#) to open the Load Library dialog.
2. Click **Browse** and select the folder where the data is stored.
3. Click **Load** button to import the data.

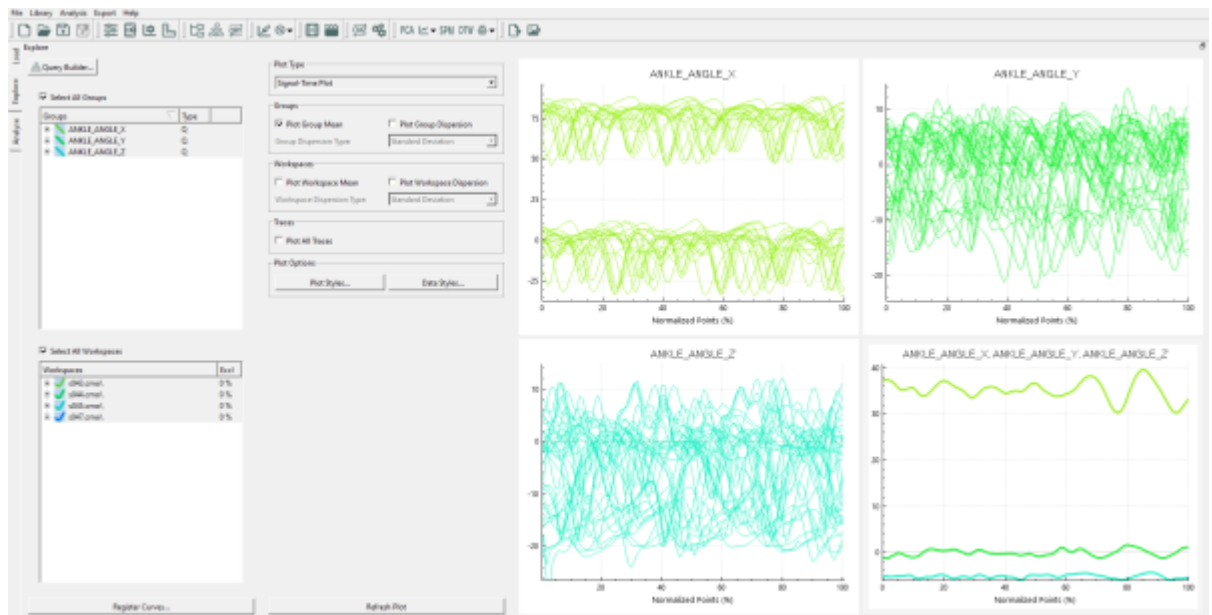
Load Queries and Compute Groups

For this tutorial we will load previously saved query definitions and use them to calculate our specific groups.

1. Click on the  **Query Builder** icon on the [toolbar](#) and then click on **Load Query Definitions**.
2. Select the AnkleAngles.q3d file with the saved query definitions and **Open** them.
3. Select **Calculate All Queries**.

Three groups will now appear in the **Groups** list on the Explore page in Sift: ANKLE_ANGLE_X, ANKLE_ANGLE_Y, and ANKLE_ANGLE_Z. Clicking on any of the groups will show that each of the four workspaces is associated with that group.

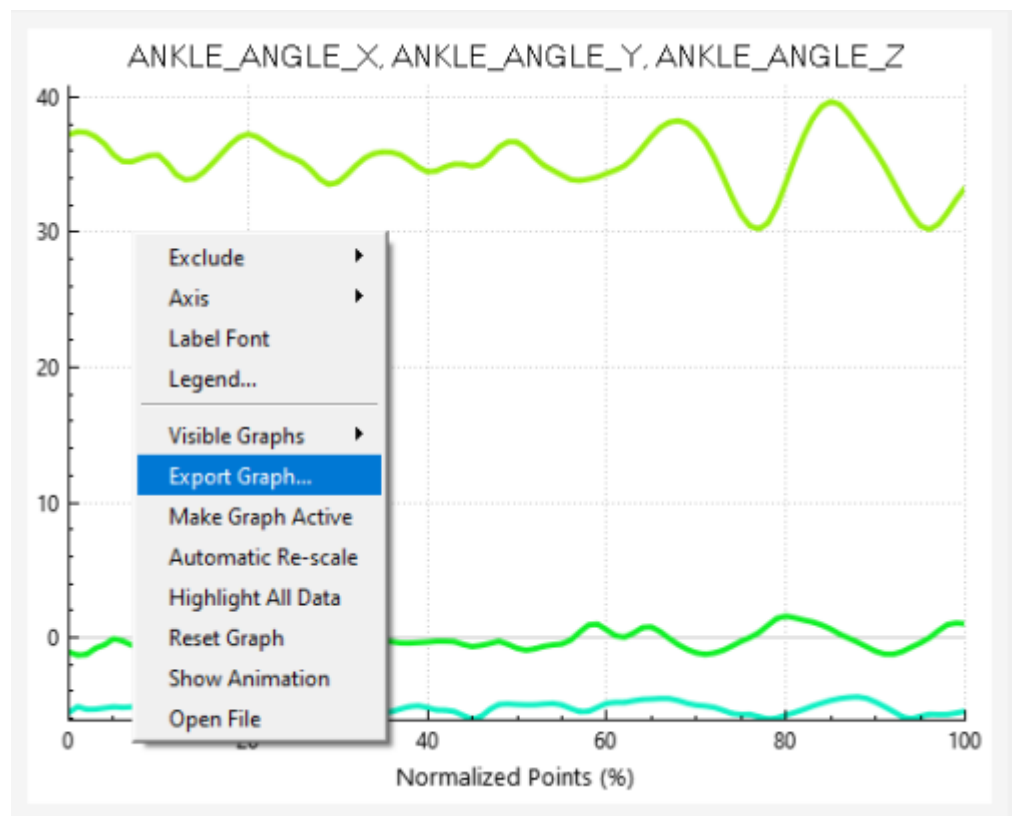
Visualize the Groups



We can visualize the groups individually and collectively in different plots in the Queried Data area. For a full overview of how to visualize data, see the [tutorial].

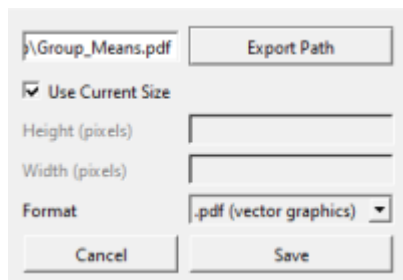
1. To start, make sure the plot type on the [plot control panel](#) is set to **Signal-Time Plot**.
2. click on  **Show General Options**.
3. Under **Plotting options** choose 2 **Graph Rows** and 2 **Graph Columns** to create a 2x2 set of plots in the Queried Data area.
4. Close the Show Options dialog.
5. With the top-left plot selected (this will be indicated with a light-grey border), select the ANKLE_ANGLE_X group, select all workspaces, and then plot all traces.
6. Select the top-right plot and plot the raw sequences from the ANKLE_ANGLE_Y group's workspaces.
7. Select the bottom-left plot and plot the raw sequences from the ANKLE_ANGLE_Z group's workspaces.
8. Select the bottom-right plot, select all groups and all workspaces, and plot the group means.

Export Graphs

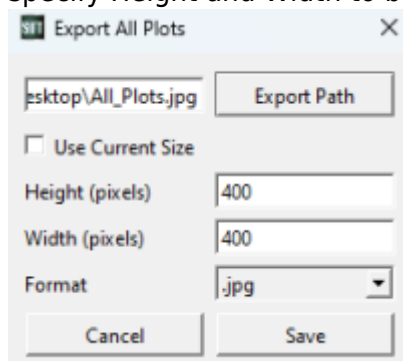


It is possible now to export the visualizations to one of four image formats: JPG, PDF vector graphic, PNG, or BMP.

1. Right-click the bottom-right plot and select **Export Graph...** from the context menu.
2. In the Export Graph dialog, choose your desired **Export Path**, leave **Use Current Size** checked, and set the **Format** to “.pdf (vector graphics)”.
3. Click **Save**.



4. Alternatively, export all four graphs collectively by selecting  **Export Graphs** on the [toolbar](#).
5. In the Export Graph dialog, choose your desired **Export Path**, uncheck **Use Current Size**, specify Height and Width to be 400 pixels each, and set the **Format** to “.jpg”.



Export Data to Text

☐ Export Settings File

Definition

Export Type

Data

Input Data

All Queried Data

Number Points Normalized to:

101

☐ Group Mean

☐ Group Std. Dev.

☒ Workspace Mean

☒ Workspace Std. Dev.

☐ All Sequences (Normalized)

☐ All Sequences (Time Based)

Export Result Options

Export Format

Standard ASCII

Precision

4

Generate Preview

Table

1	2	3	4
	s043.cmo\ WKSP_MEAN P2D ANKLE_ANGLE_X X	s044.cmo\ WKSP_MEAN P2D ANKLE_ANGLE_X X	s045.cn WKSP_I P2D ANKLE_ X
Item			
1	30.7375	40.3523	37.2244
2	29.9126	41.4148	36.7203
3	29.9100	42.1227	36.0572

Results File Name

Browse

Cancel

Export Results

Alternatively, we can export our signal data to a text format.

1. Click  **Export Results** on the application toolbar.
2. In the Export Results dialog's **Definition** section, set the **Export Type** to Data, the **Input Data** to All Queried Data, and select both **Workspace Mean** and Workspace Std. Dev..
3. In the Export Results dialog's **Export Result Options** section, leave the default **Export Format** and **Precision** and click **Generate Preview**.
4. The **Table** of results will populate and you can scroll in both directions to inspect the text that will be exported. For each signal group, we can see in the table that each Workspace's Mean and Standard Deviation gets its own column and that there are 101 rows, one for each

normalized time point. Note that resizing the dialog prioritizes any additional space for the table to make it easier to view large output files.

5. Specify a **Results File Name** and then click **Export Results** to finalize the export.

Export Summary Statistics to Text

We can also export metrics based on the data to a text format.

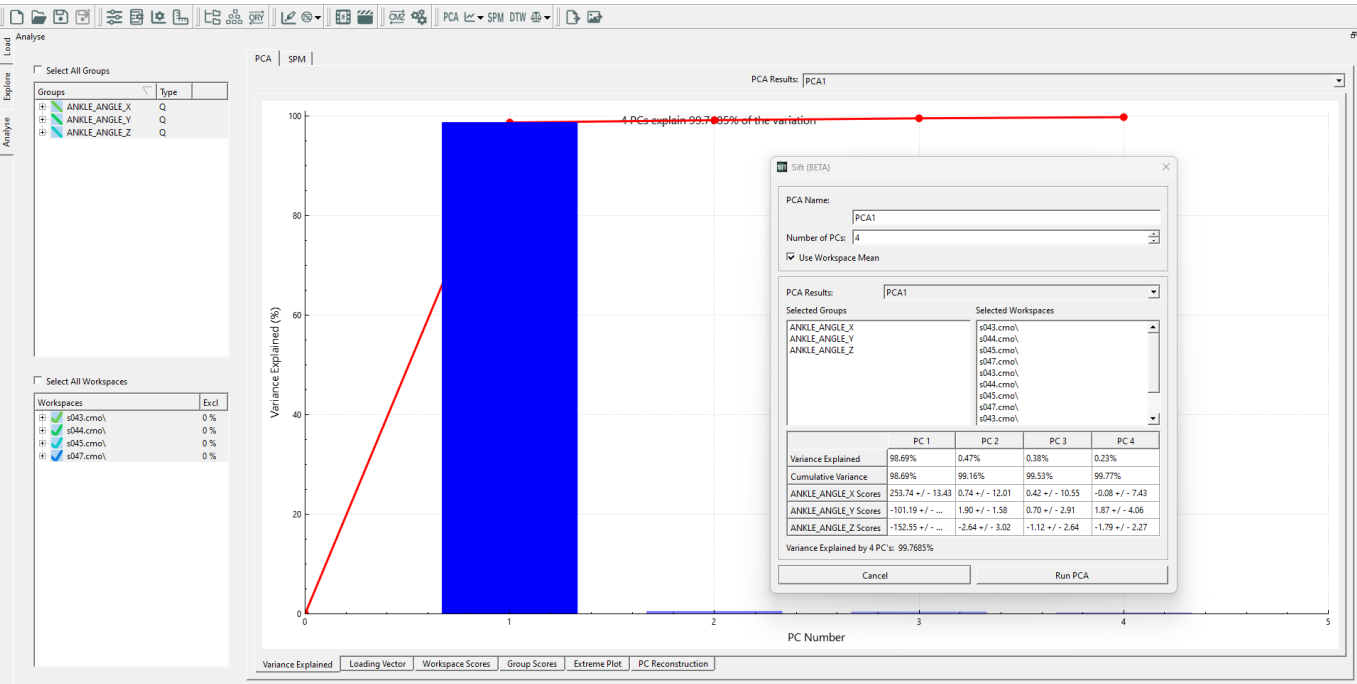
1. Returning to the Export Results dialog's **Definition** section, set the **Export Type** to Summary Statistics, set **Calculate results for** to Workspaces, and select both **Minimum** and **Maximum**.
2. In the Export Results dialog's **Export Result Options** section, click **Generate Preview**. For each signal group, we can see that the table contains each workspace's minimum mean value and maximum mean value.
3. Back in the main application window, click on the top-left plot.
4. In the Export Results dialog's **Definition** section, set **Input Data** to Active Plot Data
5. Click **Generate Preview** again. Now we can see that our selected metrics (Minimum and Maximum) will only be exported to the ANKLE_ANGLE_X traces, since this is the data on the currently active plot.
6. Specify a **Results File Name** and then click **Export Results** to finalize the export.

Perform PCA

In order to export [Principal Component Analysis](#) (PCA) results, we have to first calculate the PCA results! For a full overview of how to perform PCA and interpret some of the results, see this [tutorial](#).



1. Ensure that all groups and workspaces are selected in the **Groups** and **Workspaces** lists.
2. Open the **PCA Run PCA** dialog on the [toolbar](#).
3. Set **Number PCs** to 4 and ensure that **Use Workspace Mean** is checked.
4. Click **Run PCA**.
5. A summary of the PCA results will appear in the PCA dialog, and the results of these calculations will automatically populate the PCA graphs on the [Analysis Page](#). Because the traces for each signal cluster around a distinctive mean value, almost all of the variance in these groups can be captured by a single principal component.



Export PCA Results

☐ Export Settings File

Definition

Export Type

PCA Results

☐ Workspace Scores

☒ Group Scores

☒ Group Scores Std. Dev.

☒ Variance Explained

☐ Eigenvectors

☐ Mean +/- 1 SD

☐ Mean +/- 5 and 95 %

Export Result Options

Export Format

Standard ASCII

Precision

4

Generate Preview

Table

1	2	3	4	5	6
	C:\Users\sydne...	C:\Users\sydne...	C:\Users\sydne...	C:\Users\sydne...	C:\Users\sydne...
	GROUP_PC_SC...	GROUP_PC_SC...	GROUP_PC_SC...	GROUP_PC_SC...	GROUP_PC...
	P2D	P2D	P2D	P2D	P2D
	ANKLE_ANGLE_X	ANKLE_ANGLE_Y	ANKLE_ANGLE_Z	ANKLE_ANGLE_X	ANKLE_ANGLE...
Item	0	0	0	0	0
1	253.7443	-101.1943	-152.5500	13.4338	14.4417
2	0.7413	1.9020	-2.6433	12.0082	1.5816
3	0.4220	0.6977	-1.1197	10.5504	2.9072
4	-0.0805	1.8708	-1.7903	7.4342	4.0590

Results File Name

Browse

Cancel

Export Results

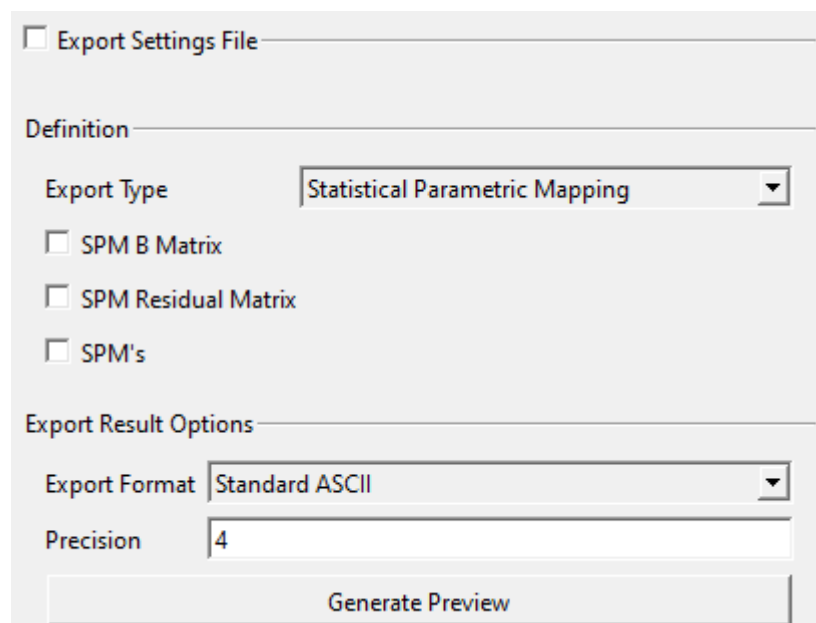
Now that we have performed PCA, we have results to export.

1. Click  **Export Results** on the application toolbar.
2. In the Export Results dialog's **Definition** section, set the **Export Type** to PCA Results and

- select the **Group Scores**, **Group Scores Std. Dev.**, and **Variance Explained** options.
3. In the Export Results dialog's **Export Result Options** section, leave **Export Format** as Standard ASCII and **Precision** as 4.
 4. Click **Generate Preview**. We can see that each signal's Group PC Score Mean and Standard Deviation is shown for each of the selected principal components and that the variance explained is shown for all computed principal components. Note here that each row in the export table is now a principal component and not a normalized time point as for the other export types. Also note that Inspect3D does have the ability to export information about all of the principal components that were calculated, not only the ones that were selected.

Exporting SPM, Curve Registration, and DTW Results

All tools that are available on the analysis page produce results and graphs that can be exported by the two exporting dialogs presented in this tutorial. Various definitions and settings for the exporting options are available for each particular analysis type. The following images present the three remaining exporting settings for [SPM](#), [Curve Registration](#), and [DTW](#).



The screenshot shows the 'Export Settings' dialog box. At the top, there is a checkbox labeled 'Export Settings File'. Below this is a section titled 'Definition' which contains a dropdown menu for 'Export Type' set to 'Statistical Parametric Mapping'. Underneath are three unchecked checkboxes: 'SPM B Matrix', 'SPM Residual Matrix', and 'SPM's'. The next section is 'Export Result Options', which includes a dropdown for 'Export Format' set to 'Standard ASCII' and a text input for 'Precision' set to '4'. At the bottom of the dialog is a button labeled 'Generate Preview'.

☐ Export Settings File

Definition

Export Type Dynamic Time Warping

☐ Found Anomalies/Traces

☐ Cost Functions

Export Result Options

Export Format Standard ASCII

Precision 4

Generate Preview

Recap

In this tutorial you learned how to export the traces visualized in Sift to common image formats. You also learned how to export three types of data to text: Signals, Metrics, and PCA Results. In addition, you learned that any analysis method can be exported to text files or images.

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