

# Measure CT Marker Coordinates in Maya

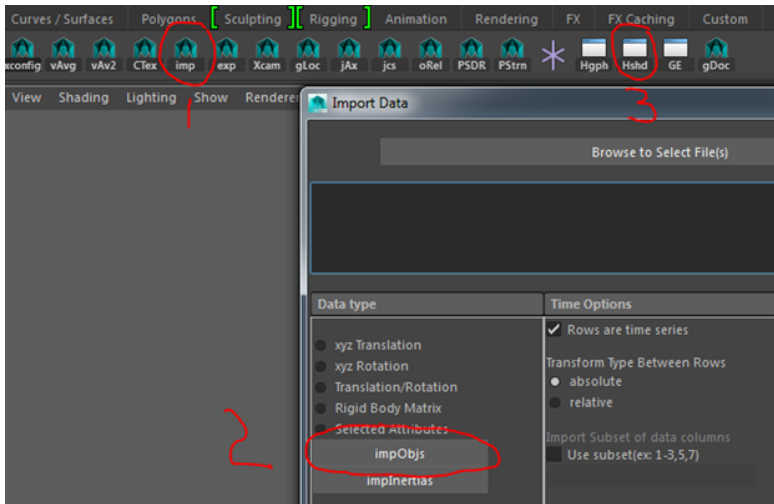
**\*\*UNDER CONSTRUCTION\*\***

There are two methods for calculating marker model coordinates

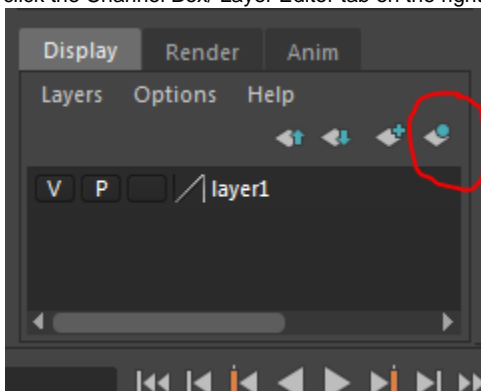
1. vAvg – calculates centroid for each individual marker based on the average position of selected vertices.
2. vAvg2 – breaks all unconnected elements into separate objects and automatically calculates the centroid of each element.

For both methods, import .obj files for the bones and the markers, and set up for easy marker selection (make the bones transparent and unable to be selected).

1. Click the **imp** button on the XROMM Maya tools shelf.
2. Click **impObjs**, Shift+select(pc) or command+select (mac) bone and marker models and open.
3. Click **Hshd** on the shelf. In the "Create" window (bottom left) click **Lambert** to create a new shader (probably named Lambert2). On the right side of the screen, set the color, and drag the **transparency slider** towards the right. Minimize the hypershade window.



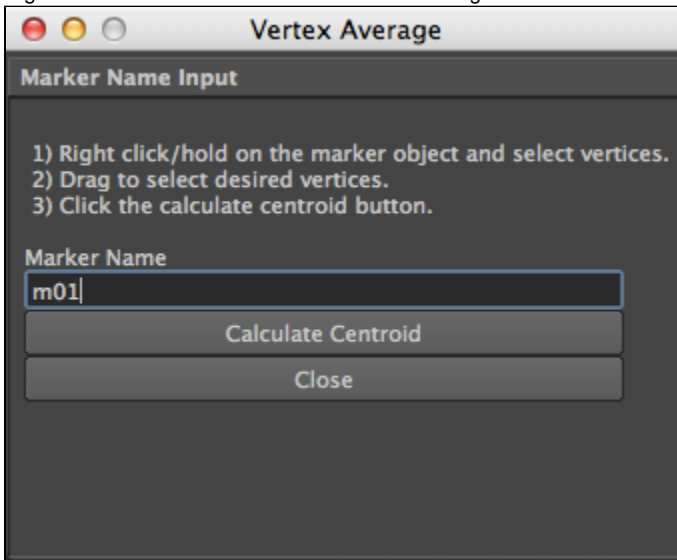
4. Select all bone models (but not the markers), reopen the hypershade window, right click on the lambert2 icon and select **Assign Material to Selection**. Close the hypershade window. You should now be able to see your model markers through the transparent bones, however, it will still be difficult to select the marker models because the bone models are in the way.
5. With the bone models still selected, create and place them on a new layer using the button shown below. If you do not the layer editor, click the Channel Box/ Layer Editor tab on the right side of the screen.



6. Click the blank 3rd box twice which changes to the letter R and the bone models become unselectable but still show smooth shading.
7. Now you should be able to see and select the marker mesh through the transparent bone model.

For a single marker object: vAvg

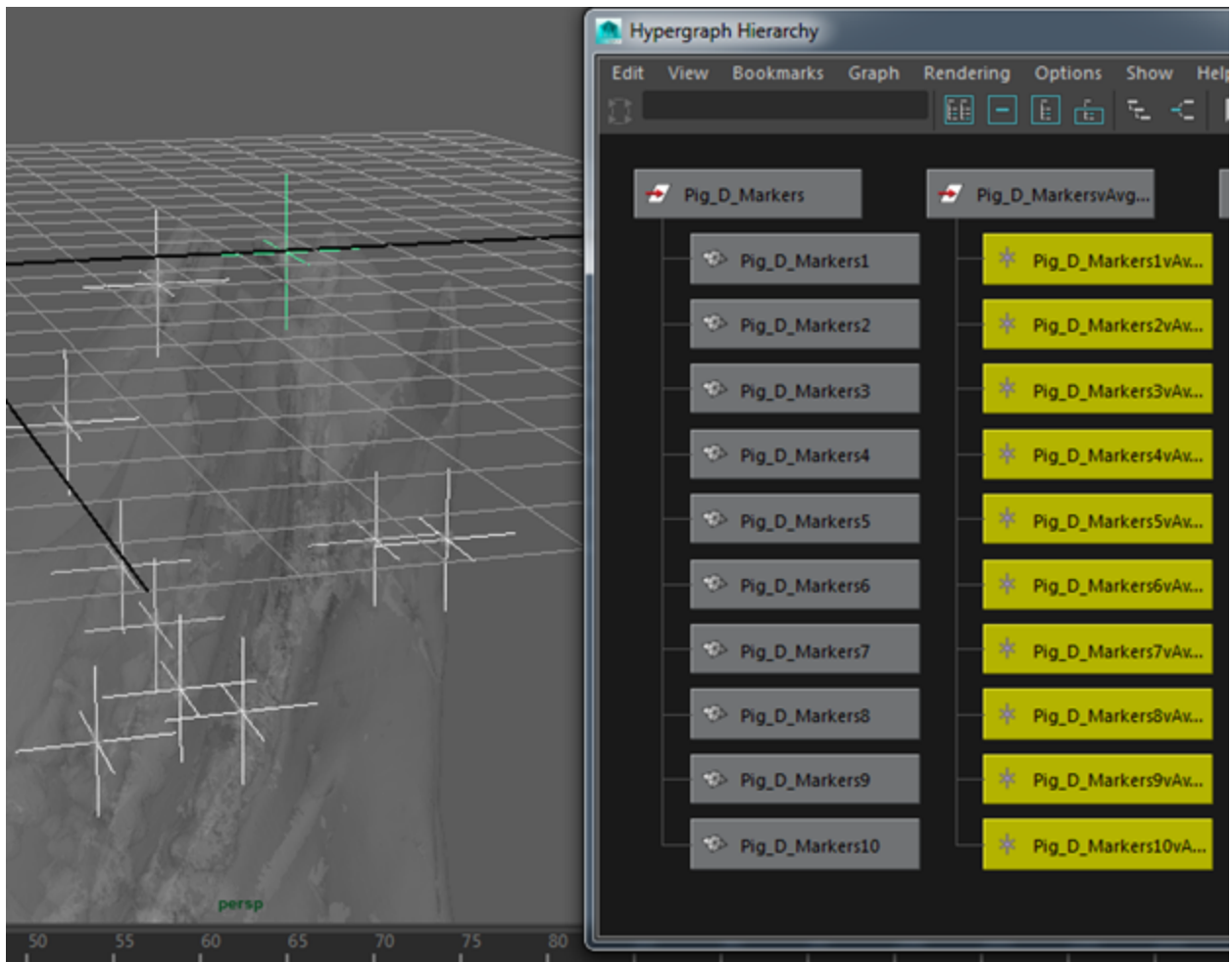
1. Select the marker object.
2. Click vAvg on the XROMM tool shelf.
3. Right click-hold and select vertex from the marking menu



1. Drag your mouse over a single marker (selected vertices should become yellow).
2. In the Marker Name box, enter a name for the marker.
3. Press the **Calculate Centroid** button and a locator will be created.
4. Repeat steps 3 - 8 for each marker.

## For all markers in a single object: vAvg2

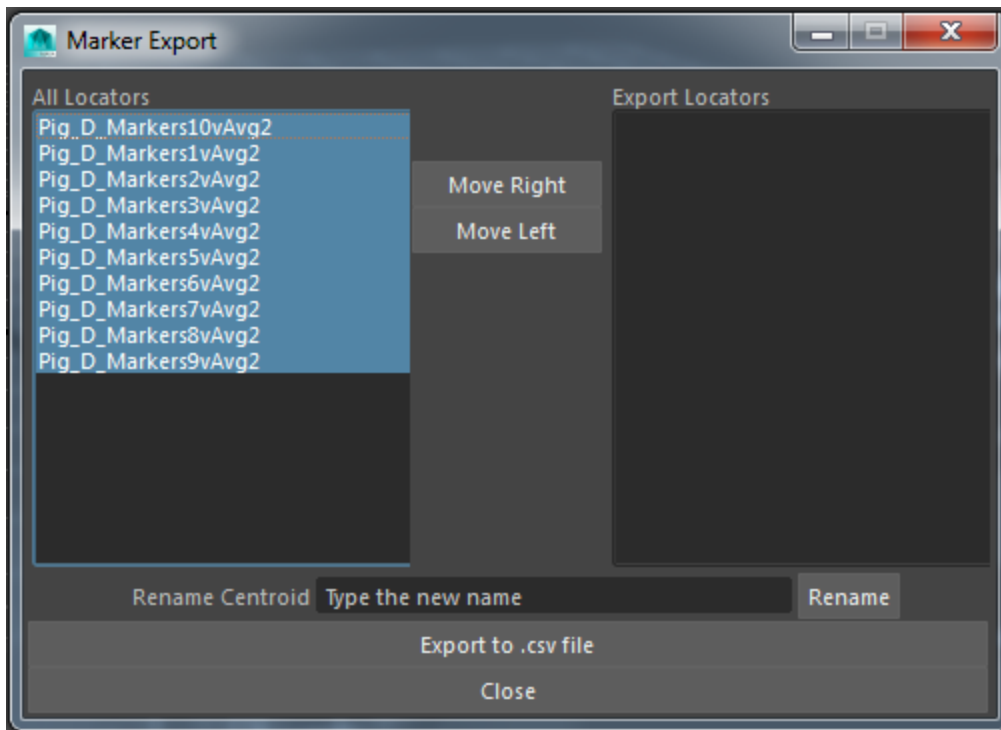
1. Select the marker object.
2. Click **Calculate Centroid**
3. Click the **Hgph** button on the shelf. Note there are two groups created by vAvg two. The first group are the isolated meshes from the marker model. The second group are the calculated centroids with the suffix vAvg2.
4. Renaming markers from vAvg2 is best done in the next step; CExport.



1.

## Export the CT marker locator data

1. Click the **CTex** from the XROMMtools Shelf, or type **CTMexport** in the MEL box



2. If using vAvg2, you may want to rename your markers. To do this, select the marker from the view window, hypergraph or All Locators list, type the new name in the Rename Centroid text field and click rename. The list will update with the new name for the object.
3. Select markers that you want to export in the left window and click **Move Right**. You should export marker sets for each rigid body as a single file for easier use with XMA Lab.
4. Click **Export to .csv File**.