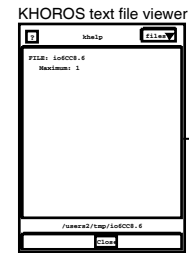
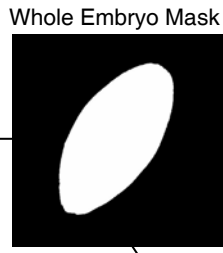


Case 1: Rotating the Embryo Image to Align the A-P Axis with the Horizontal

Embryo images need to be rotated and cropped, so that all embryos can be put into a common orientation. This can be done using the clean whole embryo mask.

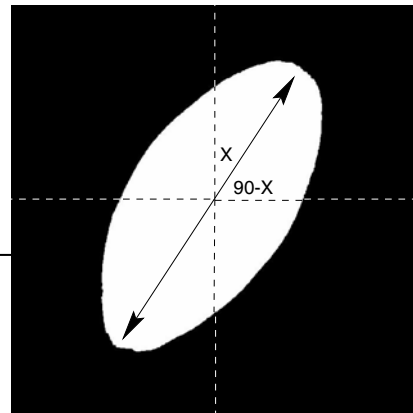


Label and count blobs



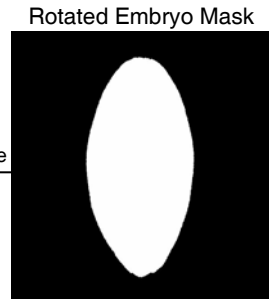
extract and display

Steps 1-3

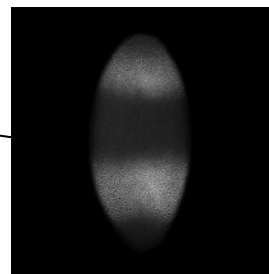
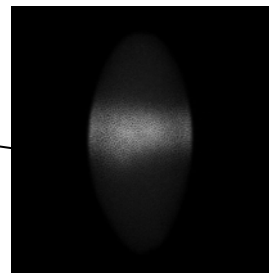
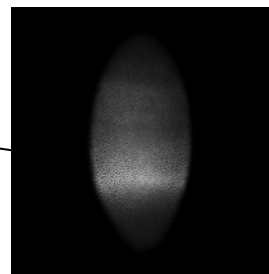


Major Axis of Whole Embryo Mask Displayed with Horizontal and Vertical Image Axes, showing rotation angle, X

Rotate

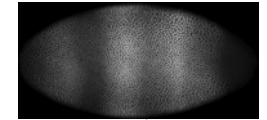
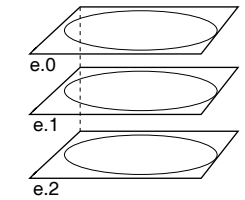


Step 4: Label the rotated embryo mask, and apply this labelled image to the rotated greyscale images, using the Blob Extractor. This routine reduces input images to the dimensions of the mask.

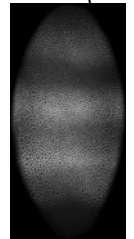


Output:

3-Element Embryo KDF File, Rotated and Cropped



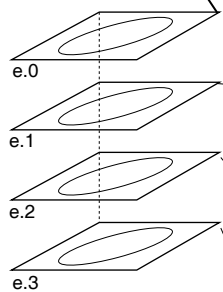
Step 6: If A-P axis is vertical, switch data axes to put embryo into standard orientation.



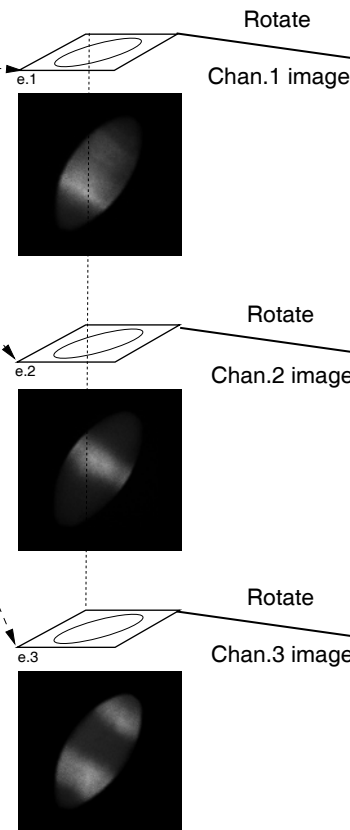
WIDTH
HEIGHT

Input:

4-Element Embryo KDF File



1. Shrink and label binary whole embryo mask.
2. Perform shape analysis on labelled mask, and extract statistic, X, which corresponds to the smallest angle between the major axis of the mask and one of cardinal axes; in other words, X is always less than 90-X.
3. Convert from radian to degrees, and pass this value to the parser, from where the rotate glyph gets the proper value to apply to the mask and the three image channels



Step 5: Append three cropped images along elements axis.

