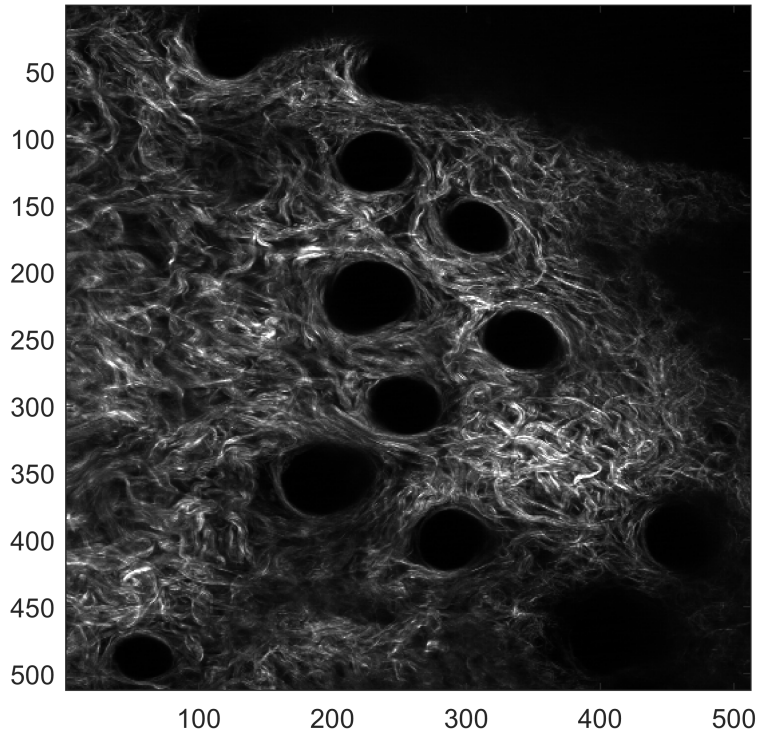


Analysis of collagen SHG image

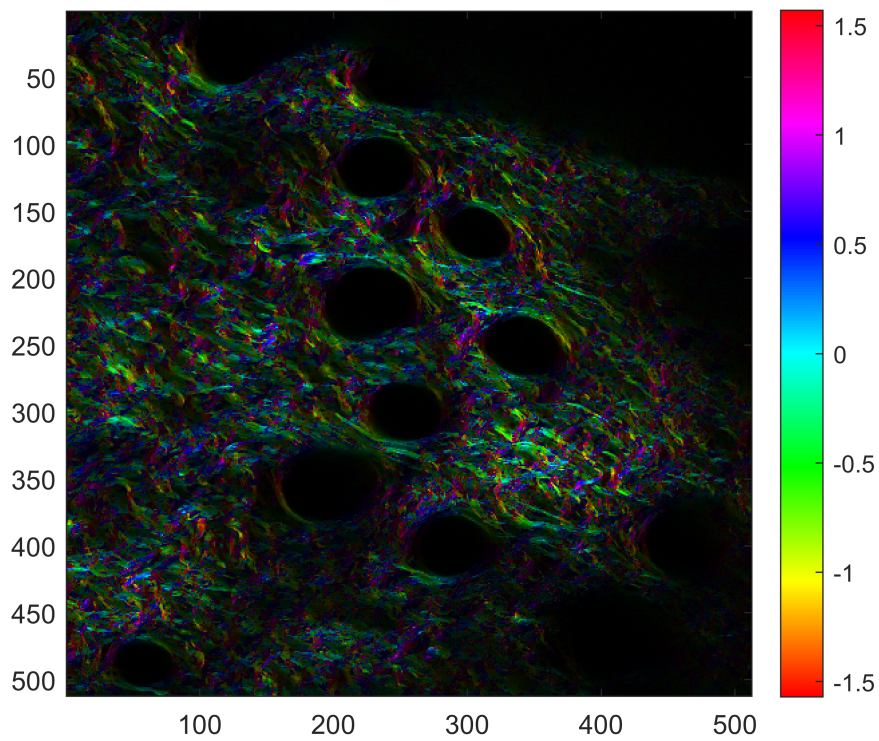
Load and display the image

```
shgim = imread('./documentation/calcfibang2D/SHG Intensity Image.tif');  
figure; imagesc(shgim); colormap gray;  
axis image;
```



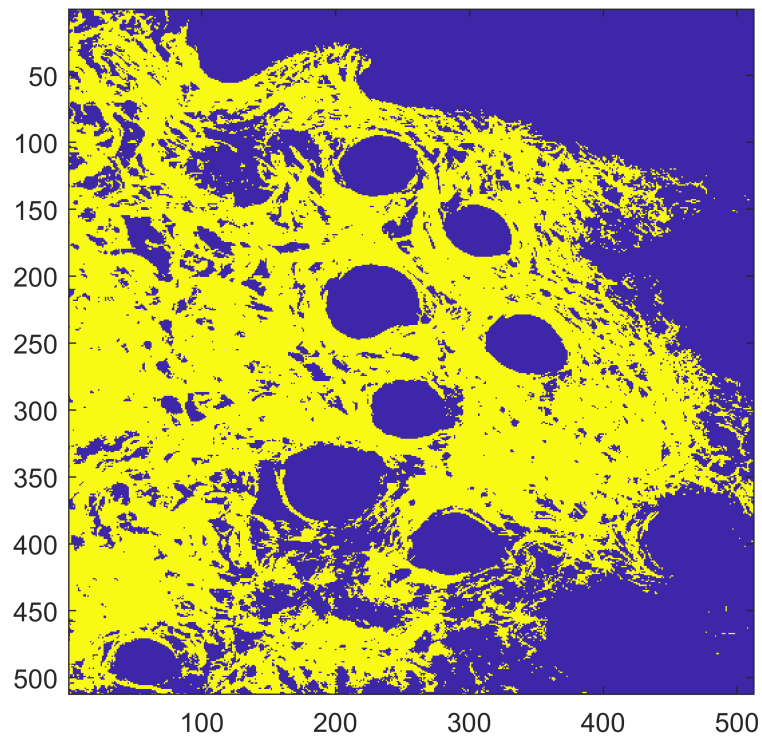
Calculate the pixel-wise intensity-based fiber orientation with a kernel size of 7 pixels and no filtering

```
orientImg = calcfibang2D(shgim,7,0);  
figure; imagesc(orientImg,'AlphaData',single(shgim)./8191); colormap hsv;  
caxis([-pi/2 pi/2]); % Adjust color limits (if necessary)  
axis image; colorbar;  
set(gca,'Color',[0 0 0]); % Set background color to black
```



Create a simple collagen-positive mask based on the intensity

```
shgMask = (shgim > 1000);  
figure; imagesc(shgMask);  
axis image;
```



Calculate a map of local directional variance with an 21 x 21 pixel square

```
dv = directionalVariance2D(orientImg,shgMask,21);
% Display local DV map
figure; imagesc(dv,'AlphaData',single(shgim)./8191); colormap jet;
caxis([0 1])
axis image; colorbar;
set(gca,'Color',[0 0 0]);
```

