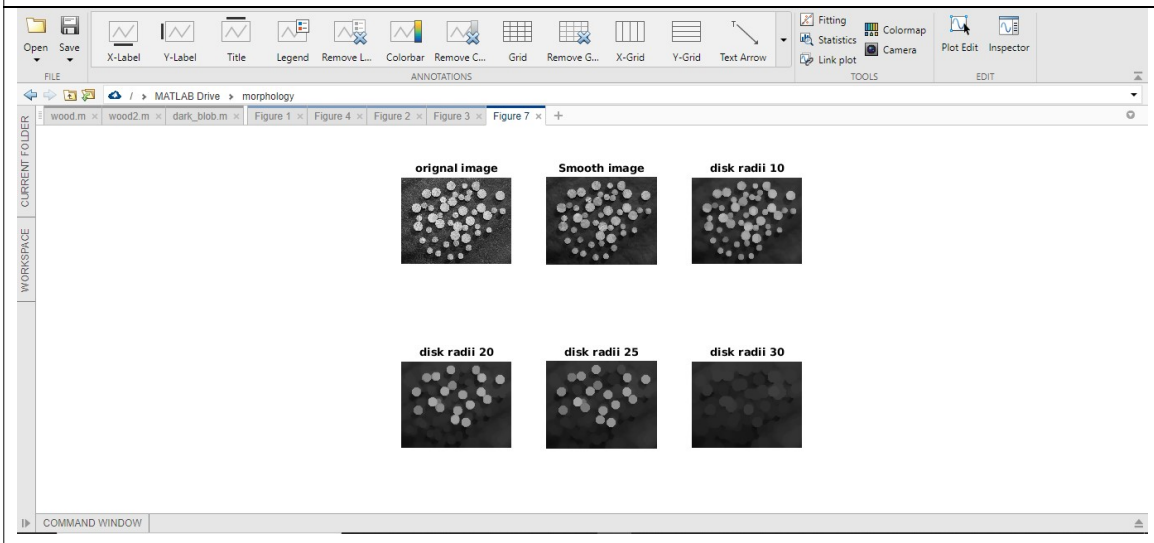
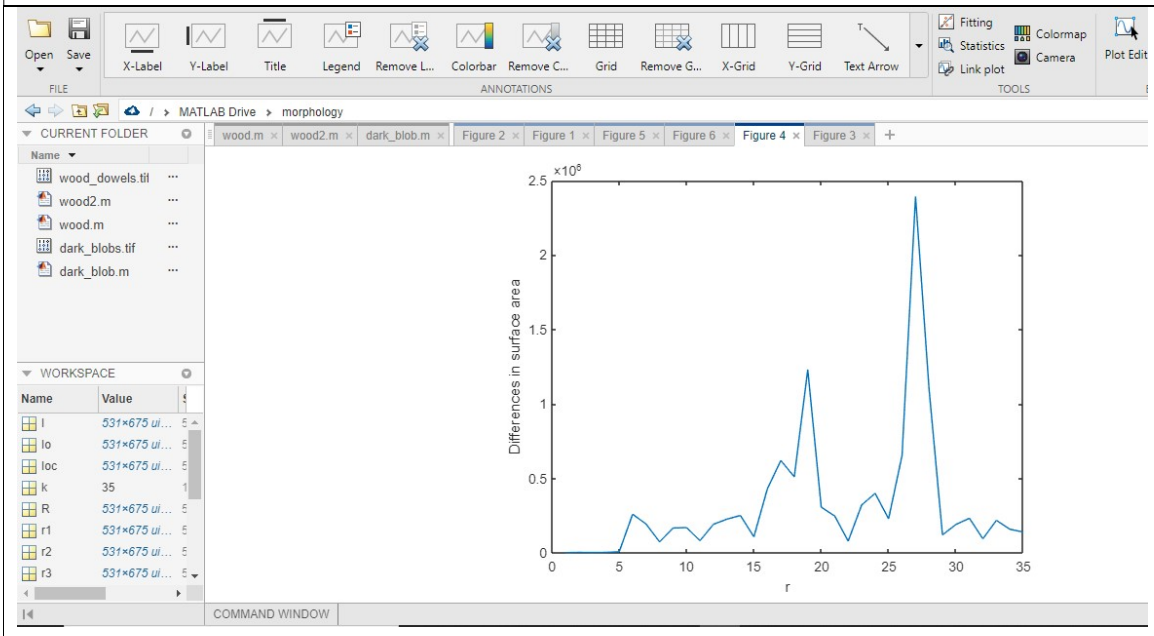
Granulometry

```
I = imread("wood_dowels.tif");
se = strel('disk',5);
Io = imopen(I,se);
Ioc = imclose(Io,se);


figure
subplot(2,3,1);
imshow(I);
title('orignal image')
subplot(2,3,2);
imshow(Io);
title('Smooth image')



SE1 = strel('disk', 10);
SE2 = strel('disk', 20);
SE3 = strel('disk', 25);
SE4 = strel('disk', 30);


r1 = imopen(Ioc, SE1);
r2 = imopen(Ioc, SE2);
r3 = imopen(Ioc, SE3);
r4 = imopen(Ioc, SE4);


subplot(2,3,3);
imshow(r1);
title('disk radii 10')
subplot(2,3,4);
imshow(r2);
title('disk radii 20')
subplot(2,3,5);
imshow(r3);
title('disk radii 25')
subplot(2,3,6);
imshow(r4);
title('disk radii 30')



sumpixels = zeros(1,36);
for k = 0:35
    SE = strel('disk',k);
    R =imopen(Ioc,SE);
    sumpixels(k+1)=sum(R(:));
end


figure
plot(-diff(sumpixels))
xlabel('r'),ylabel('Differences in surface area')
```


Open
Save
X-Label
Y-Label
Title
Legend
Remove L...
Colorbar
Remove C...
Grid
Remove G...
X-Grid
Y-Grid
Text Arrow
Fitting
Statistics
Link plot
Colormap
Camera
Plot Edit
Inspector
FILE
ANNOTATIONS
TOOLS
EDIT
MATLAB Drive
morphology
wood.m
wood2.m
dark_blob.m
Figure 1
Figure 4
Figure 2
Figure 3
Figure 7
CURRENT FOLDER
WORKSPACE
orignal image
Smooth image
disk radii 10
disk radii 20
disk radii 25
disk radii 30
COMMAND WINDOW


Open
Save
X-Label
Y-Label
Title
Legend
Remove L...
Colorbar
Remove C...
Grid
Remove G...
X-Grid
Y-Grid
Text Arrow
Fitting
Statistics
Link plot
Colormap
Camera
Plot Edit
FILE
ANNOTATIONS
TOOLS
MATLAB Drive
morphology
CURRENT FOLDER
Name
wood_dowels.til
wood2.m
wood.m
dark_blobs.tif
dark_blob.m
WORKSPACE
Name
Value
I
Io
Ioc
k
35
R
r1
r2
r3
wood.m
wood2.m
dark_blob.m
Figure 2
Figure 1
Figure 5
Figure 6
Figure 4
Figure 3
×10^6
Differences in surface area
r
COMMAND WINDOW