

TD1 - Traitement d'image

Le but de cette séance est d'étudier les notions vues dans les chapitres 1, 2, 3 et 4 du cours : prétraitement, segmentation et mesures sur des objets.

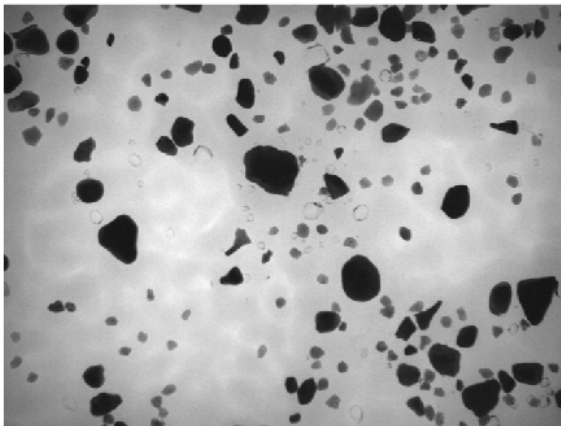
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3.1. Segmentation d'une image

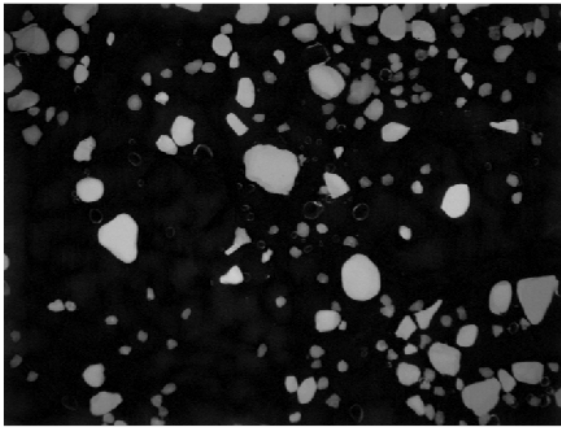
Image Cailloux

```
clear all;  
close all;  
  
base='Images/prova6_226';  
i=1;  
nom=sprintf('%s_%03d.tif',base,i-1);  
f=imread(nom);  
figure(1),imshow(f);
```



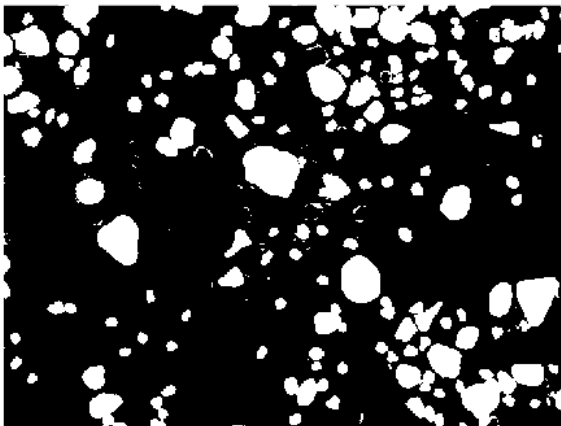
Correction dérive de fond

```
s=strel('disk',30);  
f1=imclose(f,s)-f;  
figure(2),imshow(f1);
```



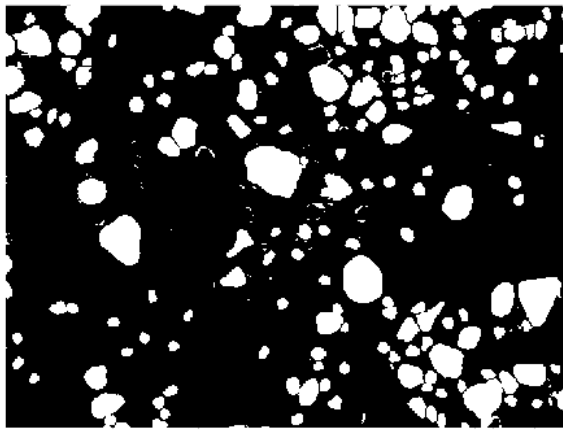
Binarisation

```
fbin=tse_imthreshold(f1,1,'entropy');  
figure(3),imshow(fbin);
```



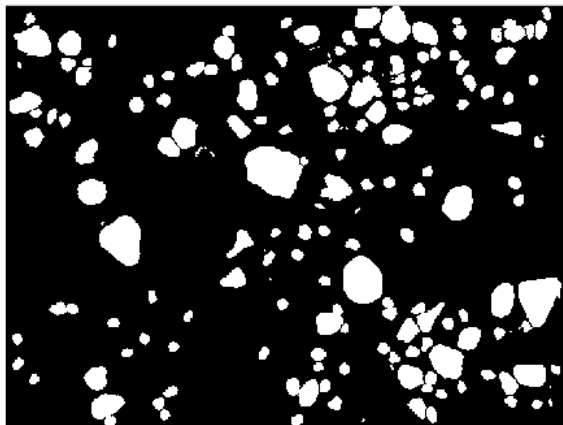
Séparation objets

```
fbin2=tse_imsplitobjects(fbin);  
figure(4),imshow(fbin2);
```



Ouverture + suppression bords

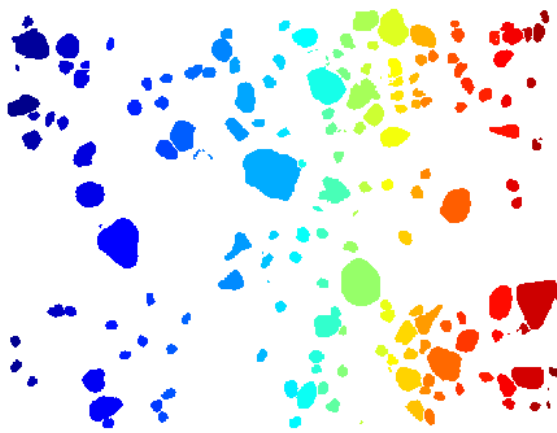
```
s=strel('disk',1);
fbin3=imopen(fbin2,s);
fbin3=imclearborder(fbin3);
figure(5),imshow(fbin3);
```



3.2. Distribution granulométrique

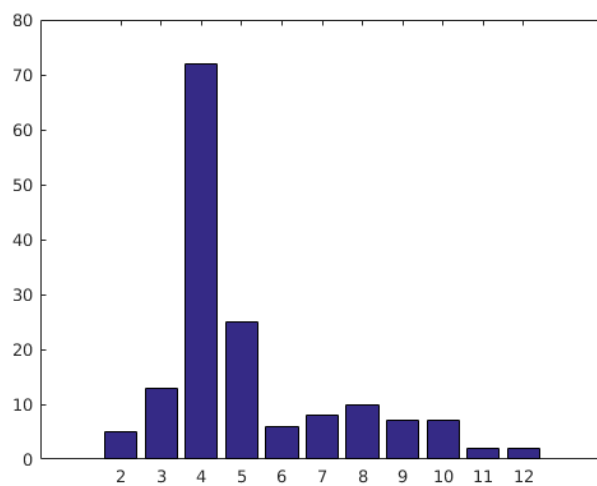
Labelisation

```
[fe,n]=bwlabel(fbin3);
fe_rgb=label2rgb(fe);
figure(6),imshow(fe_rgb);
```



Mesures

```
mes=regionprops(fe,'EquivDiameter');
d=[mes.EquivDiameter];
% Conversion
d=d/size(f,1)*150;
% Histogramme
figure(7);
h=hist(d,1:ceil(max(d)));
bar(2:12,h(2:12));
```



3.3 Traitement de la séquence

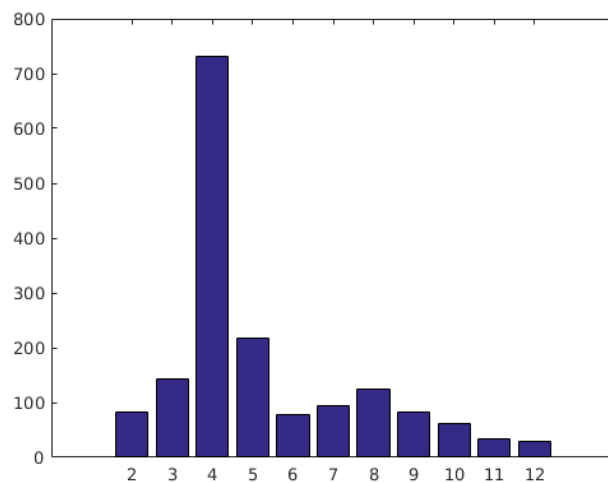
```
base='Images/prova6_226';
h=zeros(11,15);
for i=1:15
    nom=sprintf('%s_%03d.tif',base,i-1);
    disp(nom);
    f=imread(nom);
    h(:,i)=distribution_taille(f,150,2:12);
```

```

end
h_cumule=sum(h,2);
figure(8);
bar(2:12,h_cumule);

Images/prova6_226_000.tif
Images/prova6_226_001.tif
Images/prova6_226_002.tif
Images/prova6_226_003.tif
Images/prova6_226_004.tif
Images/prova6_226_005.tif
Images/prova6_226_006.tif
Images/prova6_226_007.tif
Images/prova6_226_008.tif
Images/prova6_226_009.tif
Images/prova6_226_010.tif
Images/prova6_226_011.tif
Images/prova6_226_012.tif
Images/prova6_226_013.tif
Images/prova6_226_014.tif

```



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