Contents


```
clc;
clear all;
close all;
```

```
uploading=imread('binary5.png');
figure;
imshow(uploading);
```

```
Error using imread>get_full_filename
File "binary5.png" does not exist.

Error in imread (line 372)
        fullname = get_full_filename(filename);

Error in concersiovers3xg0 (line 5)
uploading=imread('binary5.png');
```

calibration and conversion factor for all binary images

```
folder='/data2/nacere/Processing/XG0/Binary_images';
files=dir(fullfile(folder, 'binary*.png'));
for imgNum=1:length(files)
    imgpath=fullfile(folder,files(imgNum).name);
    img=imread(imgpath);
    img=imfill(img,'holes');
    [height,width]=size(img);
    % height and length of white channel
    %height_channel=regionprops(img,'MajorAxisLength');
    %boundingbox=[height_channel.BoundingBox];
    widths(imgNum)=width;
    %lengths=max([height_channel.MajorAxisLength]);
    length_all=widths/65.075; %cm %% why 65.075cm? because the raw image with a ruler placed on the bed and captured before running the experiment measure 65.075cm
end
```

```
save('lengthpx_xg05.mat','widths');  % here widths refered to the binary image in each xg folder. For instance xg05 has 30 binary images and we extratced the length
%length_image= 65.075; %cm
save('conversionfxg5.mat','length_all');
```

```
load('avgr_widthslast05.mat');
widthsxg5=(avgr_widths)./(length_all);
save('widthscmxg05.mat','widthsxg5');
```

```
mm=mean(widthsxg5);
```

velocity

```
folder_x='/data2/nacere/Processing/XG0/Particles_u-v';
files=dir(fullfile(folder_x, 'u_originalsess*.mat'));
for i = 1:length(files)
    Velocity_x= u_originalsess;
    velocity_xavg(i)= nanmean(Velocity_x(:));
end
save('velo_xxg0.mat','velocity_xavg');
```

loading

```
load('velo_xxg0.mat');
```

```
load('conversionfxg0.mat');
```

```
veloc_cmxg0=(velocity_xavg./length_all)/0.167; %here same process as above but since the camera captures every 60 s we had to incorportare it into the conversion. B
```

miscellaneous

```
load('conversionfxg0.mat');
```

```
x=load('v_originalsess16.mat');
maaa=nanmean(u_original{1,1});
```

Published with MATLAB® R2023b