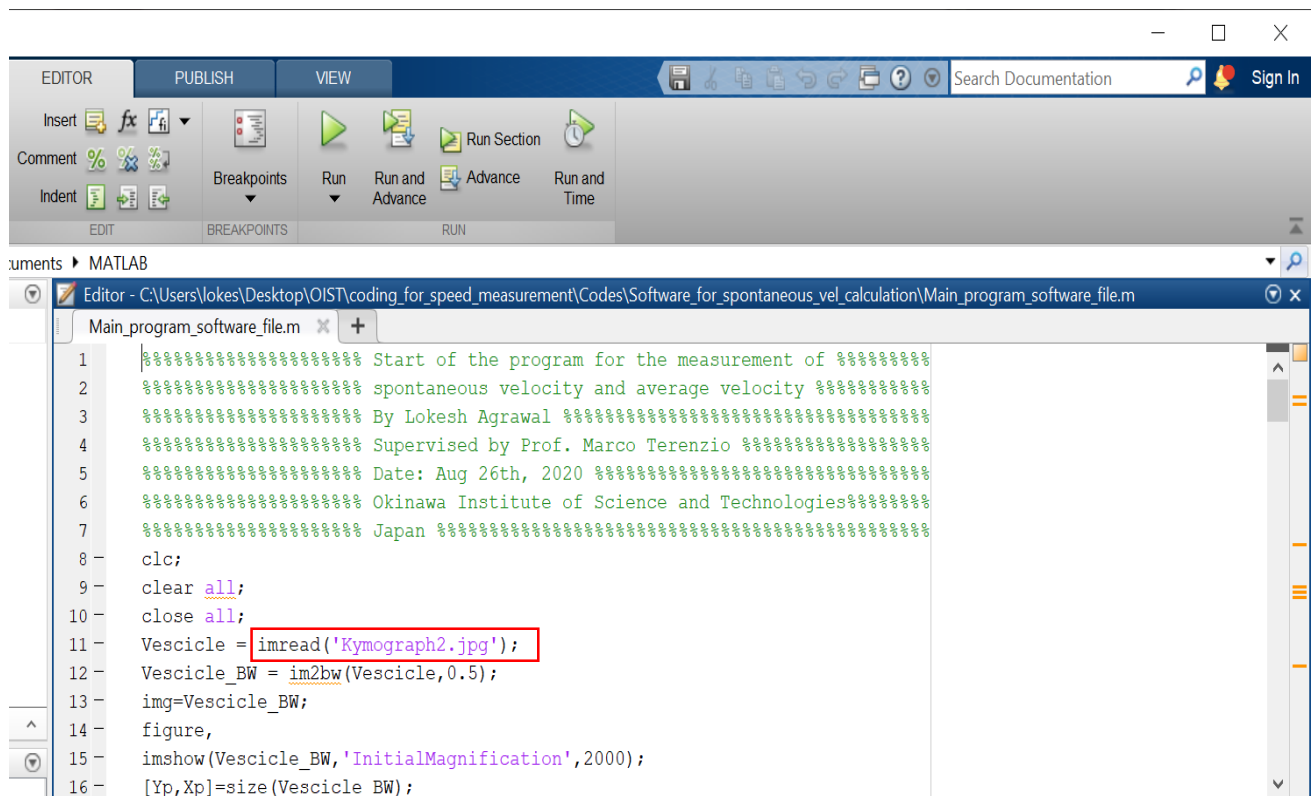


Algorithm Instantaneous_vel_V1.0_July_2020: Algorithm for the measurement of instantaneous velocity and average velocity for the path selected by user on a Kymograph.

Developed by: Lokesh Agrawal (post-doc fellow) in the supervision of Prof. Marco Terenzio, Molecular neuroscience unit, Okinawa institute of science and Technology, Okinawa, Japan

How to run the algorithm: please follow the following steps:

1. Download the MATLAB version 2019a or higher versions.
2. Download the folder (**Algorithm Instantaneous_vel_V1.0_July_2020**) containing all the matlab file of the algorithm.
3. Open the Main_program_software file in matlab software.
4. Provide the path of the Kymograph image for the analysis in imread function;
for eg. imread ('C:\Spontaneous_vel\Kymograph.jpg/tif')



```
1 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%% Start of the program for the measurement of %%%%%%%%%%%
2 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%% spontaneous velocity and average velocity %%%%%%%%%%%
3 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%% By Lokesh Agrawal %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
4 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%% Supervised by Prof. Marco Terenzio %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
5 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%% Date: Aug 26th, 2020 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
6 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%% Okinawa Institute of Science and Technologies%%%%%%%%%%
7 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%% Japan %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
8
9 clc;
10 clear all;
11 close all;
12 Vescicle = imread('Kymograph2.jpg');
13 Vescicle_BW = im2bw(Vescicle,0.5);
14 img=Vescicle_BW;
15 figure,
16 imshow(Vescicle_BW, 'InitialMagnification',2000);
17 [Yp,Xp]=size(Vescicle_BW);
```

