

**Software 1. Tethered-motor tip-tracking.**  
(Gudimchuk et al., 2012)

`L=CENP_E_tracking(MT, T,savefolder)`

Program parameters:

MT – string, determining MT polymerization status. 'd' – for depolymerization; 'p' – for polymerization.

T – upper time limit for a calculation (sec)

savefolder – string , containing a path to a folder for saving the output file

L – tip tracking run length (nm), i.e. the distance traveled by CENP-E with the MT tip (between the first encounter with the MT tip and CENP-E's dissociation from MT or the end of the calculation)

Model parameters:

Model parameters and initial conditions should be specified in the respective sections of the code.

Example run:

`CENP_E_tracking('p', 30,'C:\Users\User1\Desktop\2res');`

Output

- 1) Kymograph-like plot of the following coordinates vs time: MT tip, CENP-E motor domain 1, CENP-E tail.
- 2) TXT file with the following columns: time (sec), MT tip position (nm), CENP-E tail position (nm), CENP-E motor domain 1 position (nm), CENP-E motor domain 2 position (nm).