Calculations

Density – average occupancy of particles – can be calculated by clicking “start calculation” in density menu. “Show Density” allows to show the calculation result; the average is taking from the time “start calculation” is clicked to the time “Show Density” is clicked. The displayed density plot can be saved by “Save Plot”. In the density plot, the x-axis show the scaled space while the y-axis show the density value; different colours corresponds to different species or types of particles. ‘Save Data’: save the density of particles.

Density – average current of particles – can be calculated by clicking “start calculation” in density menu. “show current”: show the calculation result; the average is taking from the time “start calculation” is clicked to the time “show current” is clicked. ‘Save Data’: save the current of particles

Run length – particle run length from right end. To start this calculation, click the ‘From End’. ‘Show Distribution’ show the run length distribution obtained. ‘Save Data’: save the list of run length values in unit of lattice site.

Colocalization – calculation of colocalization of particles with dynein motors: i.e. number of each type of particles leaving from tip (right end of the bundle) along the bundle from left to right. ‘From Tip’: start the recording of particles leaving from tip. ‘Save’: save the 2\*L matrix of colocalization (where L is the length of bundle)

Pause – pausing time of labelled particles if they pause over a given threshold (pausemin) set in parameter.h. ‘Start Record’: start the calculation of labelled particles. ‘Save Data’: save the list of pausing time recorded.

Tip Size -- calculation of number of particles at the tip region. one needs to set tip region by clicking ‘Set Tip Region’ and start recording by clicking ‘Start Calculation’. ‘Show Tipsize’: show the plot of tip tip as a function of time t

Projection -- project particles to 1D along the bundle. ‘EE distance’ shows distribution of distance between neighbouring particles (i.e. EEs). ‘EE number’: shows the accumulative distribution of particle number along the bundle axis, and calculate the difference to an even distribution, i.e. the maximum absolute difference in the accumulative distribution in terms of number of particles. ‘Start Distribution’: start record the difference score between the projection particle distribution along bundle axis to even distribution. ‘Show Scores’: show the score as a function of time t. ‘Save Data’: save the projected particle state

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