Constructing a Manual Driftlist:

1. Open protein file in Matlab.
2. [fn fp] = uigetfile then choose the file with your protein data.
3. Foldstruc.gfolder = fp
4. Imscroll(foldstruc), interface should open.
5. If using beads, pick brightest spots by increasing spot brightness in the auto spot picking box. Make sure spots are present during whole movie by scrolling through the frames.

If beads weren’t used, go to end of movie and pick spots by adjusting brightness to 15-20. Scroll back to middle and click remove MT aoi in the mapping box. Scroll back to beginning and click remove MT aoi again. Hopefully a few spots are remaining.

1. Change frame range at the top of the interface to the range of the protein file. Click track aois and proxmap.
2. Type load(‘C:\Matlab\data\default.dat’, ‘-mat’)
3. Type dat=draw\_aoifits\_aois\_v1(aoifits,’y’)
4. Type for i = 1:c (c is the number of spots you picked in step 2)

xy\_cell{i}.dat = dat(:,:,i)

xy\_cell{i}.range = [1 F] (F is the last frame in the video.)

xy\_cell{i}.userange = [1 F]

1. Type CorrectionRange = [1 F]
2. Type SequenceLength = F
3. Type [fn fp] = uigetfile then choose protein file again.
4. Type eval([‘load ‘ [fp fn] ‘ –mat’])
5. Type drifts\_time=construct\_driftlist\_time\_v1(xy\_cell,vid,CorrectionRange,SequenceLength, [4 4],[2 15 2 15]);
6. Click the figures that pop up and assess the quality of the drifts. (In figure with frames vs pixel, drift should be similar for all spots. If sudden spike, check movie.)
7. Edit userange of each spot if necessary.
8. xy\_cell{S}.userange = [1 N] (N is desired range of use)
9. drifts\_time=construct\_driftlist\_time\_v1(xy\_cell,vid,CorrectionRange,SequenceLength, [4 4],[2 15 2 15]);
10. drifts=driftlist\_time\_interp(drifts\_time.cumdriftlist,vid);
11. foldstruc.DriftList = drifts.diffdriftlist;
12. driftlist = drifts.diffdriftlist
13. Save the driftlist and stuff used to make it.
14. save C:\Matlab\data\00###\_driftlist\_parameters.dat xy\_cell CorrectionRange SequenceLength
15. save C:\Matlab\data\00###\_driftlist\_generation.dat xy\_cell CorrectionRange SequenceLength vid
16. save C:\Matlab\data\00###\_driftlist.dat driftlist