

Figure S1.

Immobile complexes. In this figure we show the tracking of 3 complexes that we observe immobile on the microtubule or the surface. Left panel: trajectory in (x, y) plane. Central panel and right panel:  $\Delta x$  and  $\Delta y$  versus time indicating the pointing accuracy ( $\sim 10\text{nm}$ ).

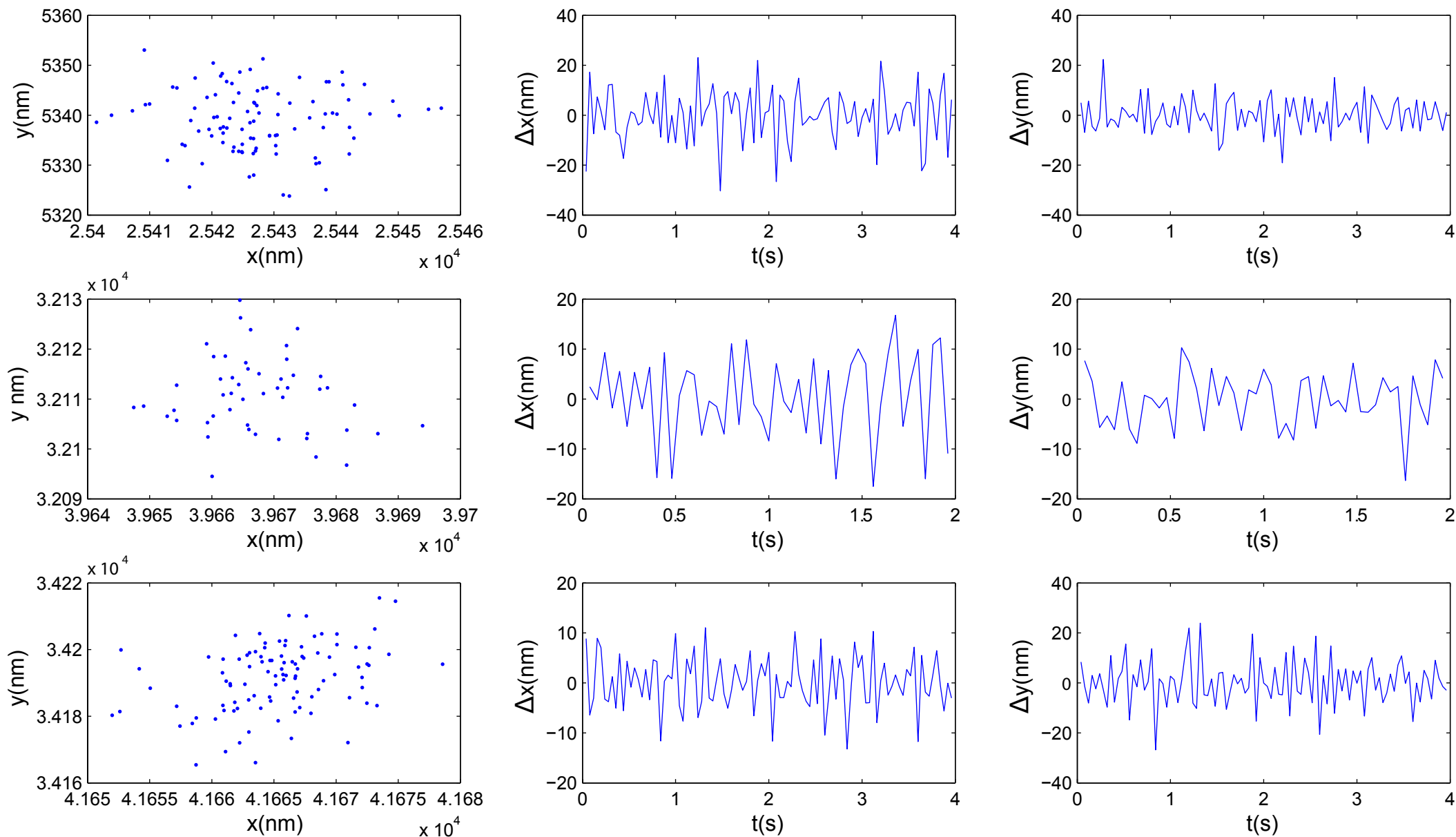


Figure S2.

Directed motions. The left panel reports the trajectory in (x,y). We also report the fit of the positions (x, y) along a straight line. In fact, the microtubules on the glass surface are considered in our analysis as straight lines. The trajectories are following projected along the straight lines and the motion is described by the parallel component, indicating the displacement of the complex along the filament (central panel). In the right panel we show the mean square displacement and the fit  $\text{MSD}(t) = at^b$ .

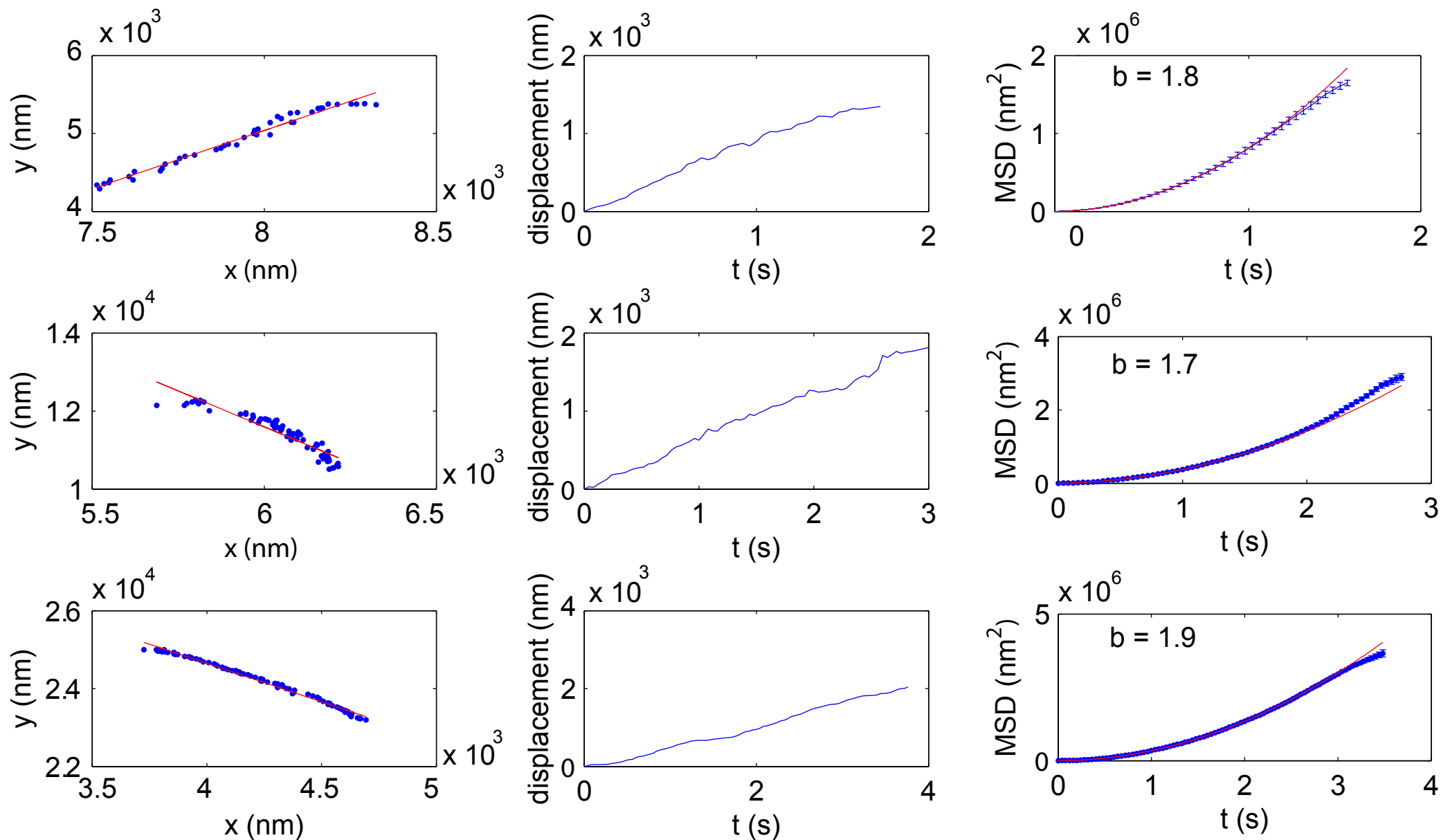


Figure S3.

Confined motion. We analyze the complexes that locally diffuse. We notice that these movements are the confined diffusions (b exponent from the MSD is lower than 1) and the amplitude of the confinement is around 100-200nm. Left panel: trajectory in (x, y) plane and linear fit that indicates the microtubule position. Central panel: parallel component versus time. Right panel: mean square displacement.

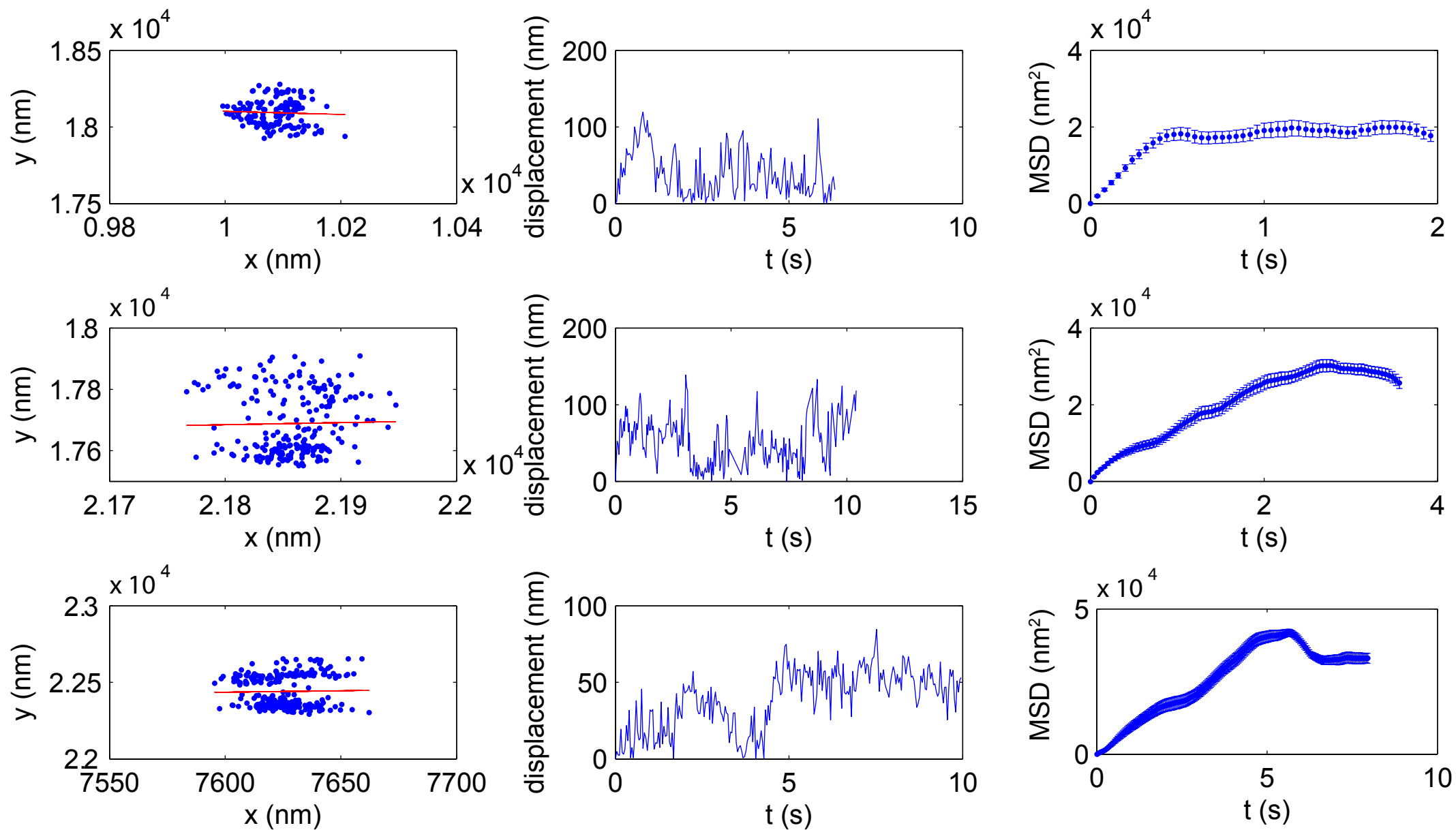


Figure S4.

Bidirectional motion. We analyze the complexes that show a bidirectional motion. Left panel: trajectory in (x, y) plane and linear fit indicating the microtubule position. Central panel: parallel component versus time. Right panel: distribution of the velocity averaged on time interval of 0.5s. Distributions highlight the bidirectional behavior of these trajectories.

