Program Name	***Input file(s)***	***Output file(s)***	***What it does***
filterMinfluxData.m	Matlab version (.mat) of MINFLUX raw data file for scaffold and cargo	Track_data_array Track_ID Time Coordinates	Filter MINFLUX data based on EFO, CFR, DCR, and track length parameters to isolate individual localizations. Provide track ID, timestamp, and XYZ coordinates for valid localizations.
separate_cluster_MINFLUX.m	Scaffold localization.txt. (should contain track ID, timestamp, and XYZ coordinates)	1cluster.txt 2cluster.txt etc.	Extracts the ID, timestamp, and coordinates of individual clusters into separate text files.
estimate_cylinder_MINFLUX.m	1cluster.txt 2cluster.txt etc.	clusterx_center.txt clustery_center.txt clusterz_center.txt clusterdiameter.txt clusterheight.txt	Double circle fitting of individual clusters
select_pores_MINFLUX.m	1cluster.txt 2cluster.txt etc. clusterx_center.txt clustery_center.txt clusterz_center.txt clusterdiameter.txt clusterheight.txt	1pore.txt 2pore.txt etc. porex_center.txt porey_center.txt porez_center.txt porediameter.txt poreheight.txt	Selects those clusters having at least 20 points with a fit diameter of 80-135 nm, a height of 40-65 nm, and *z*-center of 0±200 nm
circlefit_bisquare_MINFLUX.m	1pore.txt 2pore.txt etc.	1porebisquare.txt 2porebisquare.txt etc.	Fits all cluster localizations to a circle projected into the *xy*-plane and eliminates localizations whose residual was more than two standard deviations away from the circle
pore_rotation_MINFLUX_step1.m	porebisquare.txt porex_center.txt porey_center.txt	1pore_ninety_normalized.txt 2pore_ninety_normalized.txt etc.	Finds the angle (0-90º) of each point in a cluster relative to the centroid
pore_rotation_MINFLUX _step2.m	1pore_ninety_normalized.txt 2pore_ninety_normalized.txt etc.	1pore_fortyfive.txt 2pore_fortyfive.txt etc.	Finds the angle (0-45º) of each point in a pore in a cluster relative to the centroid
pore_rotation_MINFLUX _step3.m	1pore_fortyfive.txt, 2pore_fortyfive.txt etc.	1phase_norm.txt 2phase_norm.txt etc.	Determines the angle distribution histogram (0-45º) of the localizations in each cluster with a bin of 5º
pore_rotation_MINFLUX_step4_fitting.m	1phase_norm.txt, 2phase_norm.txt etc.	rot_angle.txt	Determines the angle of rotation for the cluster by fitting the angle distribution histogram to a sinusoidal function with a

			period of 45° and a variable phase
centering_pore_MINFLUX _step5.m	porex_center.txt porey_center.txt porez_center.txt 1porebisquare.txt 2porebisquare.txt etc.	1pore_centered.txt 2pore_centered.txt etc.	Translates the center of all clusters to (x, y, z) = (0, 0, 0)
pore_rotation_MINFLUX _step6.m	rot_angle.txt 1pore_centered.txt 2pore_centered.txt etc.	1pore_rotated.txt 2pore_rotated.txt etc.	Rotates every point in a cluster by its phase angle
merge_after_rotation_MINFLUX _step7.m	1pore_rotated.txt 2pore_rotated.txt etc.	pore_merged_rotated.txt	Merges all the data from all clusters
pore_rotate_back_MINFLUX_step8.m	pore_merged_rotated.txt	pore_merged_rotated back.txt	There is always a 8.4 degree inherent rotation of pore. this step compensates for that rotation
green2red_transfer_matrix_MINFLUX.m	calib-green.txt calib-red.txt	g2r_transfer_matrix.txt	Calculates the image alignment matrix to transform green channel coordinates into the red channel coordinate system
green_localization_in_red_channel_MINFLUX.m	Trackdataxyz.txt g2r_transfer_matrix.txt	spots_photon_filtered_calib.txt	Transforms the green/yellow channel coordinates into the red channel coordinate system
track_localize_whole_roi_MINFLUX.m	spots_photon_filtered_calib.txt	track to whole1.txt track to whole2.txt etc.	Identifies all cargo complex localizations within a 600 nm cube centered on an NPC centroid
centering_tracks_wrt_whole_MINFLUX.m	porex_center.txt porey_center.txt porez_center.txt track to whole1.txt track to whole2.txt etc.	track_cen_wrt_whole1.txt track_cen_wrt_whole2.txt etc.	Translates cargo complex localizations to the averaged NPC scaffold
track_rotation_in_whole_MINFLUX.m	rot_angle.txt track_cen_wrt_whole1.txt track_cen_wrt_whole2.txt etc.	track to whole rotated1.txt track to whole rotated2.txt etc.	Rotates cargo complex localizations based on the phase angle of the cluster it is associated with
merge_after_rotation_whole_MINFLUX.m	track to whole rotated1.txt track to whole rotated2.txt etc.	track_merged_rotated_whole.txt	Merge MINFLUX tracks after rotation.