**Create\_tform.m**

Estimate the transform matrix between x and y channels.

The example data:

data151\_xch is thunderstorm estimation results for beads in x channel.

data151\_ych is thunderstorm estimation results for beads in y channel. Note, we don’t have to flip the y channel during the thunderstorm process

**crop\_save\_image.m**

crop and save tiff images based on estimated tform.m

This code allows separate a big FoV into multiple small FoVs.

**background\_estimation\_by\_subtruct\_SMs.m**

Estimate the background by subtract pixels with SMs. Similarly, thunderstorm estimated results are used to determine the position of SM for subtracting.