

## **Persistence version 3\_2 (April 2015)**

Descriptions of generated output files:

Note: “xxx” below represents the user-generated file name.

1. xxx\_selections.mat: used for reanalyzing previously selected filaments.

Column 1: filament position map  $(i, j)=(y, x)$ .

Column 2: position derivative map  $(\frac{di}{dt}, \frac{dj}{dt})=(-\frac{dy}{dt}, \frac{dx}{dt})$ .

**Note:**  $i$  and  $j$  indices correspond to  $y$  and  $x$  axis respectively and  $i$  runs from the top of the image to the bottom, while  $y$  runs from bottom to top. The tangent values are calculated from  $\frac{dj}{dt} / \frac{di}{dt} = -\frac{dx}{dy}$  and  $\frac{di}{dt} / \frac{dj}{dt} = -\frac{dy}{dx}$ . The former, the tangent to the  $y$ -axis, is used by the software.

2. xxx\_Nfils\_Cs\_raw.txt: cosine correlation values.

Column 1: segment length.

Column 2: raw cosine correlation  $(\cos[\theta(s) - \theta(0)])$ .

Column 3: raw relative angle  $(\theta(s) - \theta(0))$ .

3. xxx\_Nfils\_ave\_Cs.txt:

Column 1: segment length.

Column 2: averaged cosine correlation values.

Column 3: standard deviation of cosine correlation.

Column 4: standard error of cosine correlation.

Column 5: average relative angle.

Column 6: standard deviation of relative angle.

Column 7: standard error of relative angle.

Column 8: number of raw data points for the corresponding averaged data point.

4. xxx\_Nfils\_bending\_modes.txt:

Column 1: contour length.

Column 2: end to end distance.

Columns 3 and 4: centroid.

Columns 5 to 14: first 10 Fourier cosine mode amplitudes.

Column 15: frame number.

Column 16: filament number in the corresponding frame.

5. xxx\_\_Nfils\_end\_to\_end\_vs\_contour\_lengths.txt:

Column 1: contour length.

Column 2: end-to-end length.

6. xxx\_\_Nfils\_tangent\_angles.txt:

Column 1: filament identifier.

Column 2: segment length from one end to the data point.

Column 3: raw data for tangent angle relative to  $i$  index, i.e.  $y$ -axis (see explanation in file 1 description).

Column 4: curvature values.

Column 5: frame number.

Column 6: filament number in the corresponding frame.

7. xxx\_\_Nfils\_contours.txt:

Column 1: filament identifier.

Columns 2 and 3:  $i$  and  $j$  position indices of filaments.

Columns 4 and 5:  $\frac{di}{dt}$  and  $\frac{dj}{dt}$  values (see explanation in file 1 description).

Column 6: frame number.

Column 7: filament number in the corresponding frame.