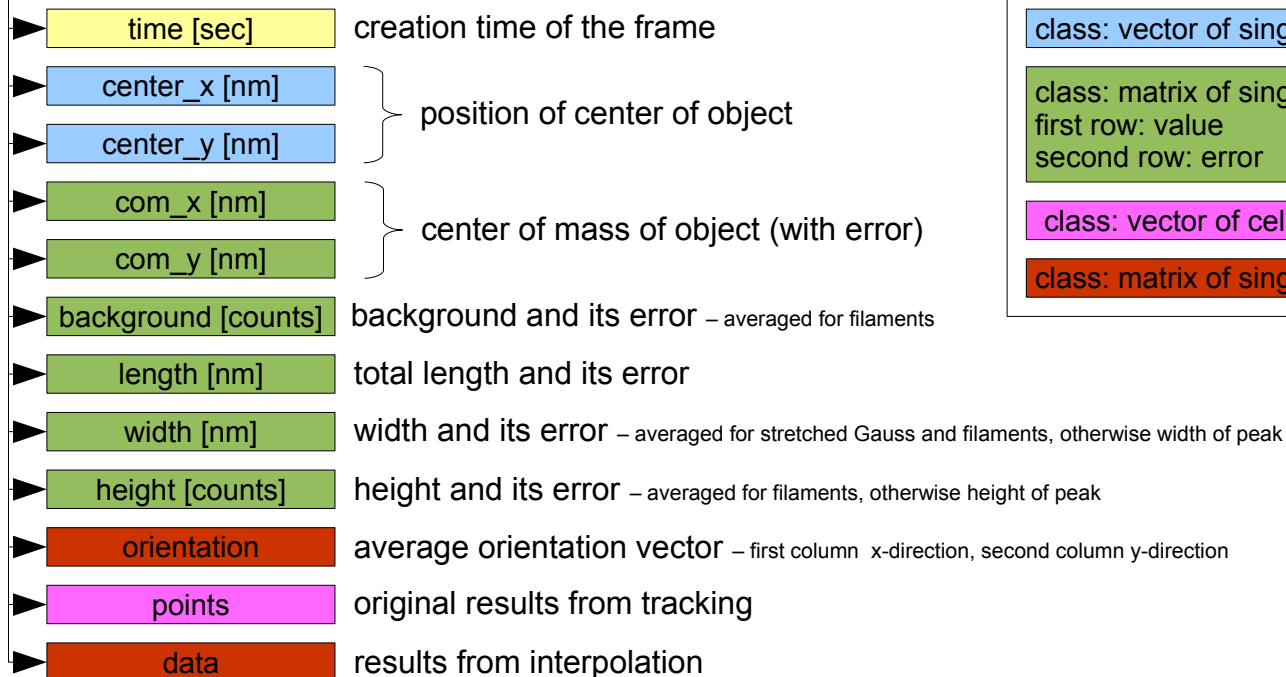


## Objects - cell array containing frames

Frame 1    Frame 2    Frame 3    ...



data for symmetric Gauss function

empty

data for stretched Gauss function

axis	width [nm]
major	xxx
minor	xxx

data for symmetric Gauss functions  
with additional Gaussian rings

ring	radius [nm]	width [nm]	height [counts]
1	xxx	xxx	xxx
(2)	xxx	xxx	xxx

data for filaments

point	x-position [nm]	y-position [nm]	z-position [nm]	distance [nm]	width [nm]	height [counts]	background [counts]
1	xxx	xxx	xxx	0	xxx	xxx	xxx
2	xxx	xxx	xxx	xxx	xxx	xxx	xxx
...	xxx	xxx	xxx	xxx	xxx	xxx	xxx

- widths are given in FWHM values (the units are pixels times the given scaling)
- angles are given in counter-clockwise orientation in the interval  $[0, 2\pi]$ , 0 pointing to the right
- background and height are given in the scale of the input image
- the height is the maximum height of the object at this point minus the background

**Molecule** – vector of structure containing molecule track data

Molecule 1 Molecule 2 Molecule 3 ...

legend:

class: vector of char

class: scalar of double

class: vector of double

class: matrix of double

class: matrix of single

class: vector of cells

- ▶ **Name** name of the molecule
- ▶ **File** filename of the image stack
- ▶ **Comments** custom comment field
- ▶ **Type** type of molecule: 'symmetric','stretched','ring1'
- ▶ **Selected** flag if molecule is selected
- ▶ **Visible** flag if molecule is visible
- ▶ **Drift** flag if molecule is drift corrected
- ▶ **PixelSize [nm]** original size of pixel for scaling
- ▶ **Channel** index of original channel when tracked
- ▶ **Color** color code of line color for plotting tracks [R G B]
- ▶ **PlotHandles** graphics handles for plotting the tracks
- ▶ **Results** results of complete track as table – see variations for different types

▼ Type='symmetric'

frame	time [sec]	x-position [nm]	y-position [nm]	z-position [nm]	distance [nm] <i>(to origin)</i>	width [nm]	height [counts]	ΔR [nm]
xxx	xxx	xxx	xxx	xxx	0	xxx	xxx	xxx
xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx

+ ▼			+ ▼			+ ▼ for all	
width [nm] <i>(major axis)</i>	width [nm] <i>(minor axis)</i>	orientation [rad]	radius [nm] <i>(ring)</i>	width [nm] <i>(ring)</i>	height [counts] <i>(ring)</i>	tags [bit]	last column always reserved for tags in bit-wise notation: tag <sub>n</sub> ;...;tag <sub>1</sub> ;reserved e.g. setting tag <sub>2</sub> and tag <sub>5</sub> would result in 100100
xxx	xxx	xxx	xxx	xxx	xxx	xxx	
xxx	xxx	xxx	xxx	xxx	xxx	xxx	

Type='stretched'

Type='ring1'

use `flipplr(dec2bin(tags)=='1')` to get logical matrix for any tag in ascending order (flipped)

- ▶ **PathData** results of path statistics

x-position [nm] <i>(of path)</i>	y-position [nm] <i>(of path)</i>	z-position [nm] <i>(of path)</i>	distance [nm] <i>(along path)</i>	sideways [nm] <i>(to path)</i>	height [nm] <i>(to path)</i>
xxx	xxx	xxx	xxx	xxx	xxx
xxx	xxx	xxx	xxx	xxx	xxx

- ▶ **TrackingResults** original points from tracking for each frame

- widths are given in FWHM values (the units are pixels times the given scaling)
- angles are given in counter-clockwise orientation in respect to first frame of track (cumulative angle)
- background and height are given in the scale of the input image
- the height is the maximum height of the object at this point minus the background

**Filament** – vector of structure containing filament track data

Filament 1   Filament 2   Filament 3   ...

legend:

class: vector of char

class: scalar of double

class: vector of double

class: matrix of double

class: matrix of single

class: vector of cells

- ▶ **Name** name of the filament
- ▶ **File** filename of the image stack
- ▶ **Comments** custom comment field
- ▶ **Selected** flag if molecule is selected
- ▶ **Visible** flag if molecule is visible
- ▶ **Drift** flag if molecule is drift corrected
- ▶ **PixelSize [nm]** original size of pixel for scaling
- ▶ **Channel** index of original channel when tracked
- ▶ **Color** color code of line color for plotting tracks [R G B]
- ▶ **PlotHandles** graphics handles for plotting the tracks
- ▶ **Results** results of complete track as table – see variations for different types

frame	time [sec]	x-pos [nm]	y-pos [nm]	z-pos [nm]	dist. [nm] <i>(to origin)</i>	length [nm]	height [counts]	orientation [rad]	tags [bit] <i>(see page 2)</i>
xxx	xxx	xxx	xxx	xxx	0	xxx	xxx	xxx	xxx
xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx

- ▶ **PosStart** position of first point
- ▶ **PosCenter** position of center point
- ▶ **PosEnd** position of last point
- ▶ **Data** all filament positions and interpolated results – see Objects (page 1)
- ▶ **PathData** results of path statistics

x-position [nm]	y-position [nm]	z-position [nm]
xxx	xxx	xxx
xxx	xxx	xxx

x-position [nm] <i>(of path)</i>	y-position [nm] <i>(of path)</i>	z-position [nm] <i>(of path)</i>	distance [nm] <i>(along path)</i>	sideways [nm] <i>(to path)</i>	height [nm] <i>(to path)</i>
xxx	xxx	xxx	xxx	xxx	xxx
xxx	xxx	xxx	xxx	xxx	xxx

- ▶ **TrackingResults** original points from tracking for each frame

- widths are given in FWHM values (the units are pixels times the given scaling)
- angles are given in counter-clockwise orientation in respect to first frame of track (cumulative angle)
- background and height are given in the scale of the input image
- the height is the maximum height of the object at this point minus the background