

BIOMED - TP 1

Detection and tracking of spots

Marie Diez

1 Detect and track spots

Protocole to detect and track spots :

- Clean the image
We can use a threshold plugin to keep the white spots like the *threshold* plugin using values 450 600.
- Use spot tracking
First we have to check the swimming pool option for the tracking next, i also used scale 2 to detect object size around 3 pixels and i check the bright spot over black background option. Then after that the detection is done we have to track the spot, i use an expected track lenght of 10 because of my computer performances.

I use a cropped version of the image *Tracking_FITC.tif* because of my computer performances, without that the detection crash every time.

This is some results :

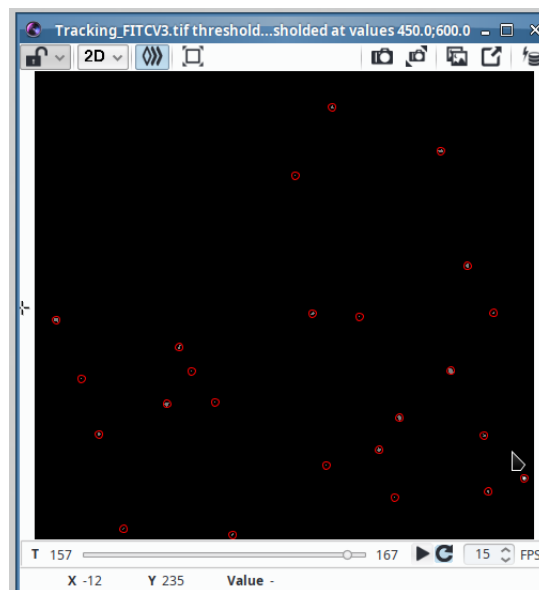


Figure 1: Spots detection after thresholding

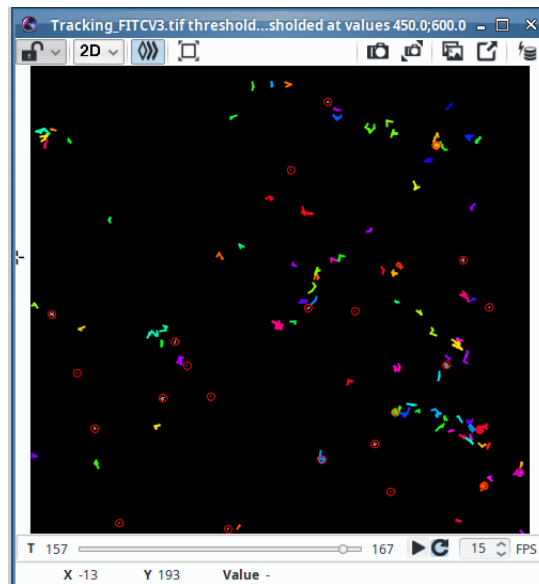


Figure 2: Spots tracking

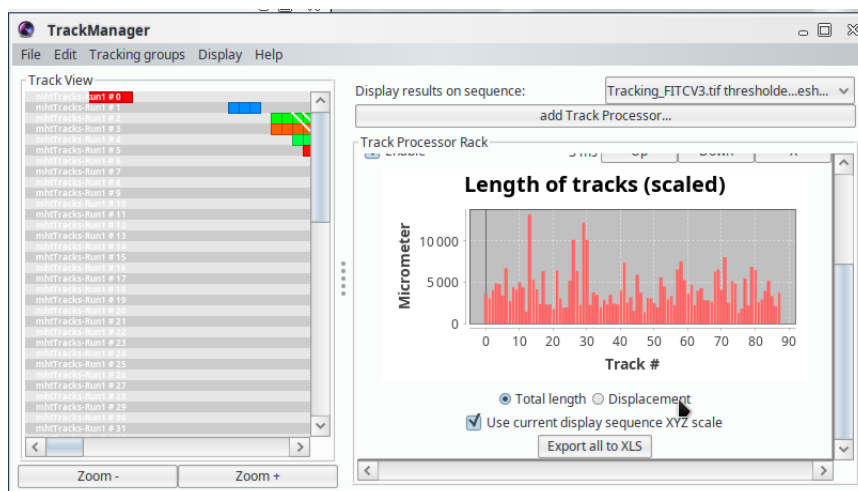


Figure 3: Track lenght

	A	B	C	D	E	F	G
70	68	17,89437	6312,738	0,707107	249,4516	8	8
71	69	11,59469	4090,35	3,479215	1227,39	5	5
72	70	18,58123	6555,047	3,643131	1285,215	6	6
73	71	22,78345	8037,495	8,231418	2903,861	9	9
74	72	7,130702	2515,553	4,596194	1621,435	3	3
75	73	14,5353	5127,732	8,062258	2844,185	7	7
76	74	13,69062	4829,746	2,944156	1038,633	6	6
77	75	3,618553	1276,545	3,605551	1271,958	3	3
78	76	5,094188	1797,116	4,561429	1609,171	4	4
79	77	15,45969	5453,836	11,35396	4005,426	8	8
80	78	6,252359	2205,693	3,119865	1100,619	5	5
81	79	19,46114	6865,456	0,263406	92,92378	8	8
82	80	18,38385	6485,414	9,135016	3222,631	6	6
83	81	7,32339	2583,529	4,761712	1679,826	3	3
84	82	8,227523	2902,487	4,27079	1506,64	6	6
85	83	14,68673	5181,152	4,098905	1446,003	6	6
86	84	11,1149	3921,089	7,49987	2645,788	5	5
87	85	9,411693	3320,236	8,248625	2909,932	5	5
88	86	6	2116,667	4,472136	1577,67	3	3
89	87	10,57774	3731,592	9,412969	3320,686	4	4
90							5,22727272727273

Figure 4: Average length computation

We can also have lot more informations with all the track processor plugins :

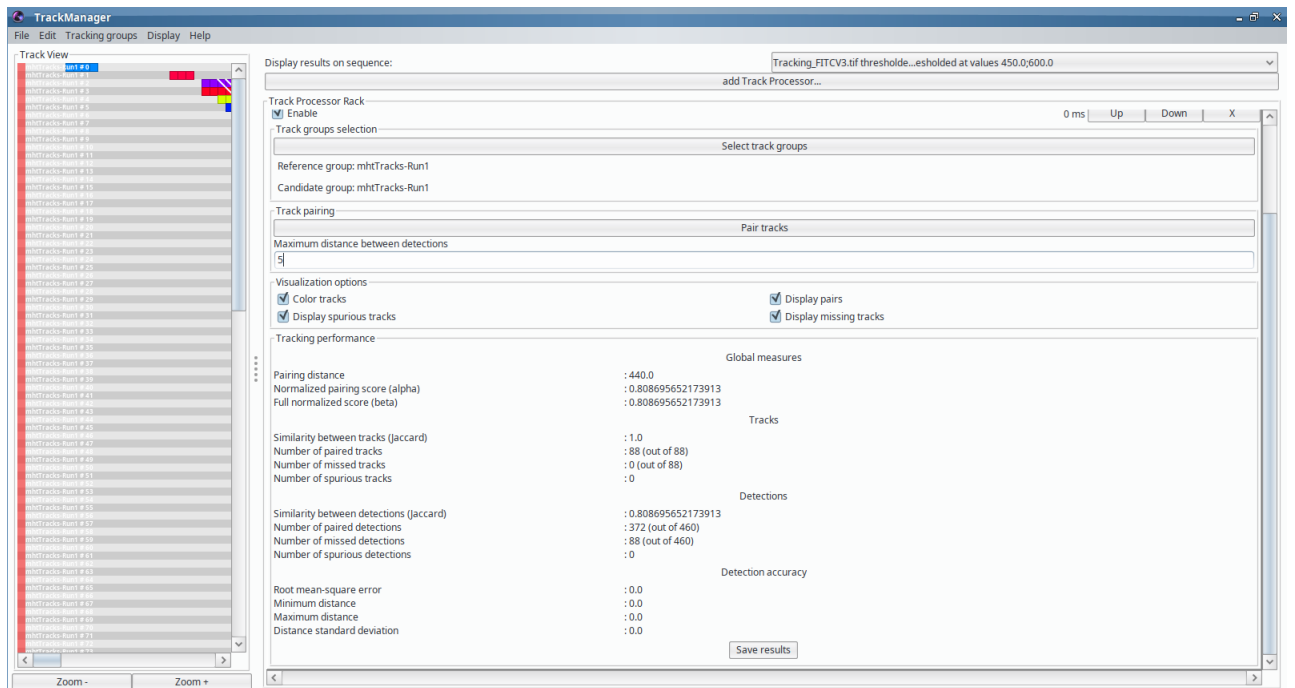


Figure 5: Tracking performance computation

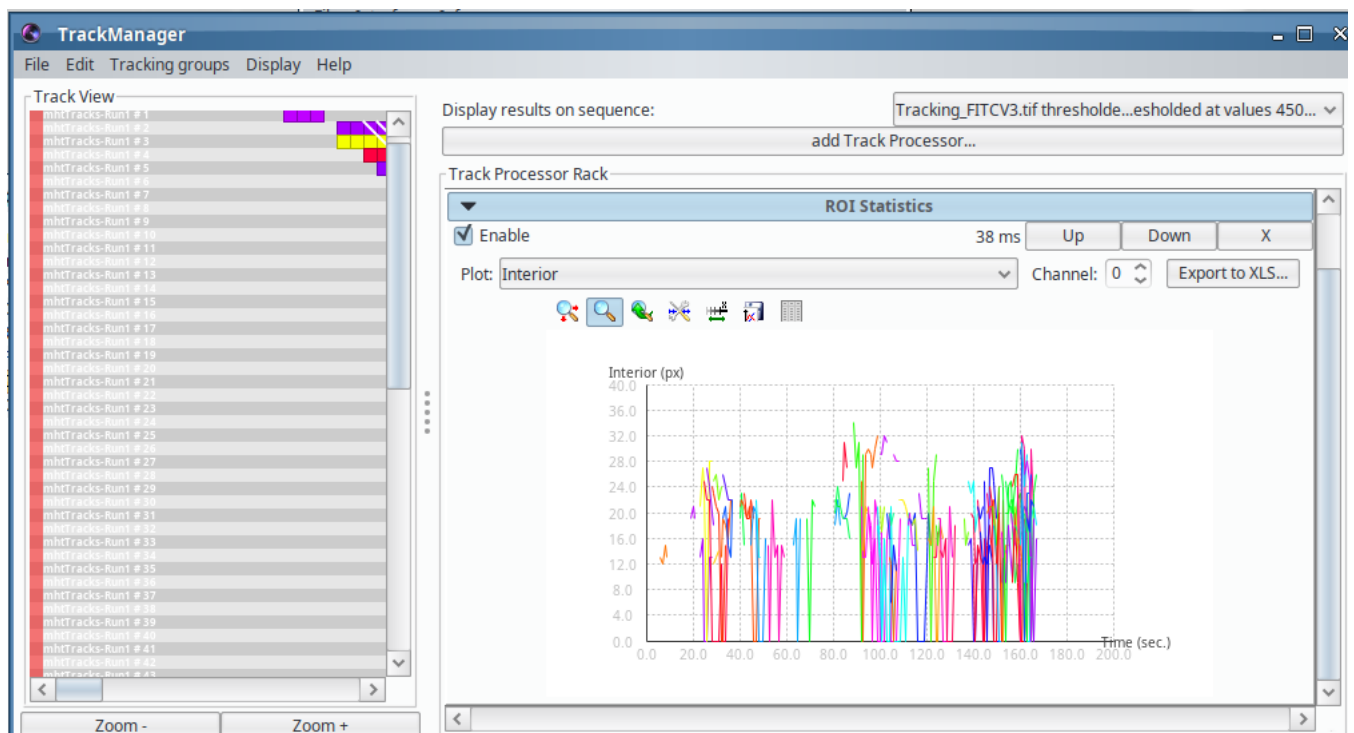


Figure 6: ROI Statistics

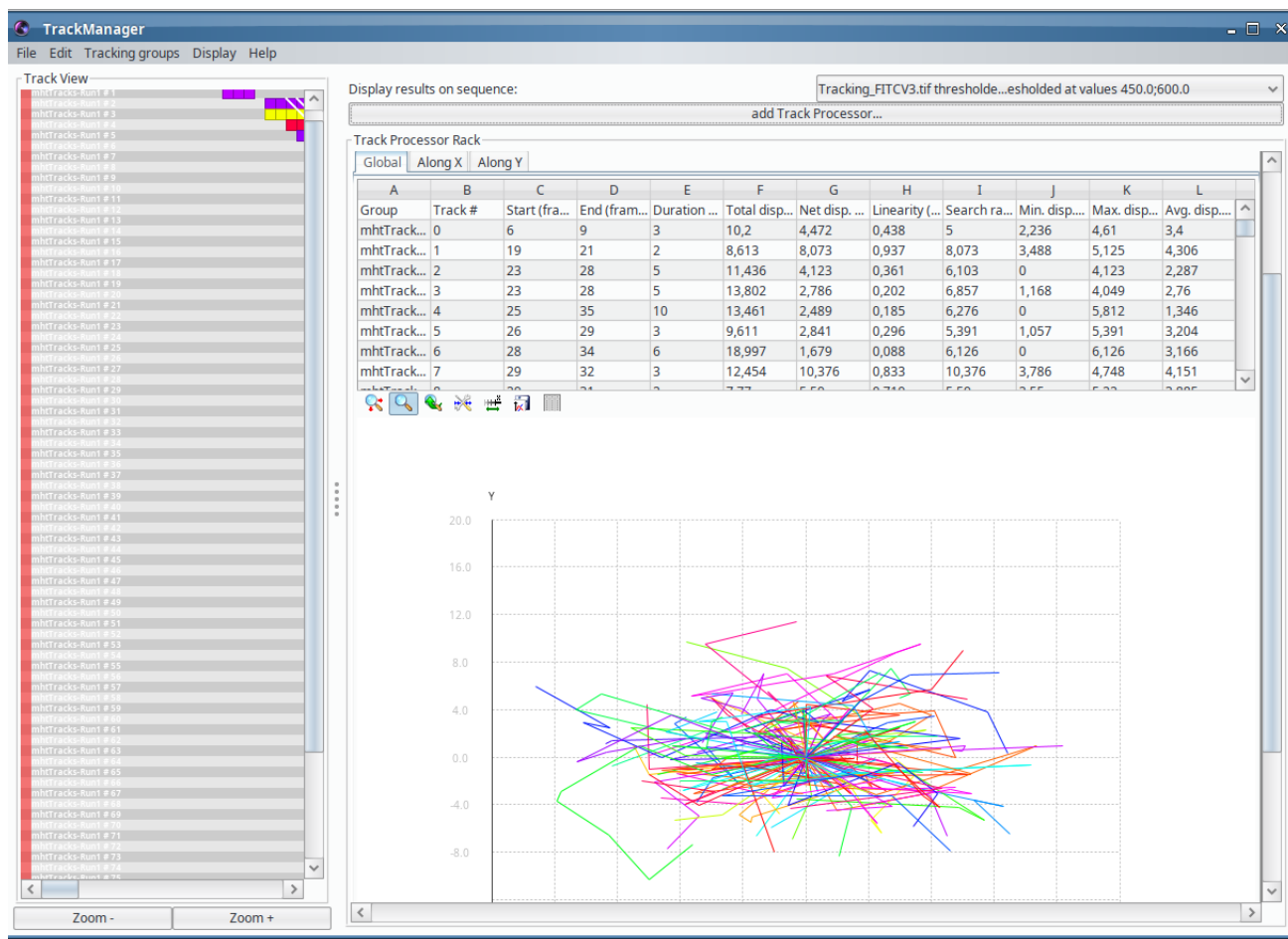


Figure 7: Motion profiler