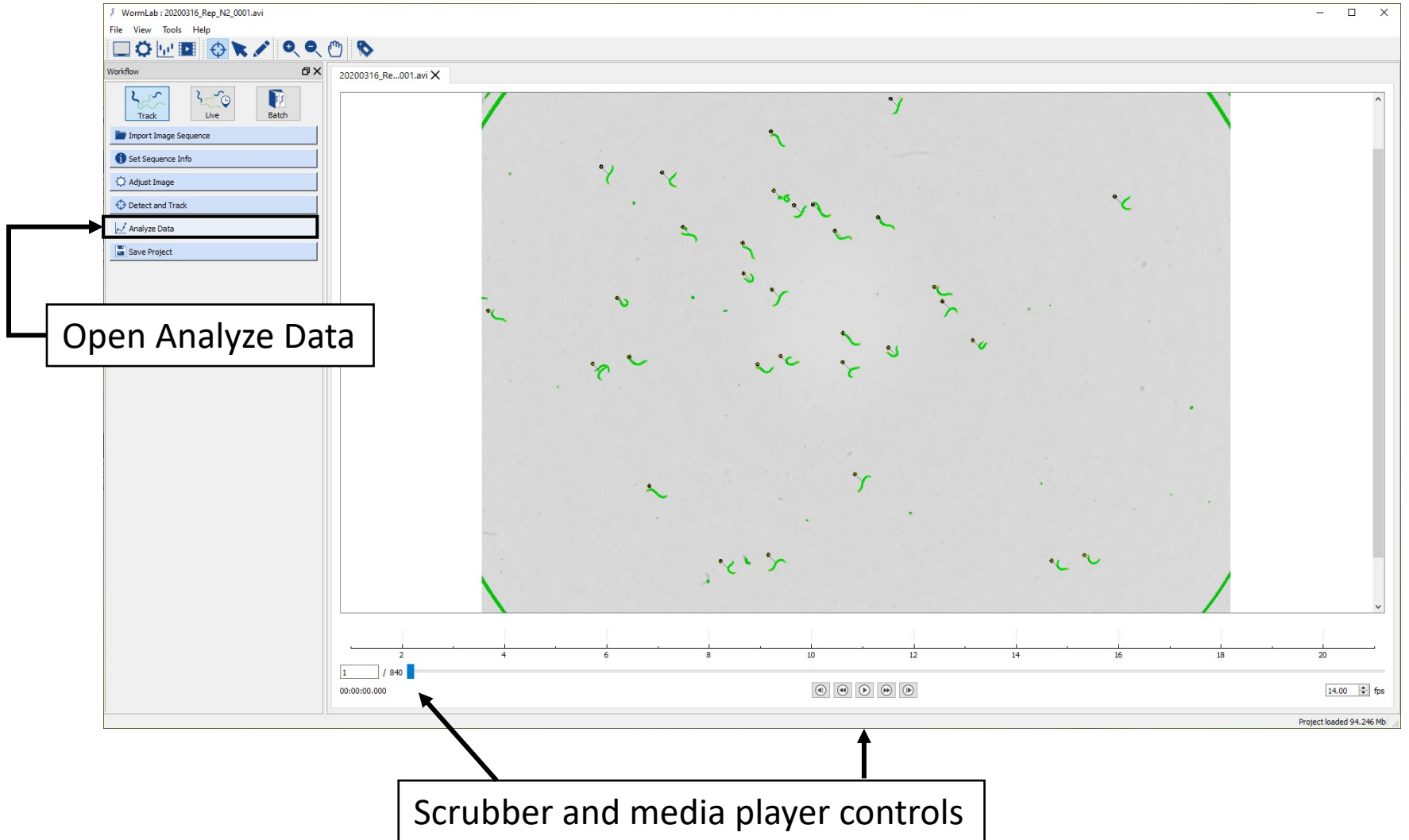


A



B

The screenshot displays the WormLab software interface. On the left, a workflow panel includes options like 'Track', 'Live', and 'Batch'. The main window is titled 'Data Analysis and Plotting' and features a tree view of analysis options. An arrow points from a text box to the 'Track Summary' option in this tree. Below the tree are filtering options, including 'Kalman Smoothing', and an 'Export selected' button. The 'Position' section has a dropdown set to 'Mid-point' and a 'Refresh Data' button. On the right, a 'Data' table shows columns for 'Time' and 'Track Number' (1-8), with rows for 'Frame Number' 1-14. Below the table is a 'Mid-point Position' plot showing 'Y Position (um)' vs 'X Position (um)' for tracks 1-7. The Windows taskbar at the bottom shows the time as 2:50 PM on 5/3/2021.

Go to Track Summary

Frame Number	Time	1	2	3	4	5	6	7	8
1	0.000	3902.603, 22386	15646.867, 2081	11106.901, 1958	4825.842, 18279	7119.746, 18093	24105.238, 1718	12690.066, 1686	12021.585, 1682
2	0.071	3911.134, 22392	15662.196, 2077	11118.514, 1956	4846.130, 18285	7183.547, 18117	24142.849, 1721	12724.392, 1687	12004.626, 1683
3	0.143	3924.356, 22389	15671.679, 2074	11142.977, 1956	4849.666, 18297	7235.114, 18142	24158.571, 1725	12775.586, 1690	11976.376, 1684
4	0.214	3943.962, 22374	15670.168, 2072	11181.287, 1957	4825.114, 18315	7258.611, 18159	24137.207, 1727	12835.724, 1693	11931.975, 1687
5	0.286	3970.111, 22348	15657.710, 2072	11212.280, 1958	4775.955, 18341	7244.244, 18159	24084.635, 1730	12873.929, 1694	11888.359, 1689
6	0.357	4006.921, 22306	15635.581, 2073	11213.886, 1957	4737.498, 18366	7194.010, 18145	24034.107, 1733	12874.362, 1693	11864.374, 1690
7	0.429	4039.442, 22272	15602.249, 2075	11192.270, 1955	4730.583, 18380	7145.314, 18139	24010.895, 1736	12850.986, 1688	11868.977, 1689
8	0.500	4057.648, 22267	15575.424, 2077	11161.757, 1951	4756.003, 18386	7124.959, 18149	24013.770, 1737	12839.113, 1685	11896.023, 1688
9	0.571	4067.449, 22290	15563.254, 2078	11147.986, 1947	4807.628, 18396	7143.157, 18174	24038.224, 1736	12852.714, 1684	11925.297, 1683
10	0.643	4076.664, 22333	15565.014, 2077	11164.502, 1947	4841.898, 18409	7193.419, 18220	24079.804, 1735	12893.370, 1686	11944.333, 1680
11	0.714	4087.588, 22368	15579.078, 2076	11205.301, 1948	4841.457, 18423	7243.303, 18268	24108.107, 1735	12945.030, 1688	11943.219, 1678
12	0.786	4095.689, 22379	15606.021, 2073	11236.719, 1948	4808.980, 18442	7269.158, 18312	24109.457, 1737	12962.582, 1688	11917.258, 1679
13	0.857	4098.342, 22370	15632.343, 2071	11238.646, 1946	4771.064, 18466	7272.196, 18342	24093.333, 1741	12943.824, 1684	11874.201, 1680
14	0.929	4096.966, 22345	15647.071, 2069	11213.413, 1943	4756.396, 18485	7260.760, 18353	24086.526, 1745	12927.096, 1680	11841.733, 1681

C

Data Analysis and Plotting

Select an Analysis

- Position & Speed
 - Position (um)
 - Center Points (um)
 - Direction
 - Speed (um/s)
 - Moving Average Speed (um/s)
 - Smoothed Speed (um/s)
 - Reversal
 - Mobility
 - Validation
 - Position Speed Statistics
 - Pirouette
 - Track Summary
- Body Shape
- Histograms
- Label Analysis
- Chemotaxis
- Swimming

Filtering option

Kalman Smoothing

Export selected

Track Summary

Refresh Data

Data Report

Track Number

	1	2	3	4	5	6	7	8	9
Mean Worm Length (um)	674.26	686.52	732.80	720.40	718.74	788.12	862.28	722.57	743.37
Mean Width (um)	58.21	61.04	61.53	59.10	61.42	60.78	70.28	73.29	60.90
Mean Area (um²)	39924.05	42604.36	45874.72	43307.35	44904.44	48731.65	61642.91	54192.86	46048.25
Track Length (um) [Center point trajectory]	23794.35	11736.97	26822.62	28227.75	32378.65	23988.81	15957.33	12211.07	7806.49
Center point Speed (um/s) [Center point trajectory/time]	397.05	195.85	447.58	471.02	540.29	465.16	521.97	348.18	481.46
Absolute Peristaltic Track Length (um) [forward + reversals]	14875.82	5508.27	17183.21	15938.67	21243.16	17197.74	10625.01	7215.72	5305.72
Peristaltic Speed (um/s) [Absolute peristaltic track length/time]	248.23	91.91	286.73	265.96	354.47	333.47	347.55	205.74	327.23
Peristaltic Track Length (um) [forward - reversals]	6257.98	-3624.59	-13734.06	-15767.12	-21048.29	-13297.44	-7427.13	3110.29	-5267.94
Peristaltic Speed (um/s) [peristaltic track length/time]	104.42	-60.48	-229.17	-263.10	-351.22	-257.85	-242.94	88.68	-324.90
Straight-line Distance (um)	2687.76	80.24	1822.21	2160.97	1346.03	6120.54	1371.07	1455.47	1116.95
Wavelength (um)	388.19	404.05	429.81	422.49	449.54	494.14	532.99	403.69	465.05
Mean Amplitude (um)	65.38	48.61	66.61	71.57	70.03	61.67	83.92	63.14	71.47
Max Amplitude (um)	131.10	117.79	153.45	132.01	131.96	140.60	182.18	162.88	129.18
Turn Count	183.00	69.00	207.00	196.00	183.00	154.00	90.00	78.00	60.00
Turn duration (s)	59.93	59.93	59.93	59.93	59.93	51.57	30.57	35.07	16.21
Distance Traveled Forward(um)	10566.90	941.84	1724.58	85.77	97.44	1950.15	1998.94	5163.01	18.89
Distance Traveled in Reverse(um)	4308.92	4566.43	15458.64	15852.89	21145.73	15247.59	9026.07	2052.72	5286.83
Number of Reversals	7.00	17.00	2.00	1.00	1.00	3.00	1.00	5.00	1.00
Cumulative Reversal Time (s)	24.07	45.00	46.50	60.00	60.00	48.00	20.50	11.57	16.21
Cumulative Forward Time (s)	35.93	15.00	13.50	0.00	0.00	3.64	10.14	23.57	0.07
Number of Pirouette	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
Pirouette Time (s)	0.86	0.00	0.00	0.00	0.00	0.00	0.00	1.57	0.00
Mobility reversal time (s)	25.50	47.29	46.21	60.00	60.00	47.93	20.93	13.07	16.29
Mobility idle time (s)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobility forward time (s)	34.50	12.71	13.79	0.00	0.00	3.71	9.71	22.07	0.00

Copy Selected Data Export...

Export Data (all tracks)

D

The screenshot displays the WormLab software interface. The main window is titled 'Data Analysis and Plotting' and shows a table of metrics for track number 89. An 'Export Data' dialog box is open, allowing the user to specify the file name and location for the exported data. A callout box with a black border and white background points to the 'Choose...' button in the dialog, containing the text 'Check location and dataset name, export'.

Track Number	84	85	86	87	88	89
Mean Worm Length (um)	77.16	751.47	741.08	557.65	691.05	657.40
Mean Width (um)	0.30	59.10	61.45	59.33	62.66	58.79
Mean Area (um^2)	7670.16	45166.27	46365.22	33656.74	44049.09	39310.60
Track Length (um) [Center point trajectory]	906.12	3125.10	5159.47	485.75	2739.22	1931.68
Center point Speed (um/s) [Center point trajectory/time]	67.78	514.72	472.11	2266.85	314.34	443.34
Absolute Peristaltic Speed (um/s)	33.22	3475.31	484.35	1561.29	1240.59	
Peristaltic Speed (um/s)	7.71	318.00	2260.28	179.16	284.73	
Peristaltic Trajectory (um)	99.04	-3475.31	-484.35	-1365.62	-1240.59	
Peristaltic Speed (um/s)	6.31	-318.00	-2260.28	-156.71	-284.73	
Straight-line Distance (um)	37.06	1587.77	476.93	421.70	900.12	
Wavelength (um)	35.00	462.76	225.32	411.94	394.35	
Mean Amplitude (um)	63	74.46	31.83	65.39	49.98	
Max Amplitude (um)	9.26	140.97	132.36	57.99	117.87	95.70
Turn Count	4.00	19.00	39.00	1.00	16.00	15.00
Track duration (s)	.36					
Distance Traveled Forward(um)	660.93					
Distance Traveled in Reverse(um)	.00					
Number of Reversals	.00	1.00	1.00	0.00	1.00	1.00
Cumulative Reversal Time (s)	.00	4.57	11.00	0.00	7.71	4.43
Cumulative Forward Time (s)	.43	1.57	0.00	0.29	1.07	0.00
Number of Pirouette	.00	0.00	0.00	0.00	0.00	0.00
Pirouette Time (s)	.00	0.00	0.00	0.00	0.00	0.00

E

Worm Data		B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1	Worm Data	Track Summary																					
2	Sequence	20200316_Rep_N2_0001.avi																					
3																							
4		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
5	Mean Worm Length (um)	674.26	686.52	732.8	720.4	718.74	788.12	862.28	722.57	743.37	703.52	716.65	664.35	627.96	679.29	781.25	641.31	686.53	753.79	765.03	644.05	731.55	789.04
6	Mean Width (um)	58.21	61.04	61.53	59.1	61.42	60.78	70.28	73.29	60.9	64.31	59.97	58.42	55.76	65.7	64	61.01	59.89	58.56	62.05	62.74	60.46	65
7	Mean Area (um^2)	39924.05	42604.36	45874.72	43307.35	44904.44	48731.65	61642.91	54192.86	46048.25	45902.93	43715.97	39474.1	35630.87	45201.95	50858.77	39645.85	41818.33	44901.64	48286.08	41056.7	44965.99	52171.41
8	Track Length (um) [Center point trajectory]	23794.35	11736.97	26822.62	28227.75	32378.65	29888.81	15957.33	12211.07	7806.49	26370.85	29161.31	9494.03	11274.16	27159.58	29200.59	12764.09	5027.64	1158.44	22862.38	4290.85	20636.43	20624.62
9	Center point Speed (um/s) [Center point trajectory/time]	397.05	195.85	447.58	471.02	540.29	465.16	521.97	348.18	481.46	440.04	486.6	406.47	482.69	453.2	487.26	412.7	502.76	523.17	540.66	349.26	488.02	449.76
10	Absolute Peristaltic Track Length (um) [forward + reversals]	14875.82	5508.27	17183.21	15938.67	21243.16	17197.74	10625.01	7215.72	5305.72	17114.4	18793.41	6043.12	7578.37	17615.92	17503.27	8893.55	3118.43	770.73	15592.45	2338.46	13501.54	13008.22
11	Peristaltic Speed (um/s) [Absolute peristaltic track length/time]	248.23	91.91	286.73	265.96	354.47	333.47	347.55	205.74	327.23	285.58	313.6	258.73	324.46	293.95	292.07	287.55	311.84	348.07	368.74	190.34	319.29	283.67
12	Peristaltic Track Length (um) [forward - reversals]	6257.98	-3624.59	-13734.1	-15767.1	-21048.3	-13297.4	-7427.13	3110.29	-5267.94	7920.92	-11933.1	5882.6	-4039.66	8360.17	-8749.2	8089.91	1117.3	-766.9	-12441.3	1816.84	-7043.99	-6448.61
13	Peristaltic Speed (um/s) [peristaltic track length/time]	104.42	-60.48	-229.17	-263.1	-351.22	-257.85	-242.94	88.68	-324.9	132.17	-199.12	251.85	-172.95	139.5	-145.99	261.57	111.73	-346.34	-294.22	147.88	-166.58	-140.62
14	Straight-line Distance (um)	2687.76	80.24	1822.21	2160.97	1346.03	6120.54	1371.07	1455.47	1116.95	419.03	4530.41	1208.91	217.43	2064.61	3224.21	647.04	487.33	549.42	836.19	488.29	1712.89	1175.84
15	Wavelength (um)	388.19	404.05	429.81	422.49	449.54	494.14	532.99	403.69	465.05	399.77	434.94	411.48	361.89	386.15	479.97	376.61	378.01	514.33	476.36	316.62	460.29	492.08
16	Mean Amplitude (um)	65.38	48.61	66.61	71.57	70.03	61.67	83.92	63.14	71.47	73.87	68.13	61.3	62.68	60.38	68.34	43.43	65.78	67.85	74.86	60.9	68.82	72.55
17	Max Amplitude (um)	131.1	117.79	153.45	132.01	131.96	140.6	182.18	162.88	129.18	180.05	150.18	118.8	124.33	144.95	147.3	133.98	125.65	119.88	144.97	122.24	156.54	151.49
18	Turn Count	183	69	207	196	183	154	90	78	60	158	209	74	82	184	205	102	28	9	135	24	145	157
19	Track duration (s)	59.93	59.93	59.93	59.93	59.93	51.57	30.57	35.07	16.21	59.93	59.93	23.36	23.36	59.93	59.93	30.93	10	2.21	42.29	12.29	42.29	45.86
20	Distance Traveled Forward(um)	10566.9	941.84	1724.58	85.77	97.44	1950.15	1598.94	5163.01	18.89	12517.66	3430.14	5962.86	1769.36	12988.04	4377.03	8491.73	2117.87	1.92	1575.56	2077.65	3228.78	3279.81
21	Distance Traveled in Reverse(um)	4308.92	4566.43	15458.64	15852.89	21145.73	15247.59	9026.07	2052.72	5286.83	4596.74	15363.27	80.26	5809.01	4627.87	13126.23	401.82	1000.56	768.81	14016.89	260.81	10272.77	9728.42
22	Number of Reversals	7	17	2	1	1	3	1	5	1	4	4	0	1	5	2	0	1	1	2	0	3	3
23	Cumulative Reversal Time (s)	24.07	45	46.5	60	60	48	20.5	11.57	16.21	18.07	41.93	0	13.14	17.86	29.79	0	4.21	2.29	37.5	0	24.93	31.64
24	Cumulative Forward Time (s)	35.93	15	13.5	0	0	3.64	10.14	23.57	0.07	41.93	18.07	23.43	10.29	42.14	30.21	31	5.86	0	4.86	12.36	17.43	14.29
25	Number of Pirouette	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Pirouette Time (s)	0.86	0	0	0	0	0	0	1.57	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Mobility reversal time (s)	25.5	47.29	46.21	60	60	47.93	20.93	13.07	16.29	19.07	42.07	0.79	13.21	18.21	29.5	2.21	4.29	2.29	37.36	0.43	25.14	32.14
28	Mobility idle time (s)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	Mobility forward time (s)	34.5	12.71	13.79	0	0	3.71	9.71	22.07	0	40.93	17.93	22.64	10.21	41.79	30.5	28.79	5.79	0	5	11.93	17.21	13.79
30																							
31																							
32																							
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37																							
38																							
39																							

F

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1 Worm Data	Track Summary															
2 Sequence	20200316_Rep_N2_0001.avi															
3																
4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
5 Mean Worm Length (um)	674.26	686.52	732.8	720.4	718.74	788.12	862.28	722.57	743.37	703.52	716.65	664.35	627.96	679.29	781.25	641.31
6 Mean Width (um)	58.21	61.04	61.53	59.1	61.42	60.78	70.28	73.29	60.9	64.31	59.97	58.42	55.76	65.7	64	61.01
7 Mean Area (um^2)	39924.05	42604.36	45874.72	43307.35	44904.44	48731.65	61642.91	54192.86	46048.25	45902.93	43715.97	39474.1	35630.87	45201.95	50858.77	39645.85
8 Track Length (um) [Center point trajectory]	23794.35	11736.97	26822.62	28227.75	32378.65	23988.81	15957.33	12211.07	7806.49	26370.85	29161.31	9494.03	11274.16	27159.58	29200.59	12764.09
9 Center point Speed (um/s) [Center point trajectory/time]	397.05	195.85	447.58	471.02	540.29	465.16	521.97	348.18	481.46	440.04	486.6	406.47	482.69	453.2	487.26	412.7
10 Absolute Peristaltic Track Length (um) [forward + reversals]	14875.82	5508.27	17183.21	15938.67	21243.16	17197.74	10625.01	7215.72	5305.72	17114.4	18793.41	6043.12	7578.37	17615.92	17503.27	8893.55
11 Peristaltic Speed (um/s) [Absolute peristaltic track length/time]	248.23	91.91	286.73	265.96	354.47	333.47	347.55	205.74	327.23	285.58	313.6	258.73	324.46	293.95	292.07	287.55
12 Peristaltic Track Length (um) [forward - reversals]	6257.98	-3624.59	-13734.1	-15767.1	-21048.3	-13297.4	-7427.13	3110.29	-5267.94	7920.92	-11933.1	5882.6	-4039.66	8360.17	-8749.2	8089.91
13 Peristaltic Speed (um/s) [peristaltic track length/time]	104.42	-60.48	-229.17	-263.1	-351.22	-257.85	-242.94	88.68	-324.9	132.17	-199.12	251.85	-172.95	139.5	-145.99	261.57
14 Straight-line Distance (um)	2687.76	80.24	1822.21	2160.97	1346.03	6120.54	1371.07	1455.47	1116.95	419.03	4530.41	1208.91	217.43	2064.61	3224.21	647.04
15 Wavelength (um)	388.19	404.05	429.81	422.49	449.54	494.14	532.99	403.69	465.05	399.77	434.94	411.48	361.89	386.15	479.97	376.61
16 Mean Amplitude (um)	65.38	48.61	66.61	71.57	70.03	61.67	83.92	63.14	71.47	73.87	68.13	61.3	62.68	60.38	68.34	43.43
17 Max Amplitude (um)	131.1	117.79	153.45	132.01	131.96	140.6	182.18	162.88	129.18	180.05	150.18	118.8	124.33	144.95	147.3	133.98
18 Turn Count	183	69	207	196	183	154	90	78	60	158	209	74	82	184	205	102
19 Track duration (s)	59.93	59.93	59.93	59.93	59.93	51.57	30.57	35.07	16.21	59.93	59.93	23.36	23.36	59.93	59.93	30.93
20 Distance Traveled Forward(um)	10566.9	941.84	1724.58	85.77	97.44	1950.15	1598.94	5163.01	18.89	12517.66	3430.14	5962.86	1769.36	12988.04	4377.03	8491.73
21 Distance Traveled in Reverse(um)	4308.92	4566.43	15458.64	15852.89	21145.73	15247.59	9026.07	2052.72	5286.83	4596.74	15363.27	80.26	5809.01	4627.87	13126.23	401.82
22 Number of Reversals	7	17	2	1	1	3	1	5	1	4	4	0	1	5	2	0
23 Cumulative Reversal Time (s)	24.07	45	46.5	60	60	48	20.5	11.57	16.21	18.07	41.93	0	13.14	17.86	29.79	0
24 Cumulative Forward Time (s)	35.93	15	13.5	0	0	3.64	10.14	23.57	0.07	41.93	18.07	23.43	10.29	42.14	30.21	31
25 Number of Pirouette	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
26 Pirouette Time (s)	0.86	0	0	0	0	0	0	1.57	0	0	0	0	0	0	0	0
27 Mobility reversal time (s)	25.5	47.29	46.21	60	60	47.93	20.93	13.07	16.29	19.07	42.07	0.79	13.21	18.21	29.5	2.21
28 Mobility idle time (s)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29 Mobility forward time (s)	34.5	12.71	13.79	0	0	3.71	9.71	22.07	0	40.93	17.93	22.64	10.21	41.79	30.5	28.79
30																
31 Track #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
32 Turn Count	183	69	207	196	183	154	90	78	60	158	209	74	82	184	205	102
33 Track duration (s)	59.93	59.93	59.93	59.93	59.93	51.57	30.57	35.07	16.21	59.93	59.93	23.36	23.36	59.93	59.93	30.93
34 Turns Per Minute	=(B32/B33)*60															
35																
36																
37																
38																
39																

Turn Count / Duration * 60