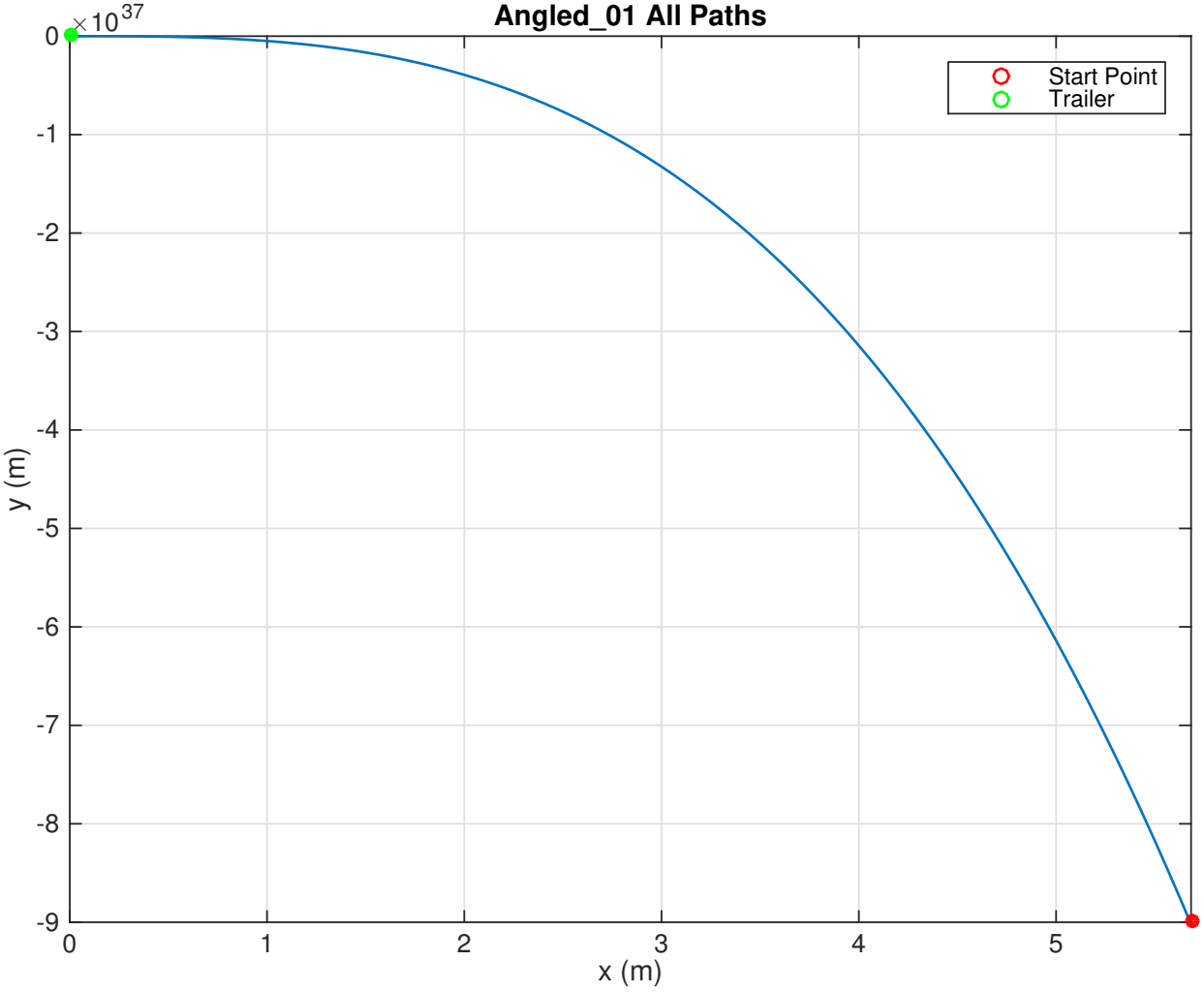
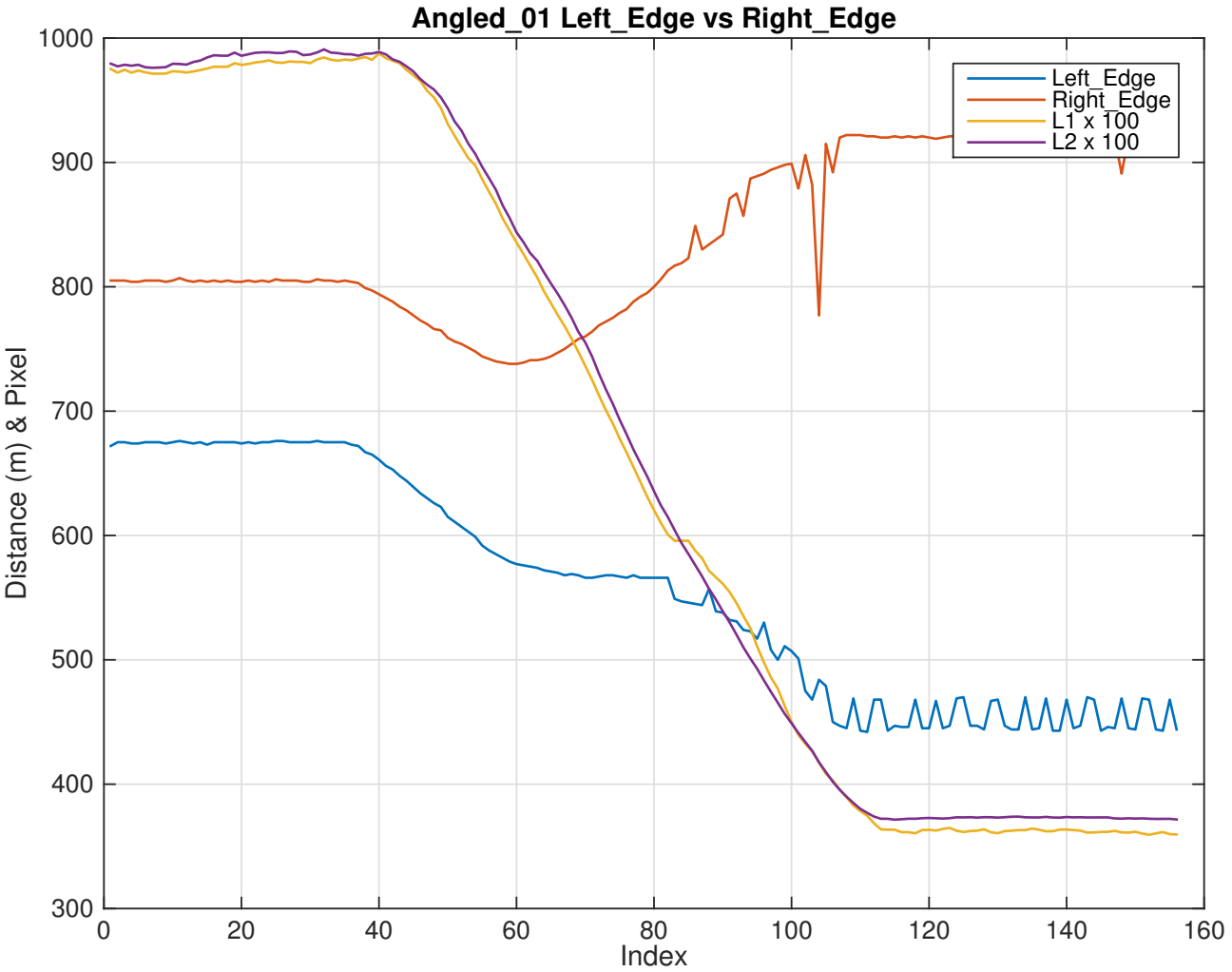
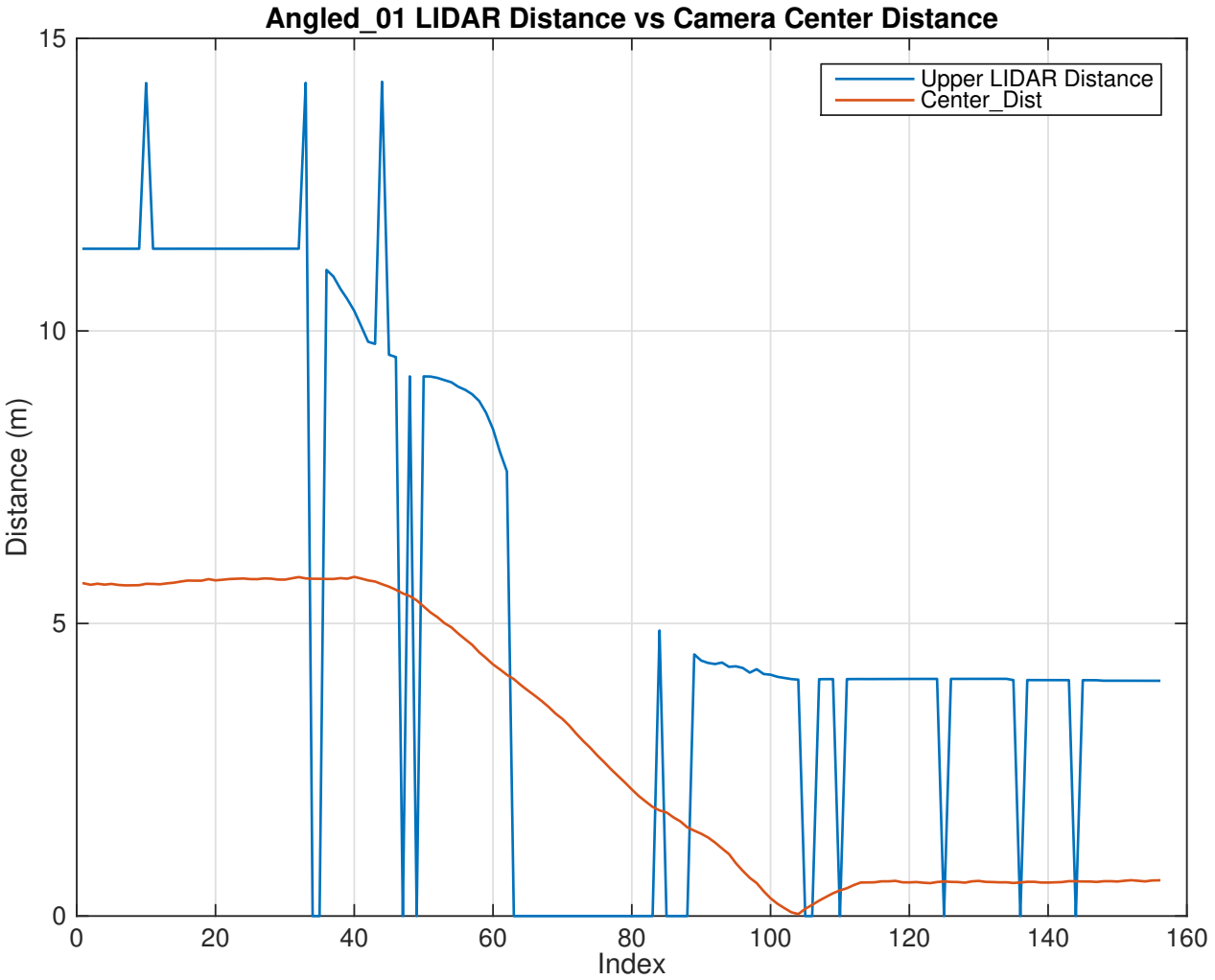
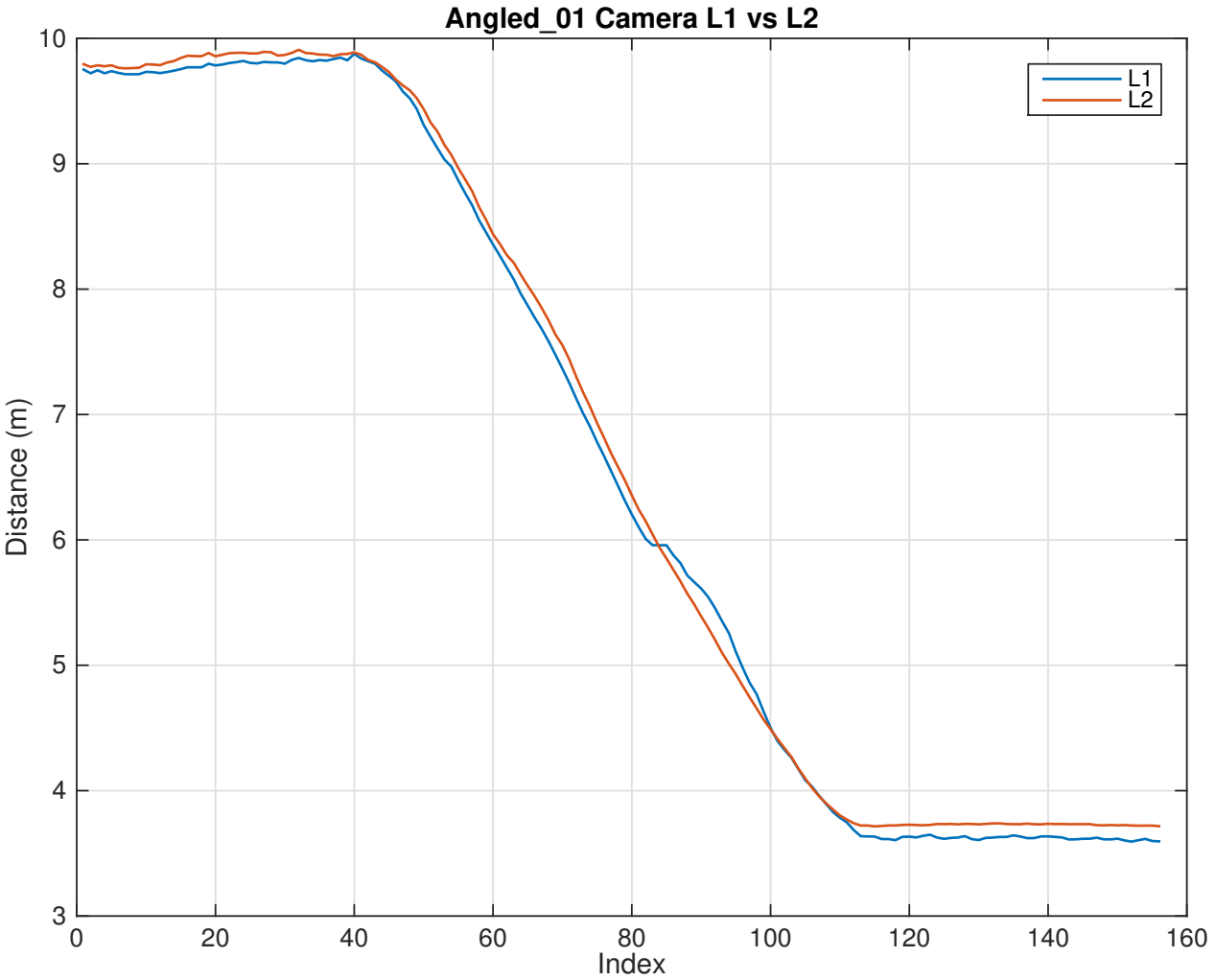
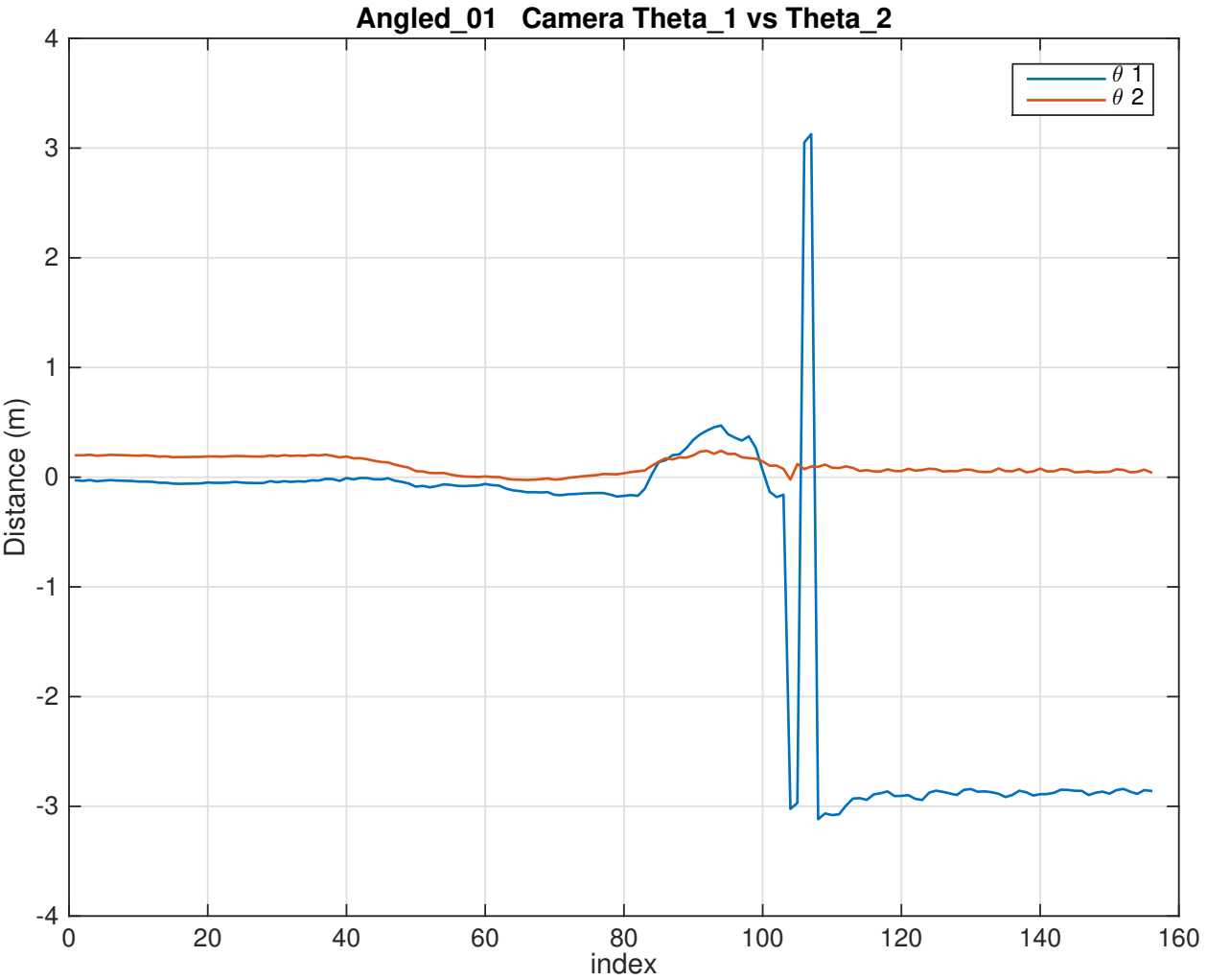

Angled_01 All Paths
×10^37
Start Point
Trailer
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
y (m)
0
1
2
3
4
5
x (m)

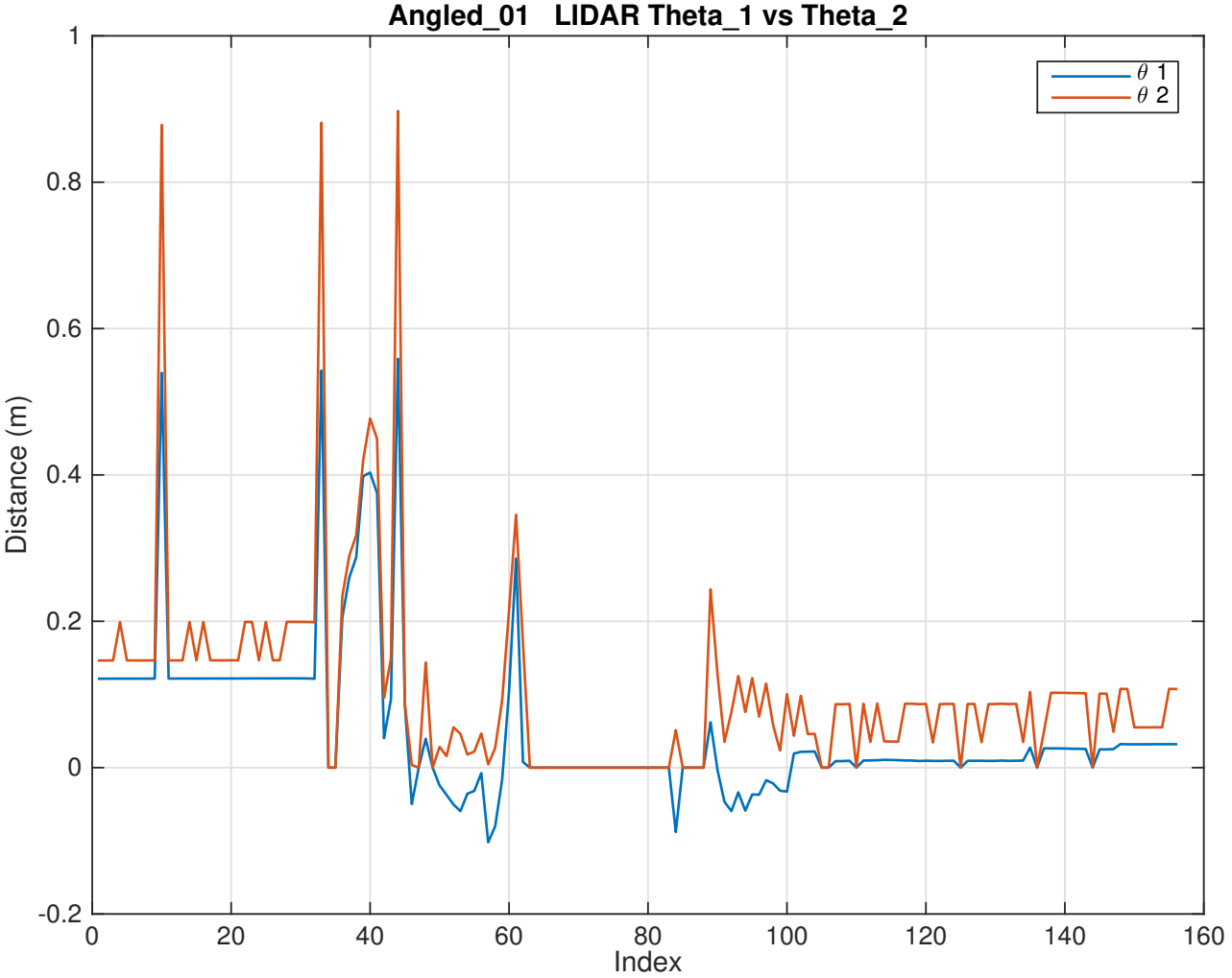
Number_Of_Unique_Paths	King_Pin_Detected
1	false

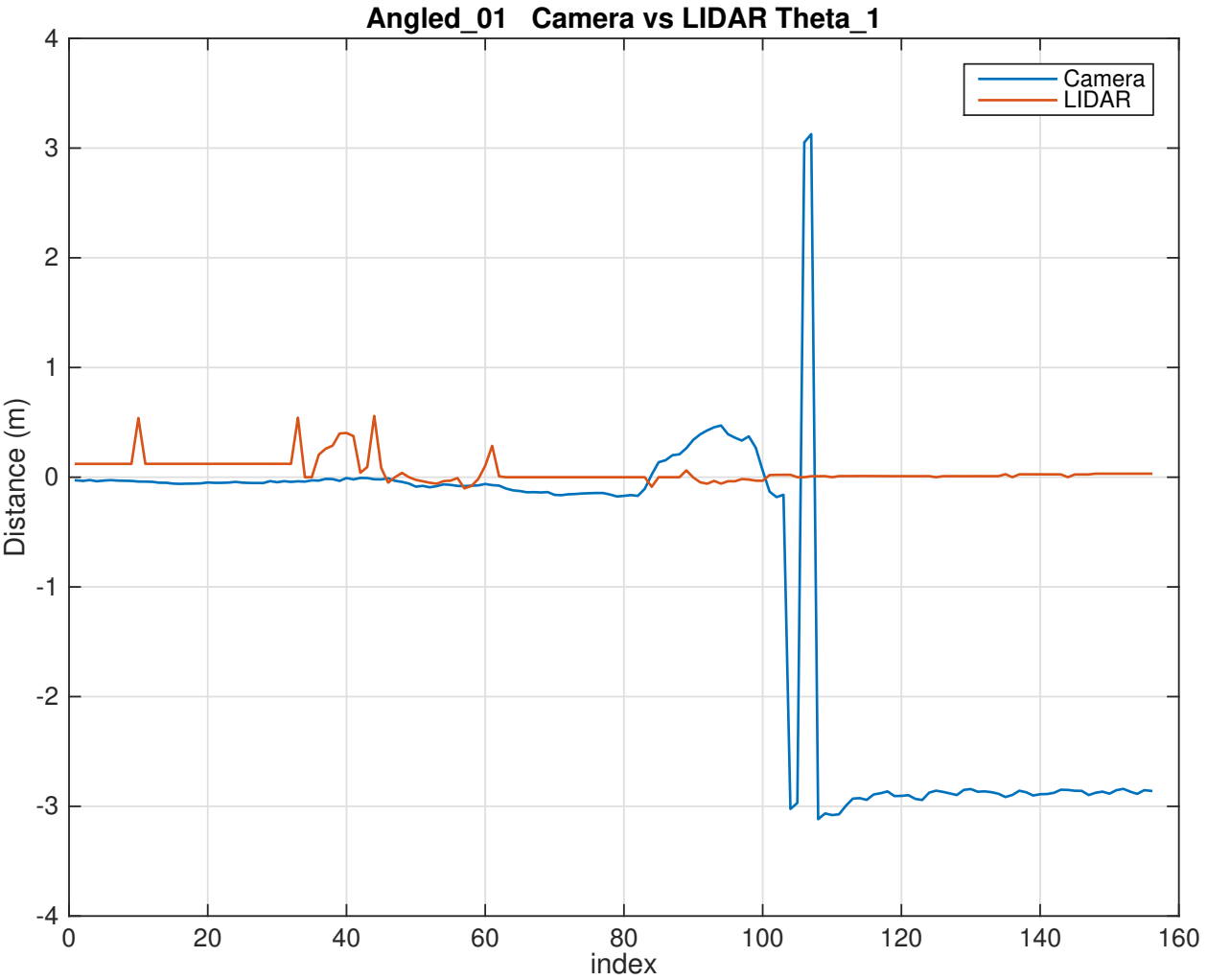

Angled_01 Left_Edge vs Right_Edge
Left_Edge
Right_Edge
L1 x 100
L2 x 100
Distance (m) & Pixel
Index
1000
900
800
700
600
500
400
300
0
20
40
60
80
100
120
140
160

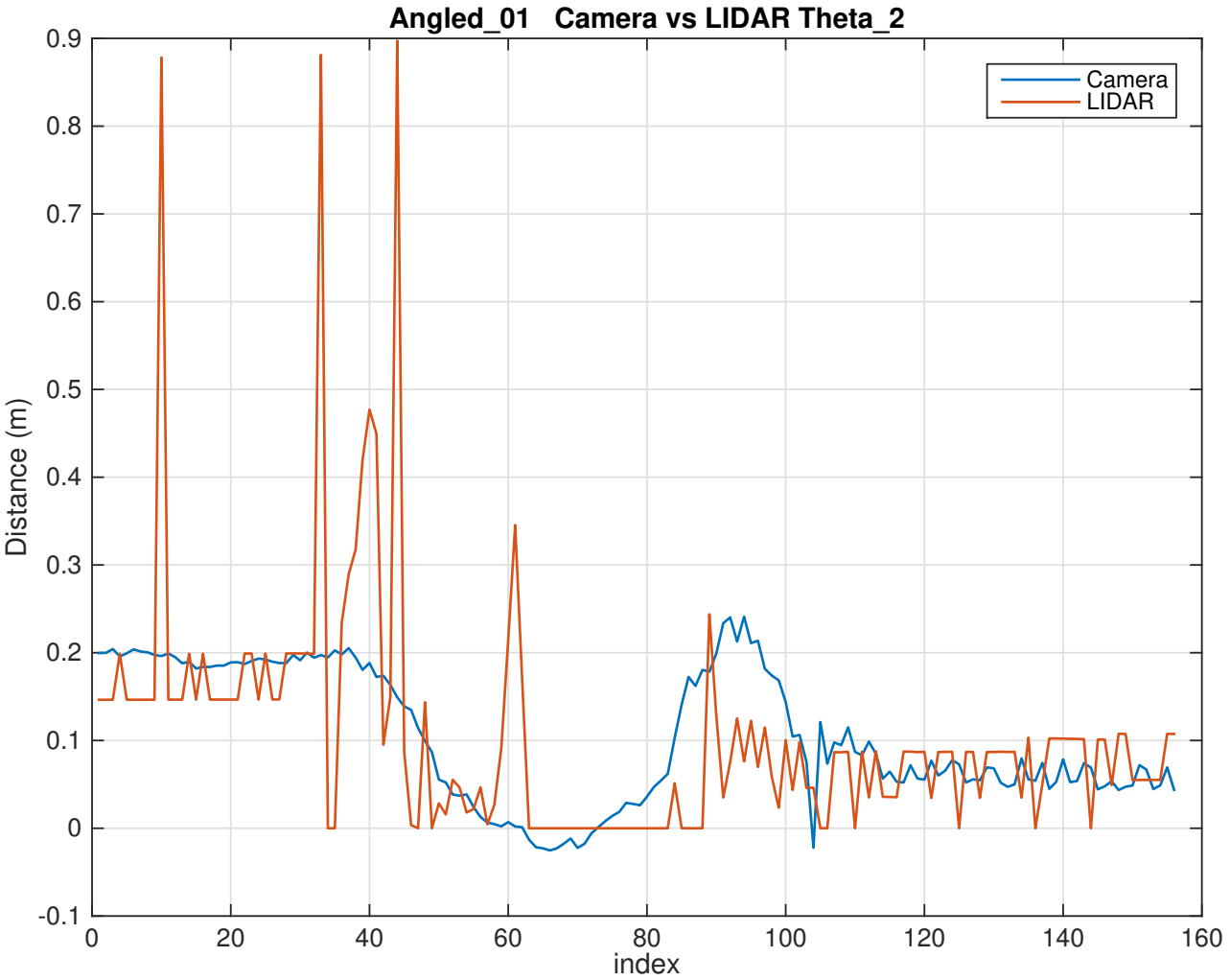

Angled_01 LIDAR Distance vs Camera Center Distance
Upper LIDAR Distance
Center_Dist
Distance (m)
Index
0
5
10
15
0
20
40
60
80
100
120
140
160

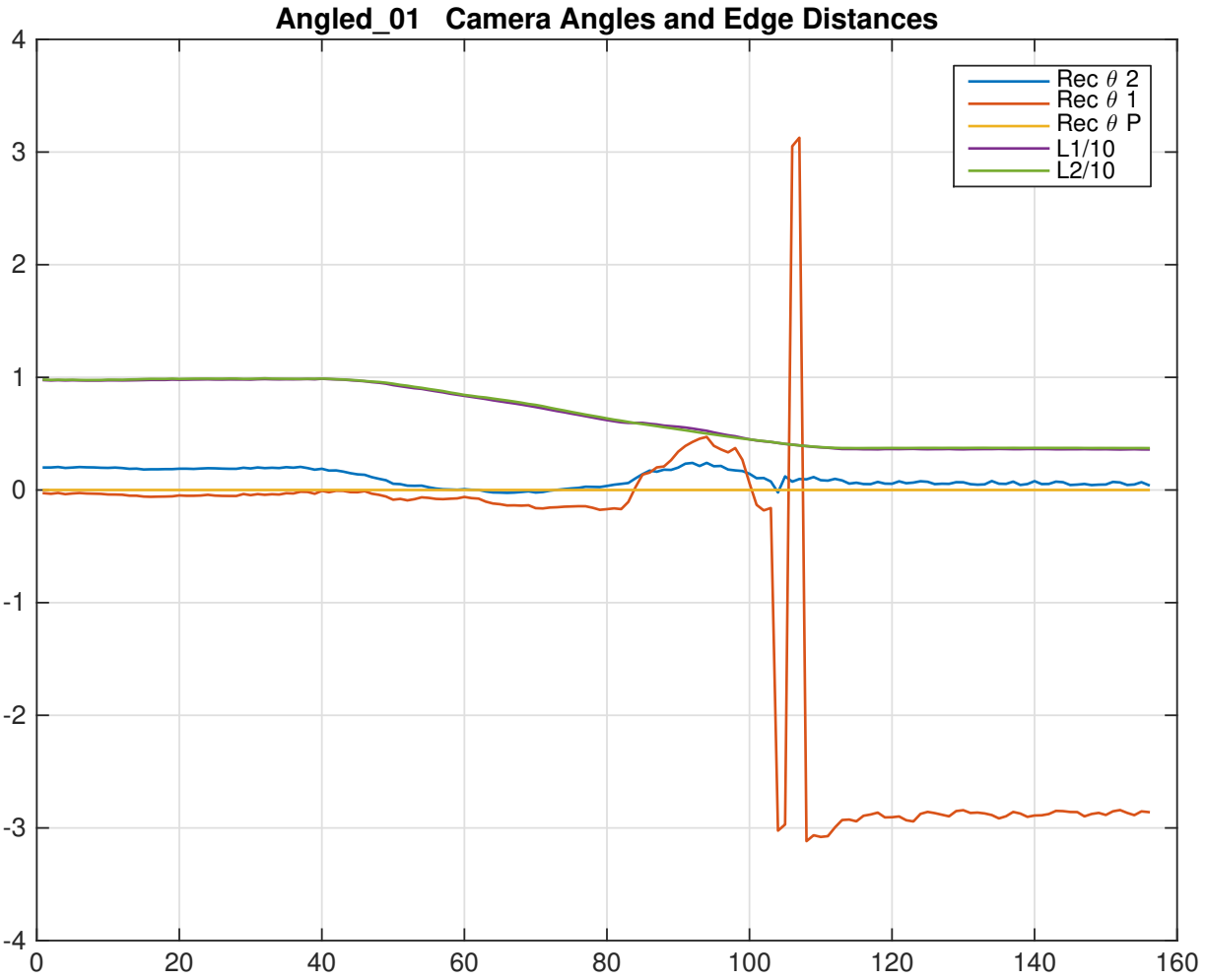

Angled_01 Camera L1 vs L2
L1
L2
Distance (m)
Index
10
9
8
7
6
5
4
3
0
20
40
60
80
100
120
140
160

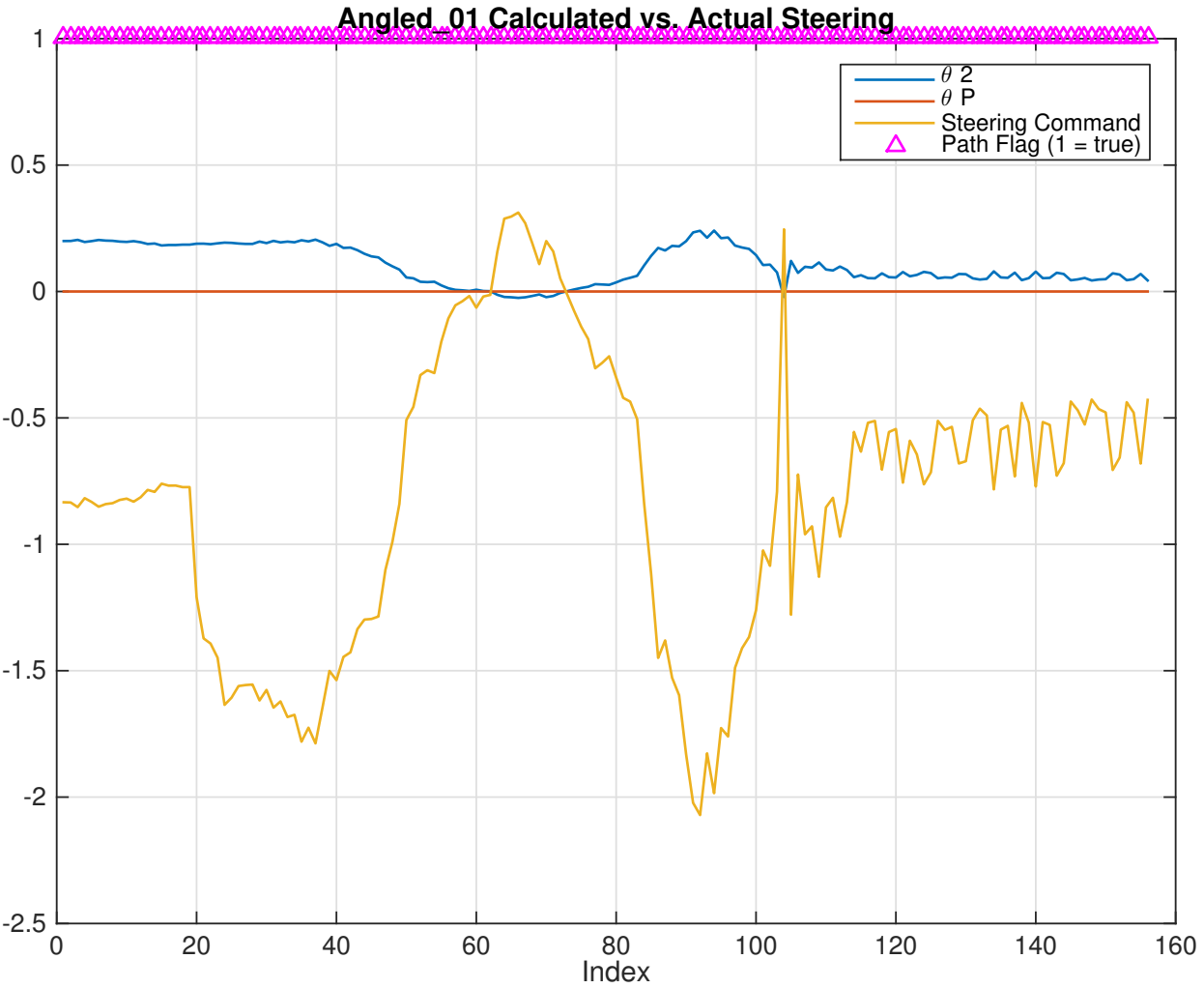

Angled_01 Camera Theta_1 vs Theta_2
θ 1
θ 2
Distance (m)
index
4
3
2
1
0
-1
-2
-3
-4
0
20
40
60
80
100
120
140
160

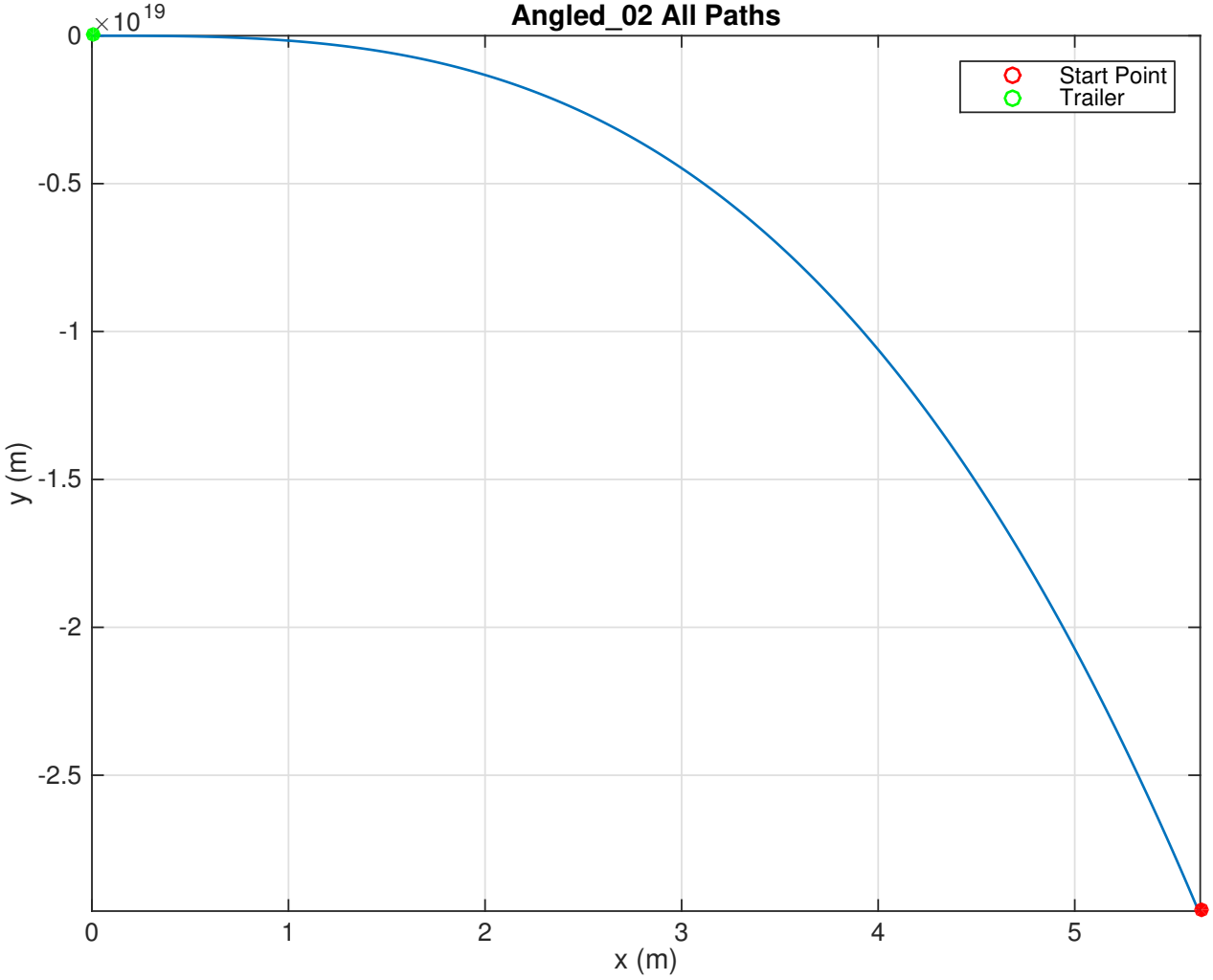

Angled_01 LIDAR Theta_1 vs Theta_2
θ 1
θ 2
Distance (m)
Index
1
0.8
0.6
0.4
0.2
0
-0.2
0
20
40
60
80
100
120
140
160


Angled_01 Camera vs LIDAR Theta_1
Camera
LIDAR
Distance (m)
index
4
3
2
1
0
-1
-2
-3
-4
0
20
40
60
80
100
120
140
160

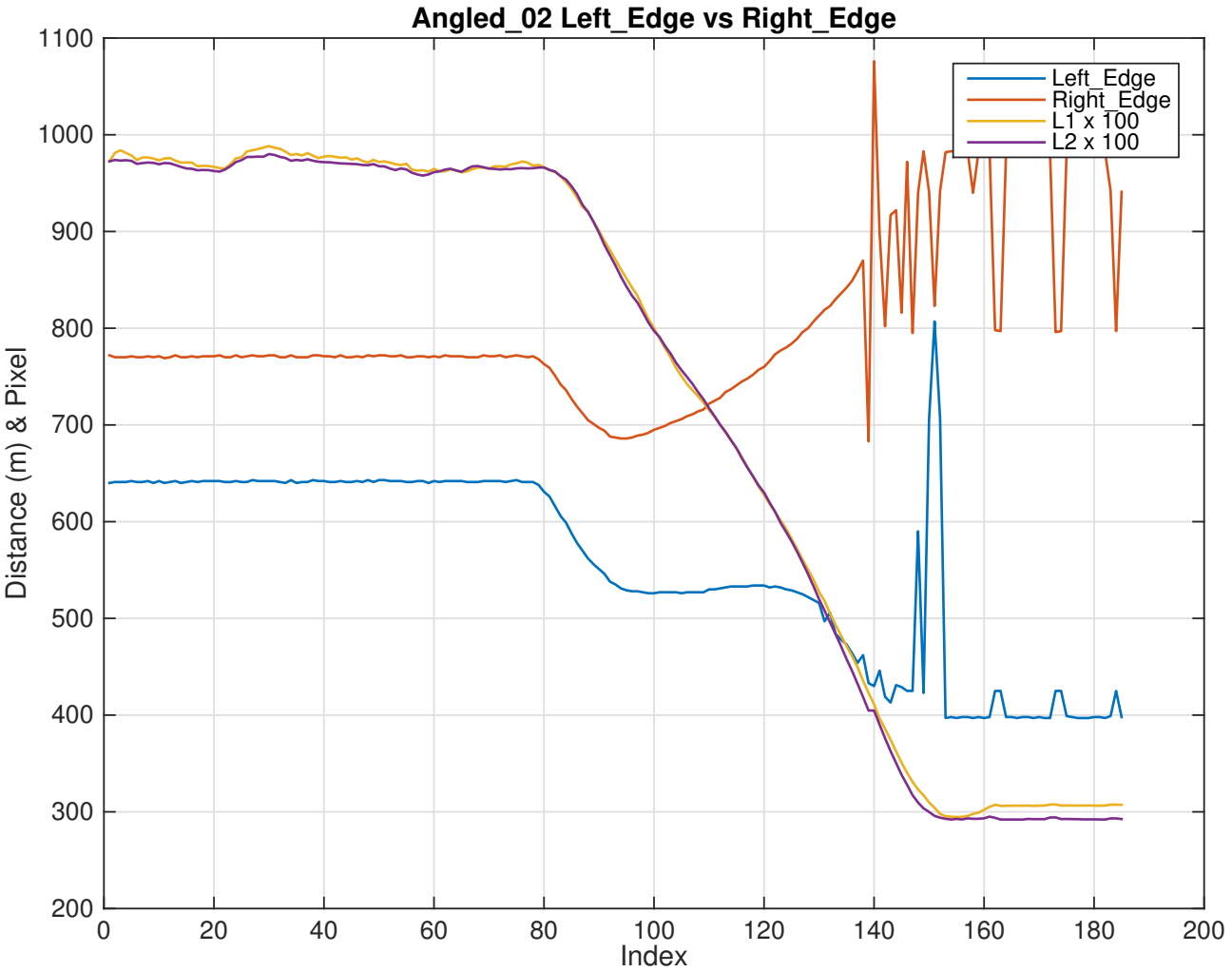

Angled_01 Camera vs LIDAR Theta_2
Camera
LIDAR
Distance (m)
index
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
0
20
40
60
80
100
120
140
160

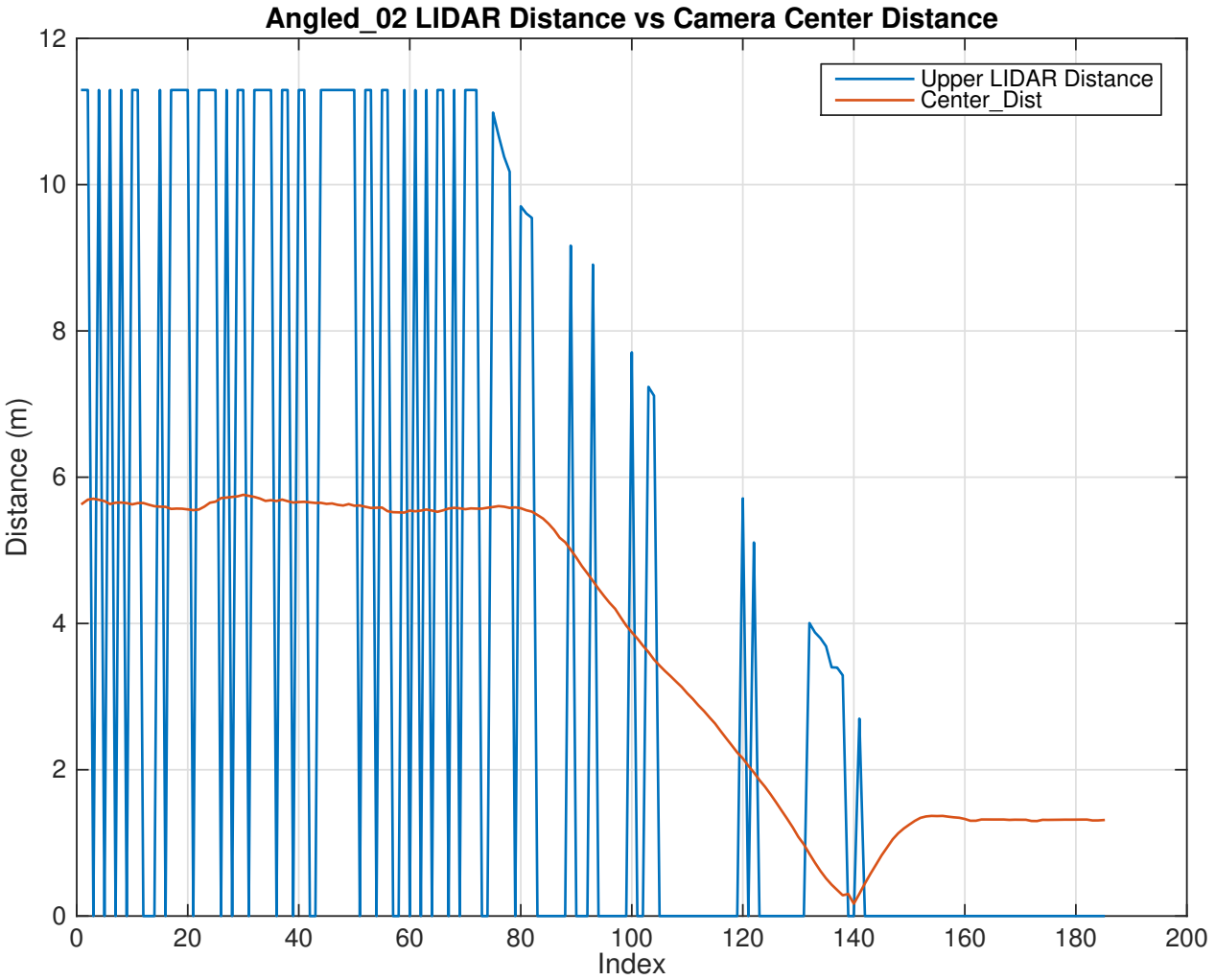

Angled_01 Camera Angles and Edge Distances
Rec θ 2
Rec θ 1
Rec θ P
L1/10
L2/10
4
3
2
1
0
-1
-2
-3
-4
0
20
40
60
80
100
120
140
160

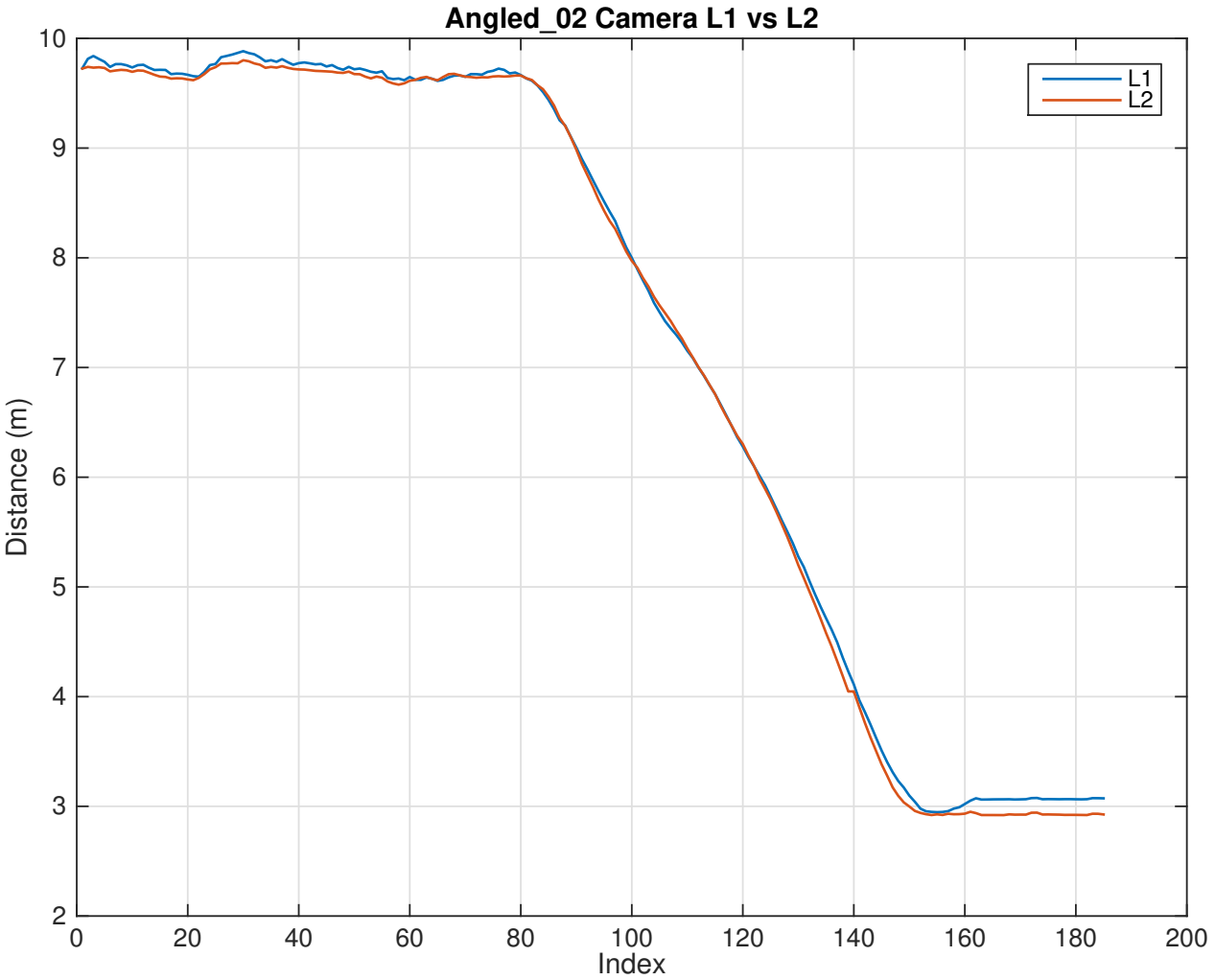

Angled_01 Calculated vs. Actual Steering
θ 2
θ P
Steering Command
Path Flag (1 = true)
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
0
20
40
60
80
100
120
140
160
Index

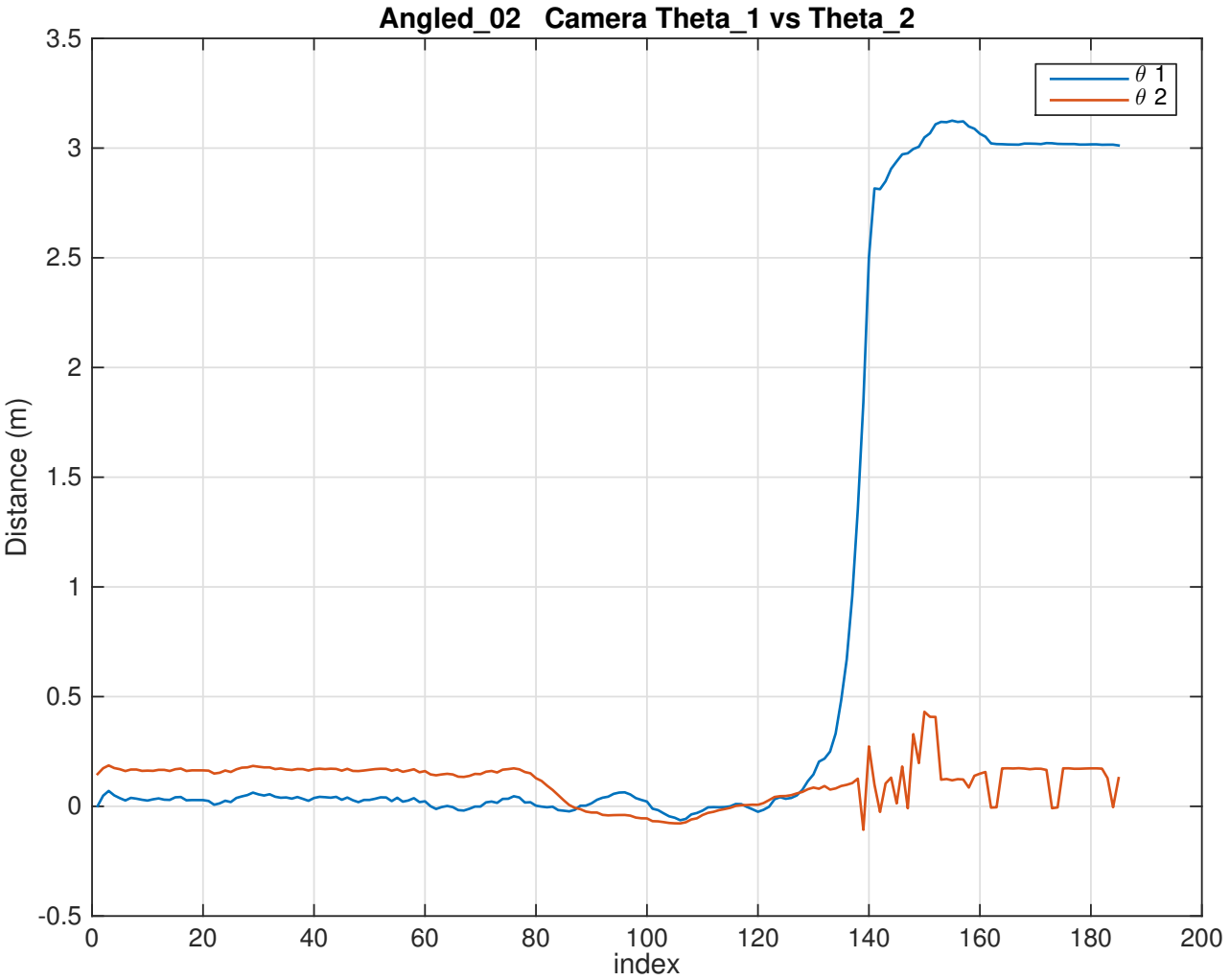

Angled_02 All Paths
×10^19
0
-0.5
-1
-1.5
-2
-2.5
y (m)
0
1
2
3
4
5
x (m)
Start Point
Trailer

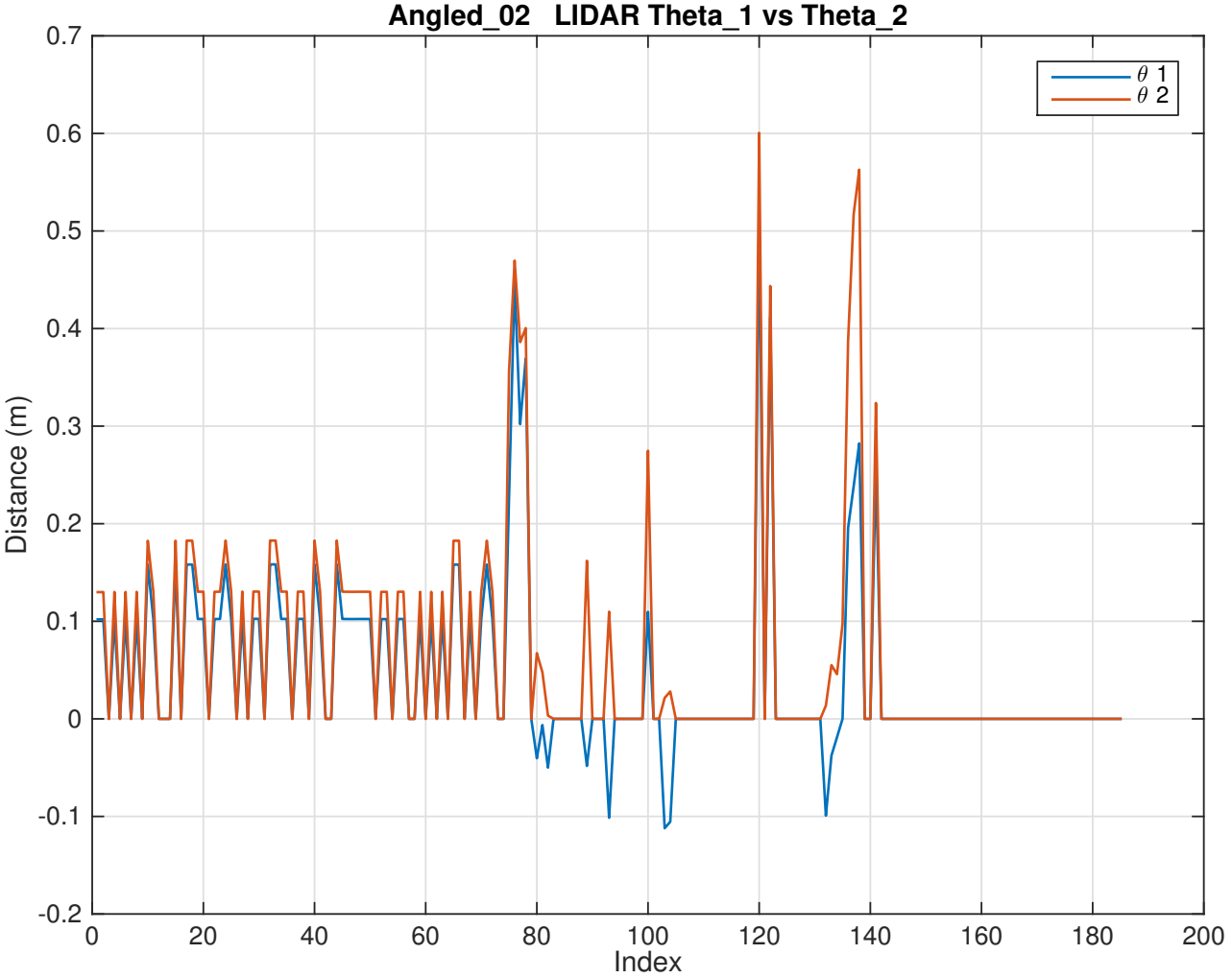
Number_Of_Unique_Paths	King_Pin_Detected
1	false

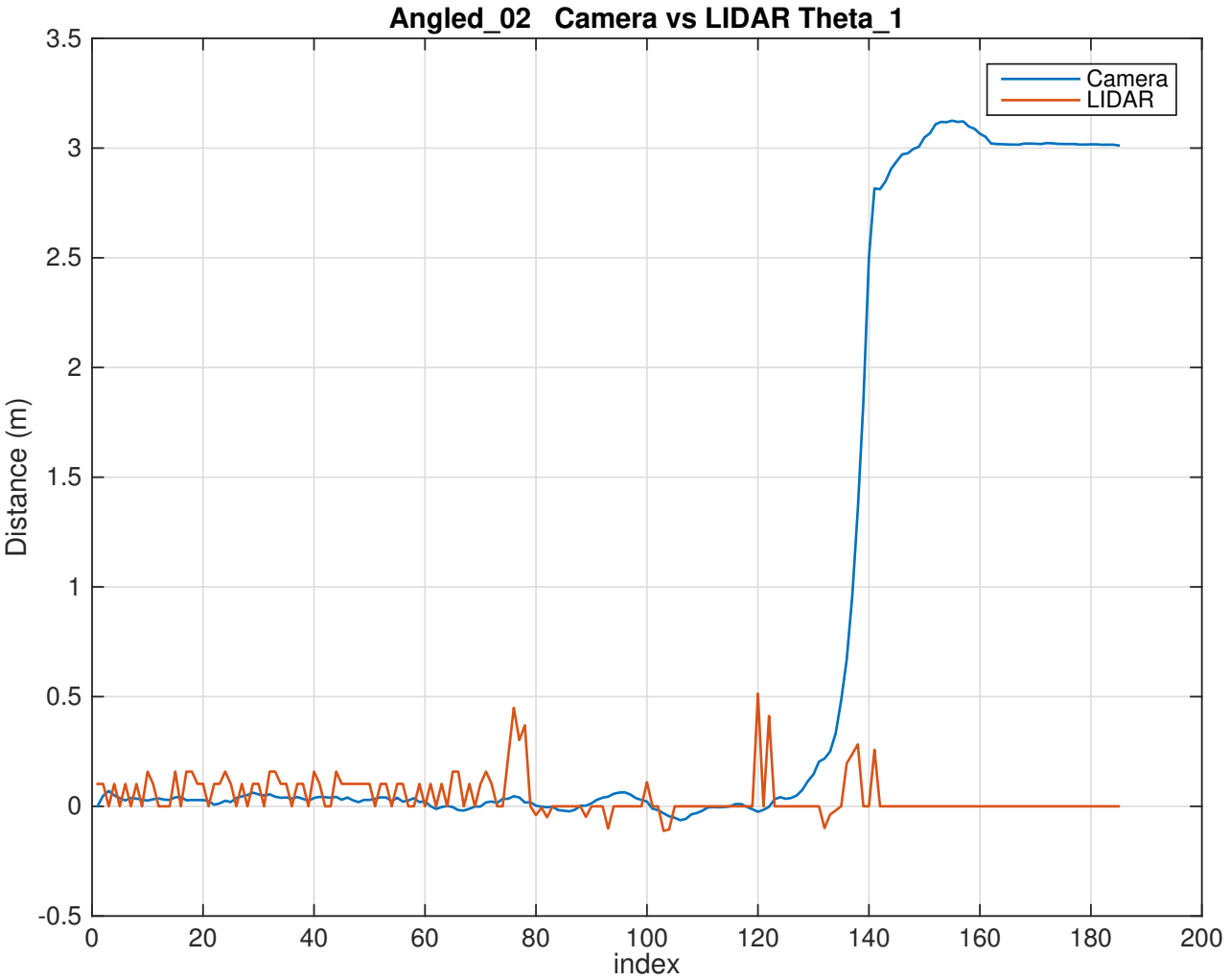

Angled_02 Left_Edge vs Right_Edge
Left_Edge
Right_Edge
L1 x 100
L2 x 100
Distance (m) & Pixel
Index
1100
1000
900
800
700
600
500
400
300
200
0
20
40
60
80
100
120
140
160
180
200

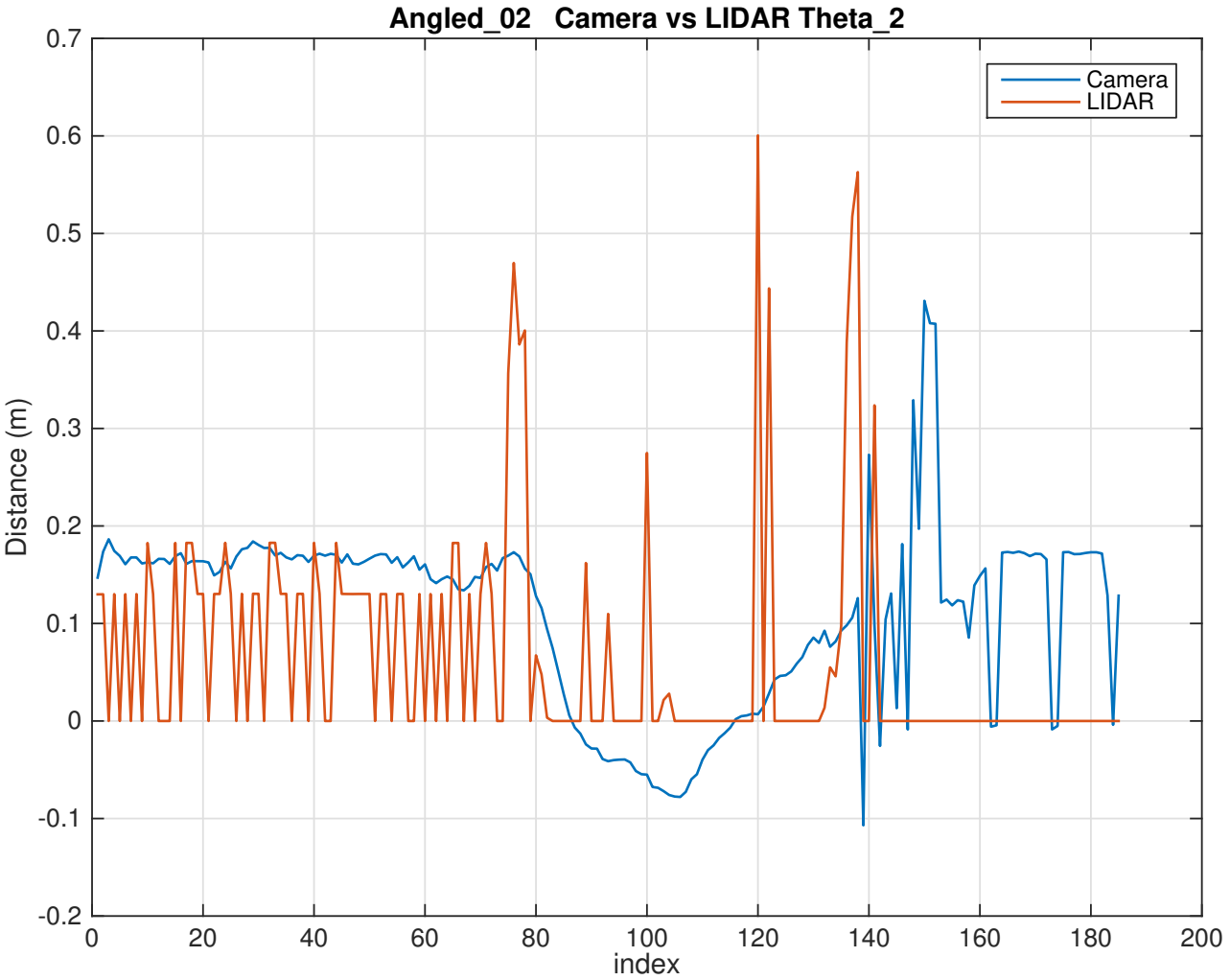

Angled_02 LIDAR Distance vs Camera Center Distance
Upper LIDAR Distance
Center_Dist
Distance (m)
Index
0
2
4
6
8
10
12
0
20
40
60
80
100
120
140
160
180
200

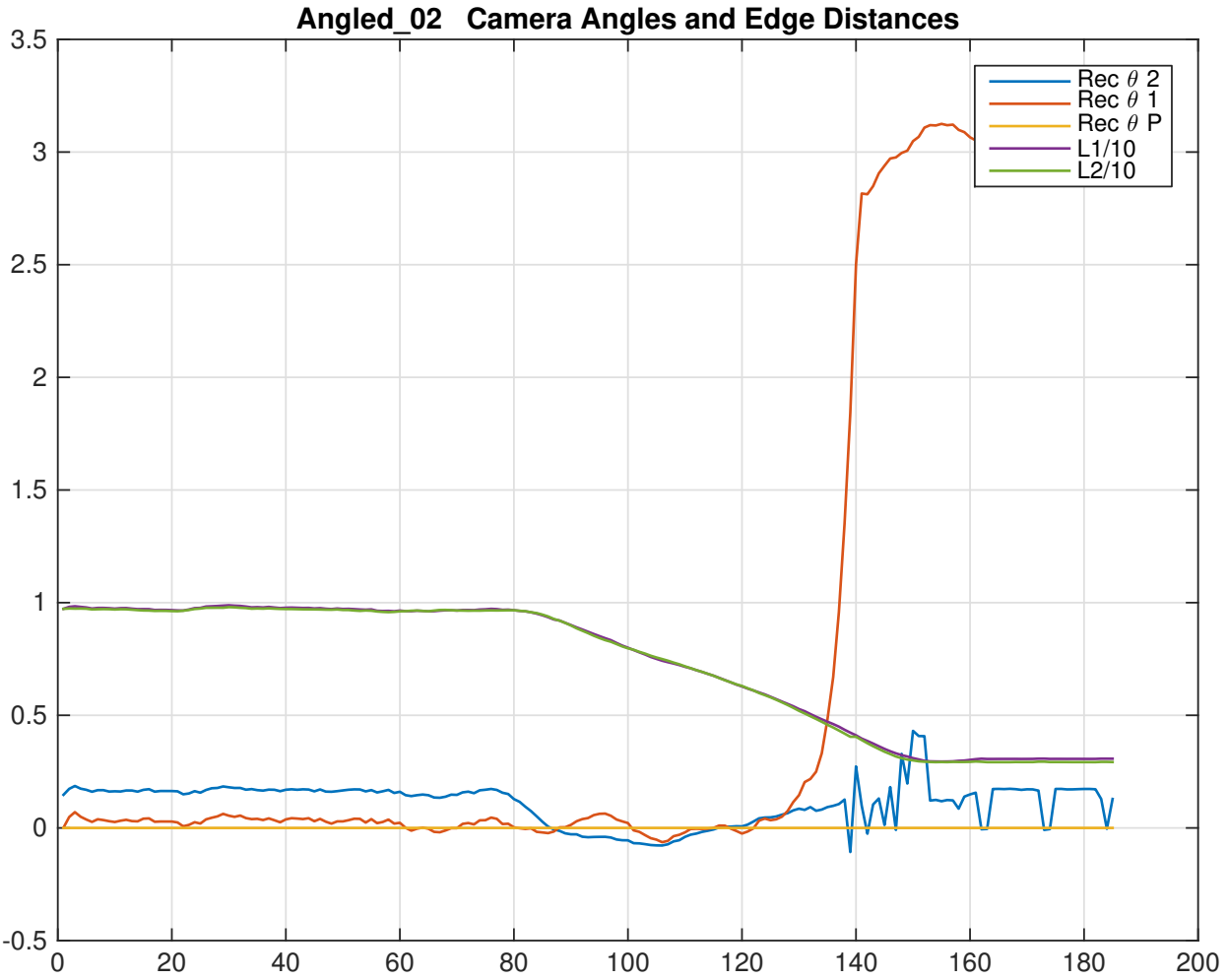

Angled_02 Camera L1 vs L2
L1
L2
Distance (m)
Index
10
9
8
7
6
5
4
3
2
0
20
40
60
80
100
120
140
160
180
200

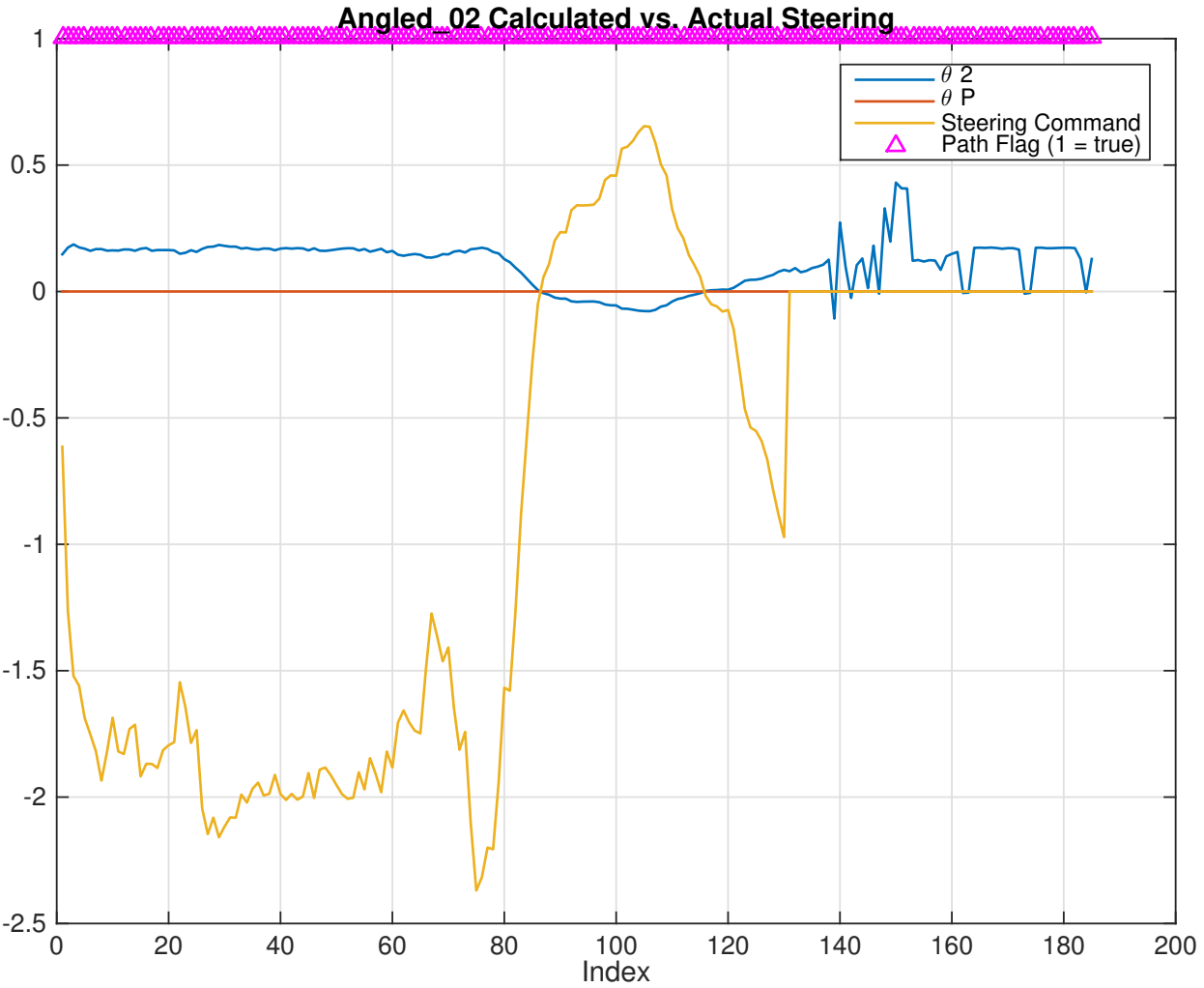

Angled_02 Camera Theta_1 vs Theta_2
θ 1
θ 2
Distance (m)
index
3.5
3
2.5
2
1.5
1
0.5
0
-0.5
0
20
40
60
80
100
120
140
160
180
200

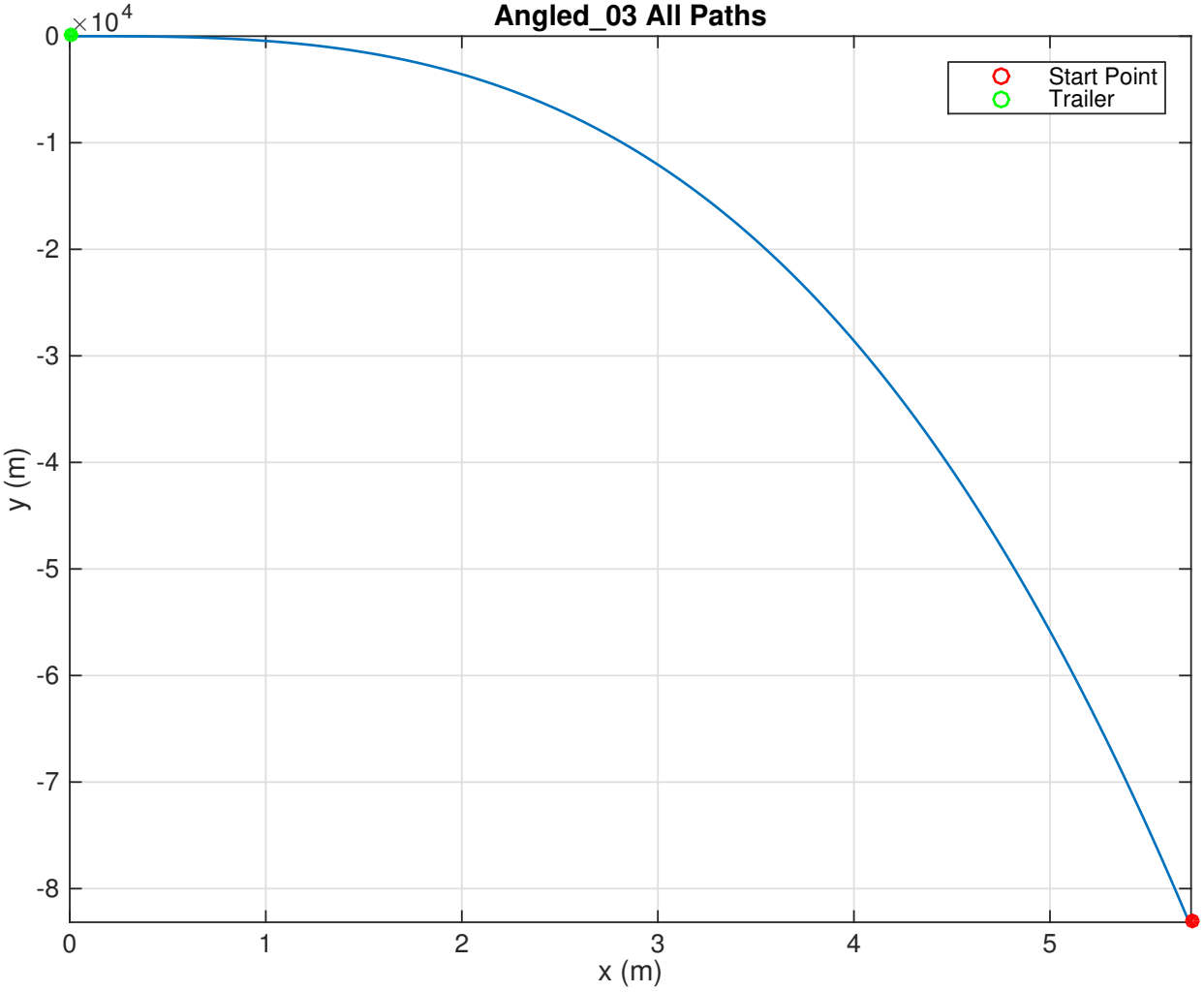

Angled_02 LIDAR Theta_1 vs Theta_2
θ 1
θ 2
Distance (m)
Index
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
0
20
40
60
80
100
120
140
160
180
200


Angled_02 Camera vs LIDAR Theta_1
Camera
LIDAR
Distance (m)
index
3.5
3
2.5
2
1.5
1
0.5
0
-0.5
0
20
40
60
80
100
120
140
160
180
200

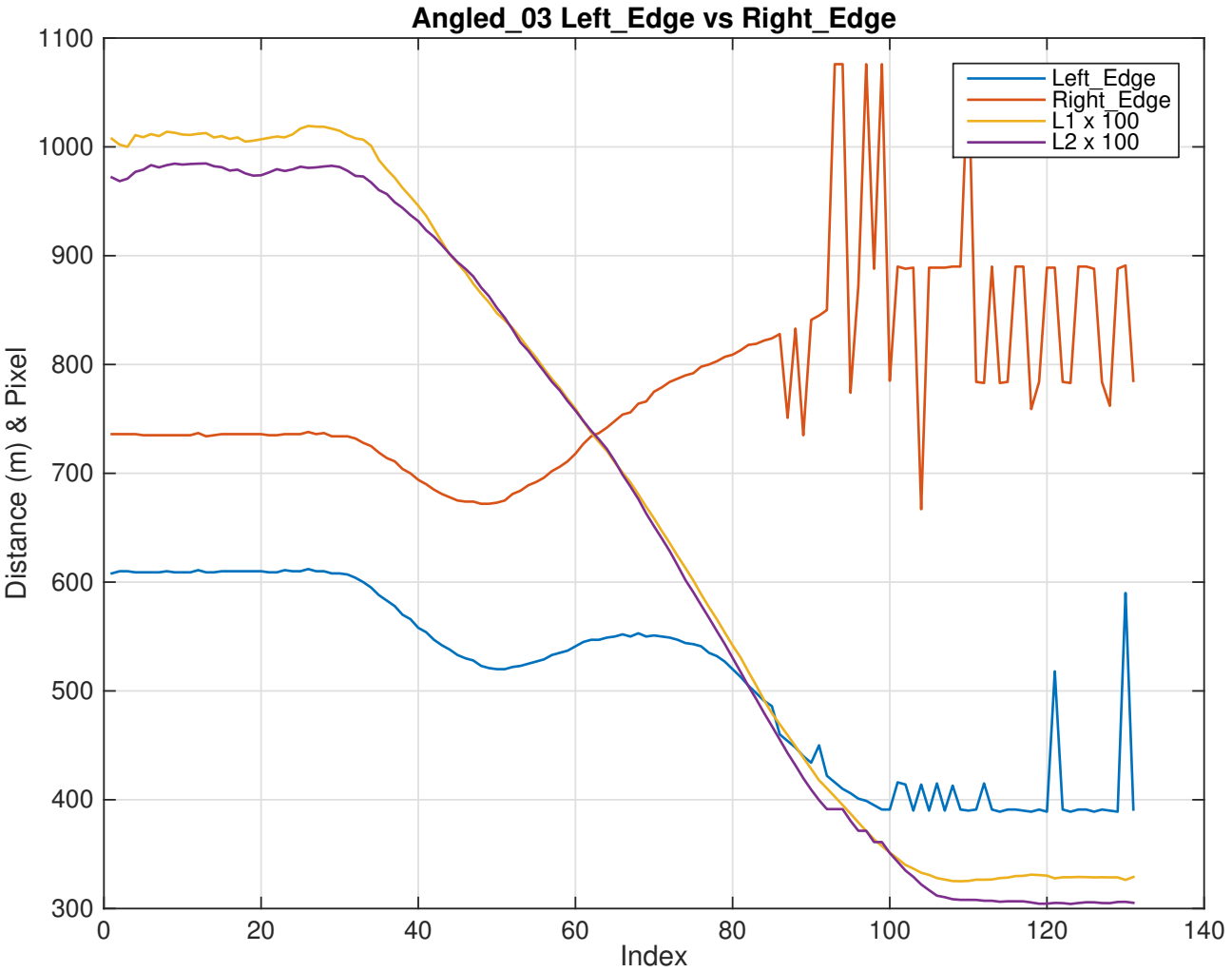

Angled_02 Camera vs LIDAR Theta_2
Camera
LIDAR
Distance (m)
index
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
0
20
40
60
80
100
120
140
160
180
200

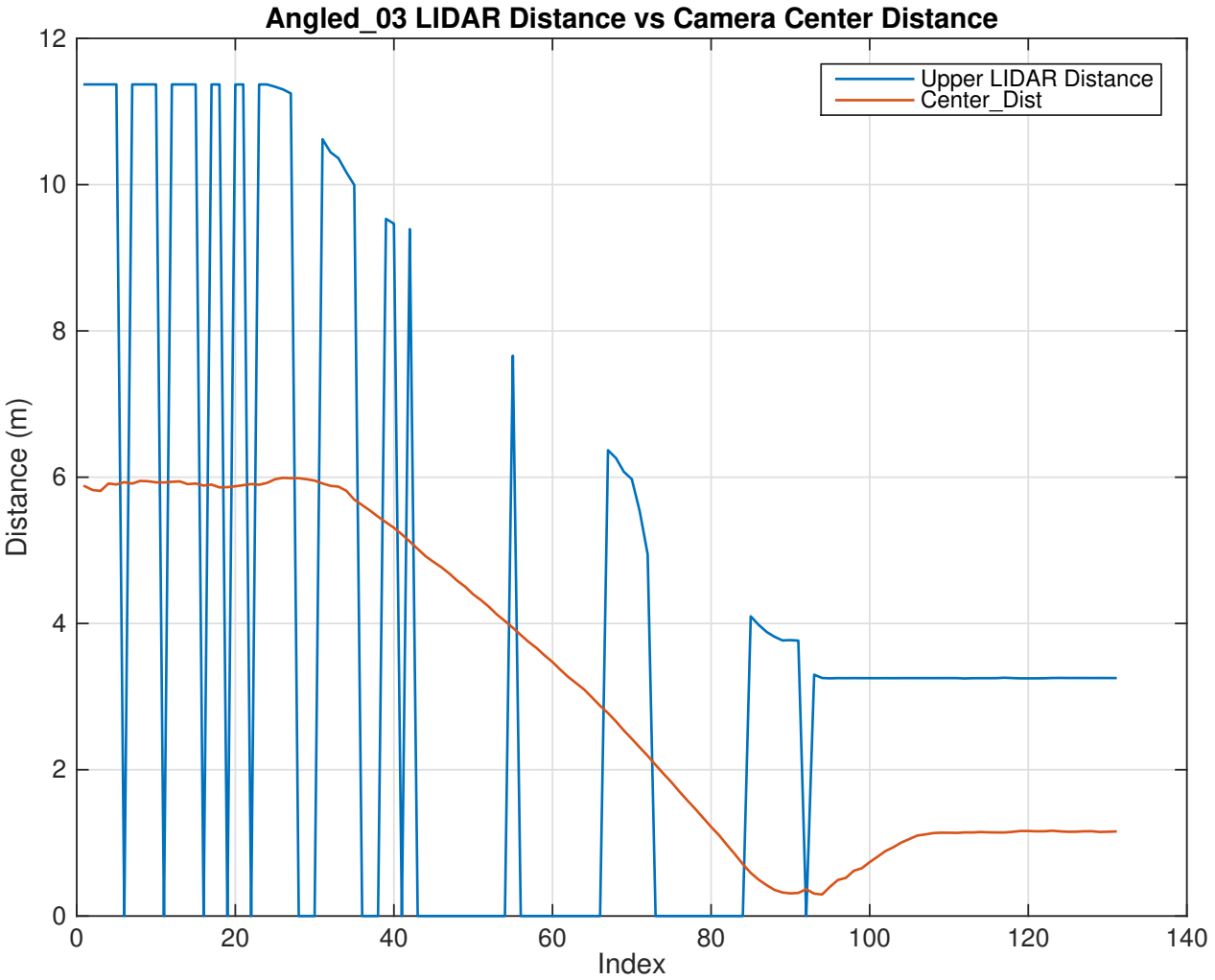

Angled_02 Camera Angles and Edge Distances
Rec θ 2
Rec θ 1
Rec θ P
L1/10
L2/10
3.5
3
2.5
2
1.5
1
0.5
0
-0.5
0
20
40
60
80
100
120
140
160
180
200

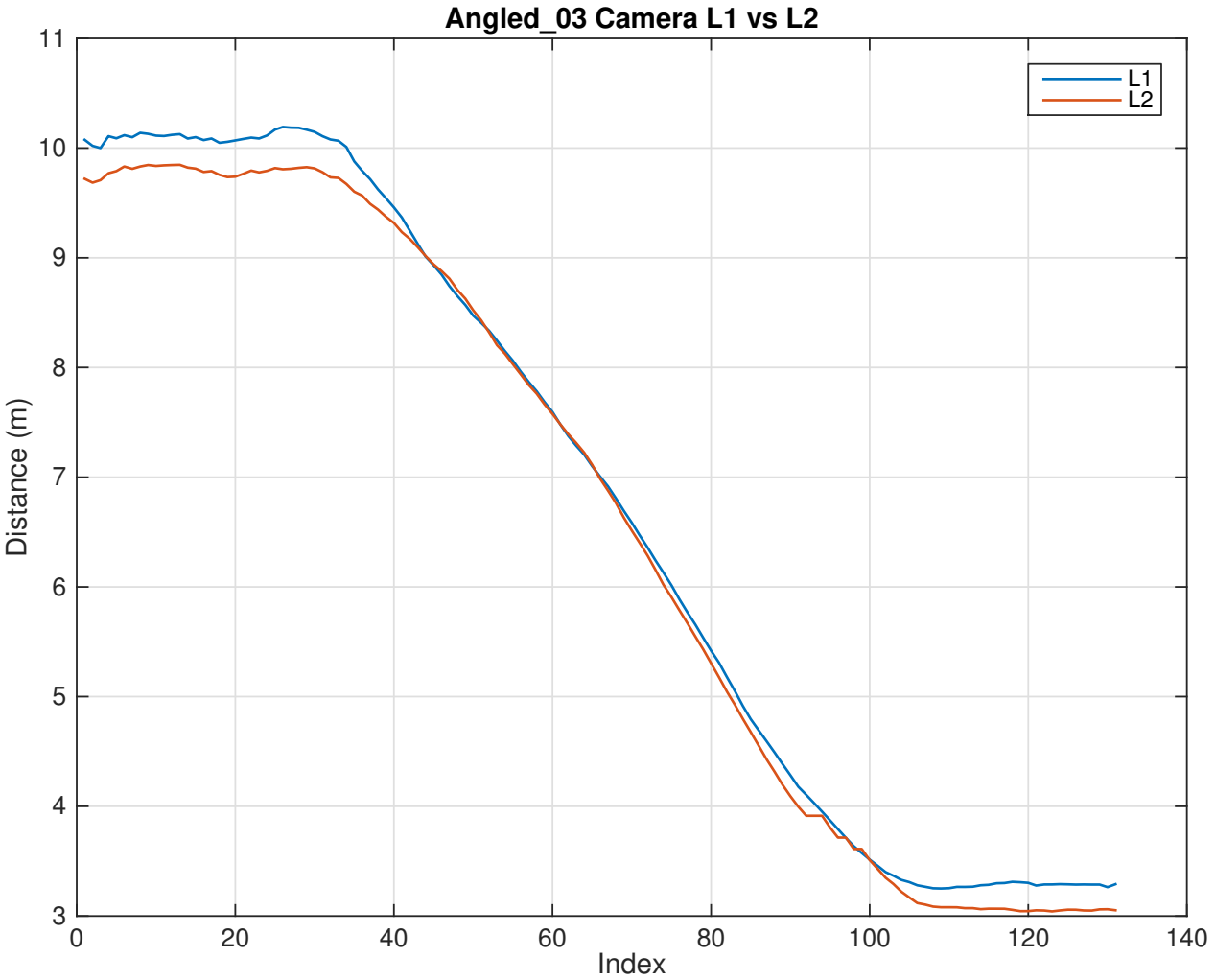

Angled_02 Calculated vs. Actual Steering
θ 2
θ P
Steering Command
Path Flag (1 = true)
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
0
20
40
60
80
100
120
140
160
180
200
Index

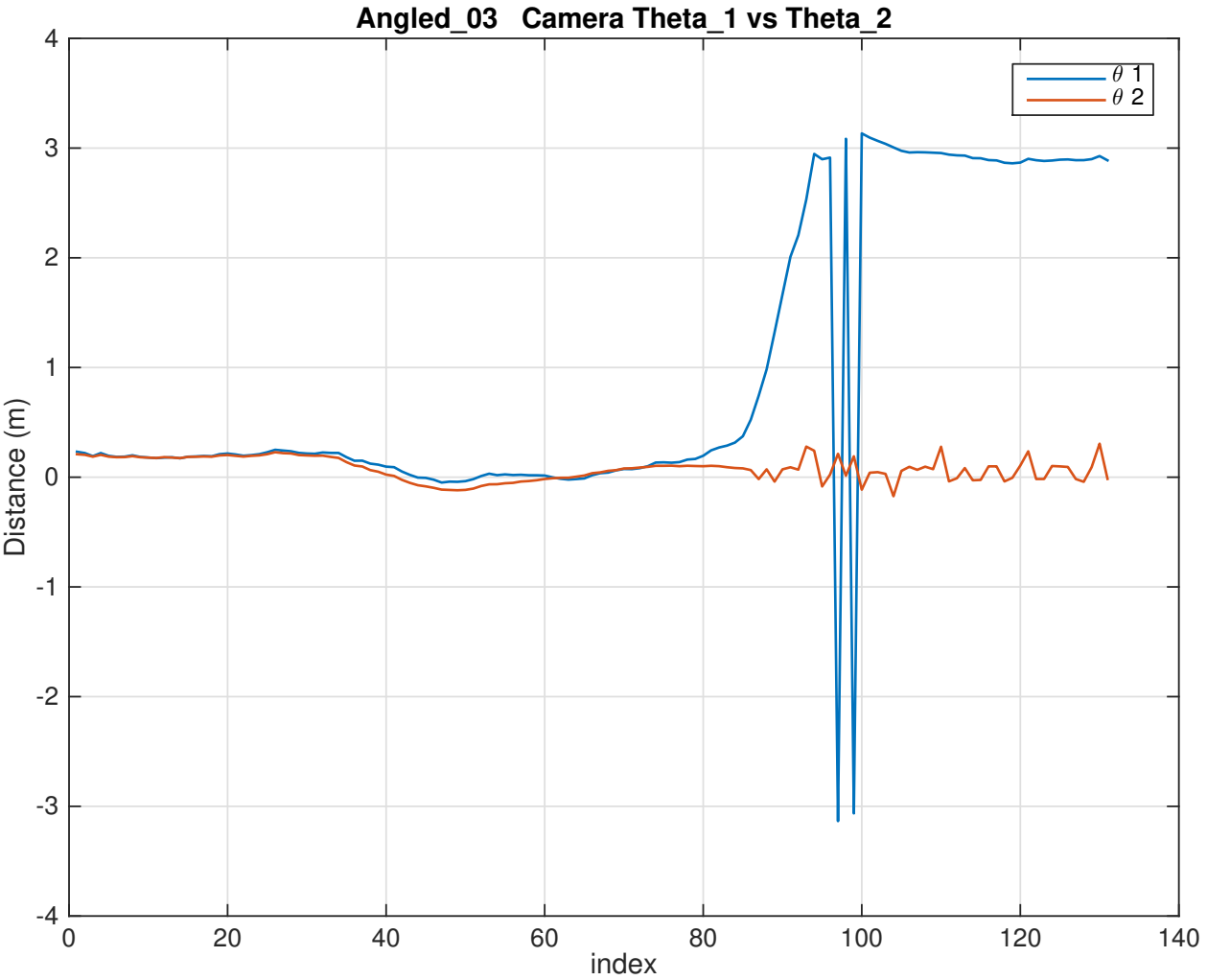

Angled_03 All Paths
×10^4
0
-1
-2
-3
-4
-5
-6
-7
-8
y (m)
0
1
2
3
4
5
x (m)
Start Point
Trailer

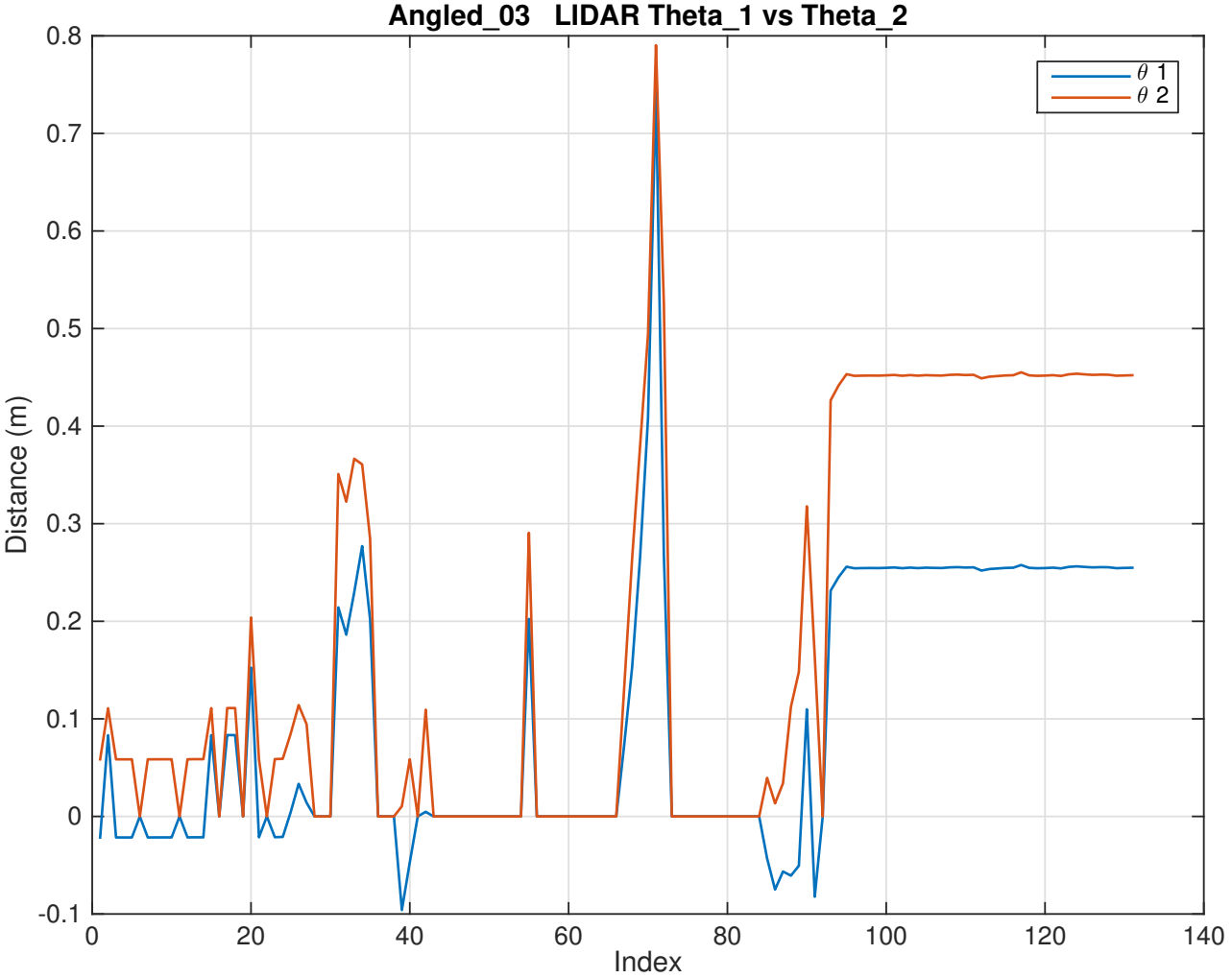
Number_Of_Unique_Paths	King_Pin_Detected
1	false

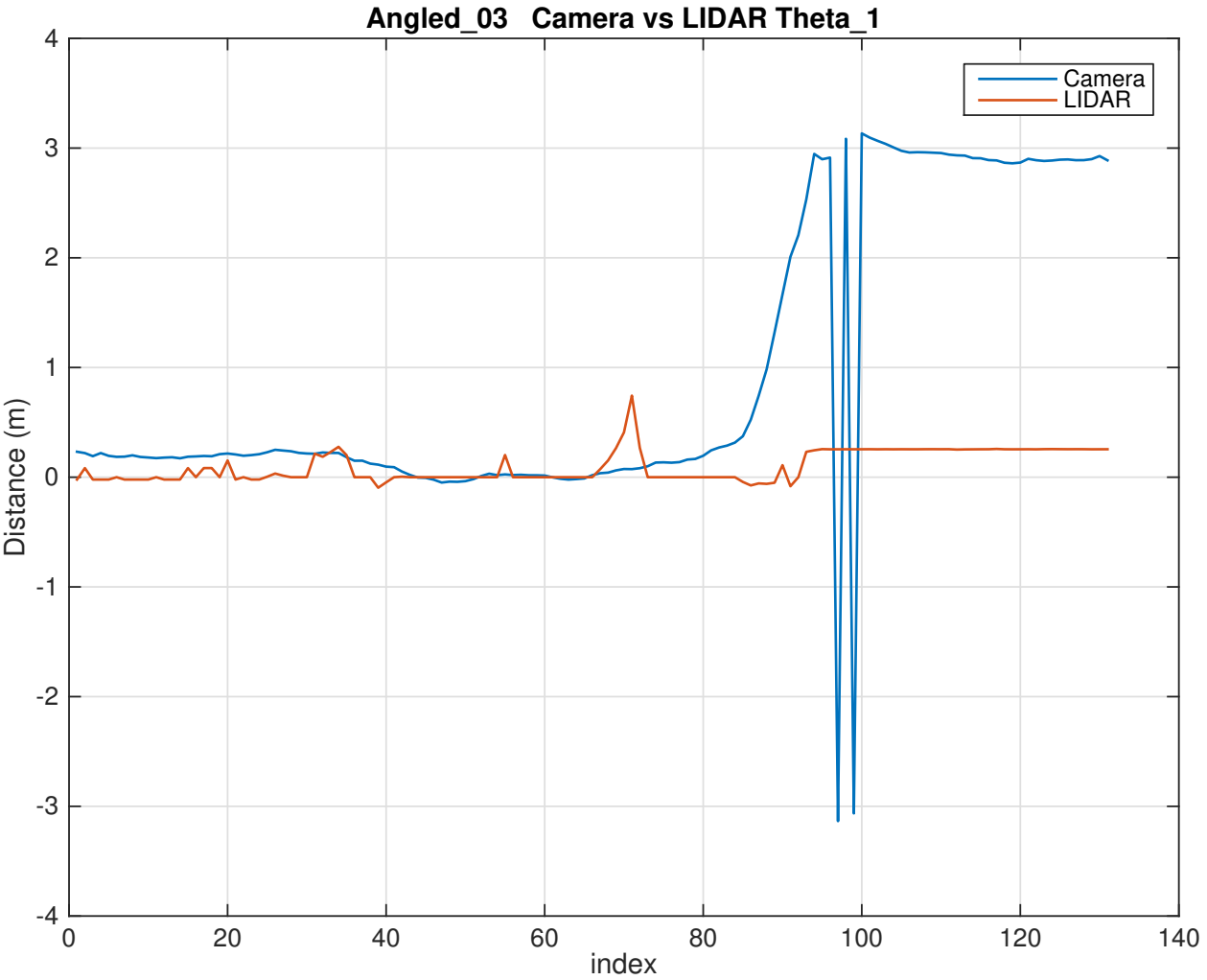

Angled_03 Left_Edge vs Right_Edge
Left_Edge
Right_Edge
L1 x 100
L2 x 100
Distance (m) & Pixel
Index
1100
1000
900
800
700
600
500
400
300
0
20
40
60
80
100
120
140

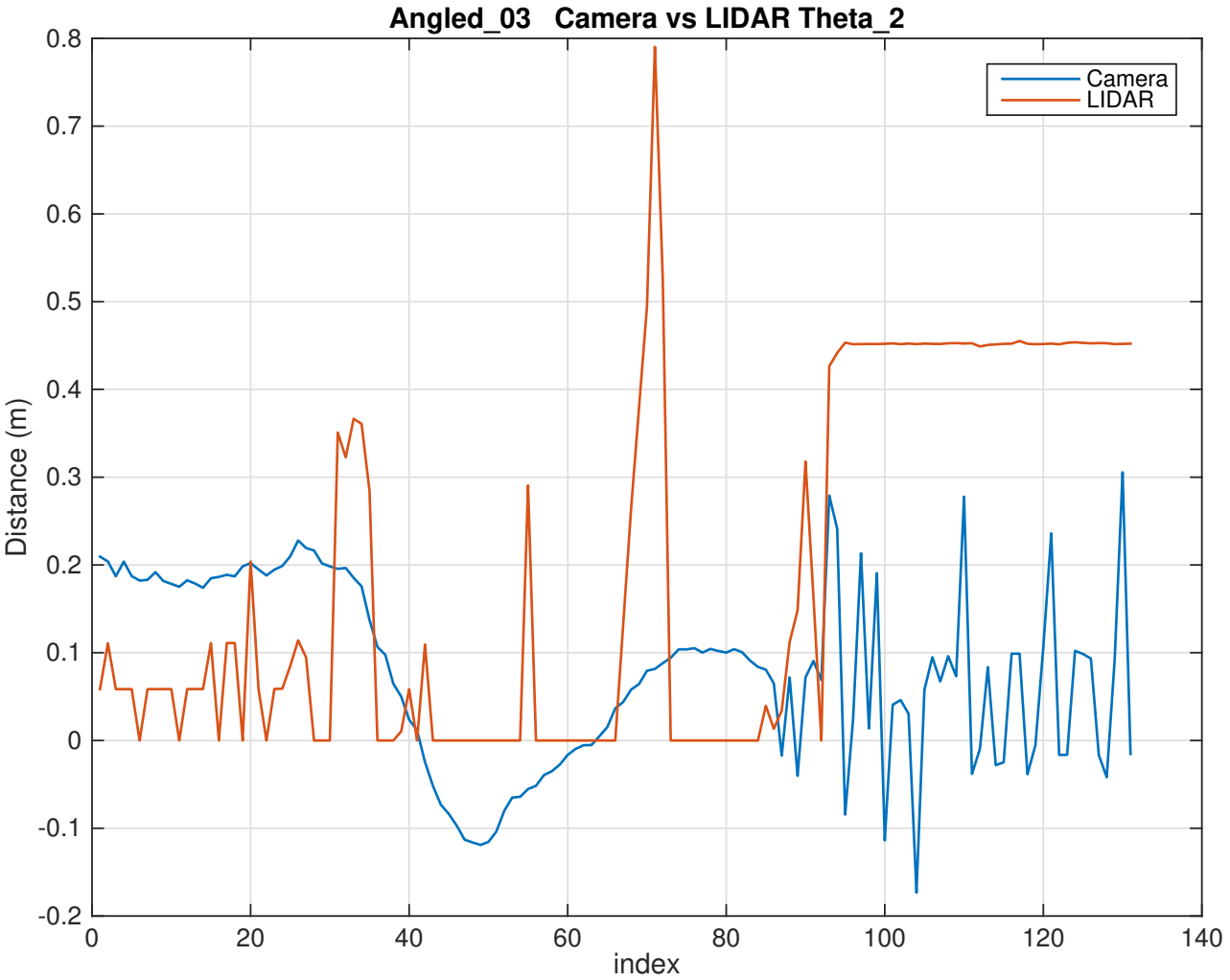

Angled_03 LIDAR Distance vs Camera Center Distance
Upper LIDAR Distance
Center_Dist
Distance (m)
Index
0
2
4
6
8
10
12
0
20
40
60
80
100
120
140

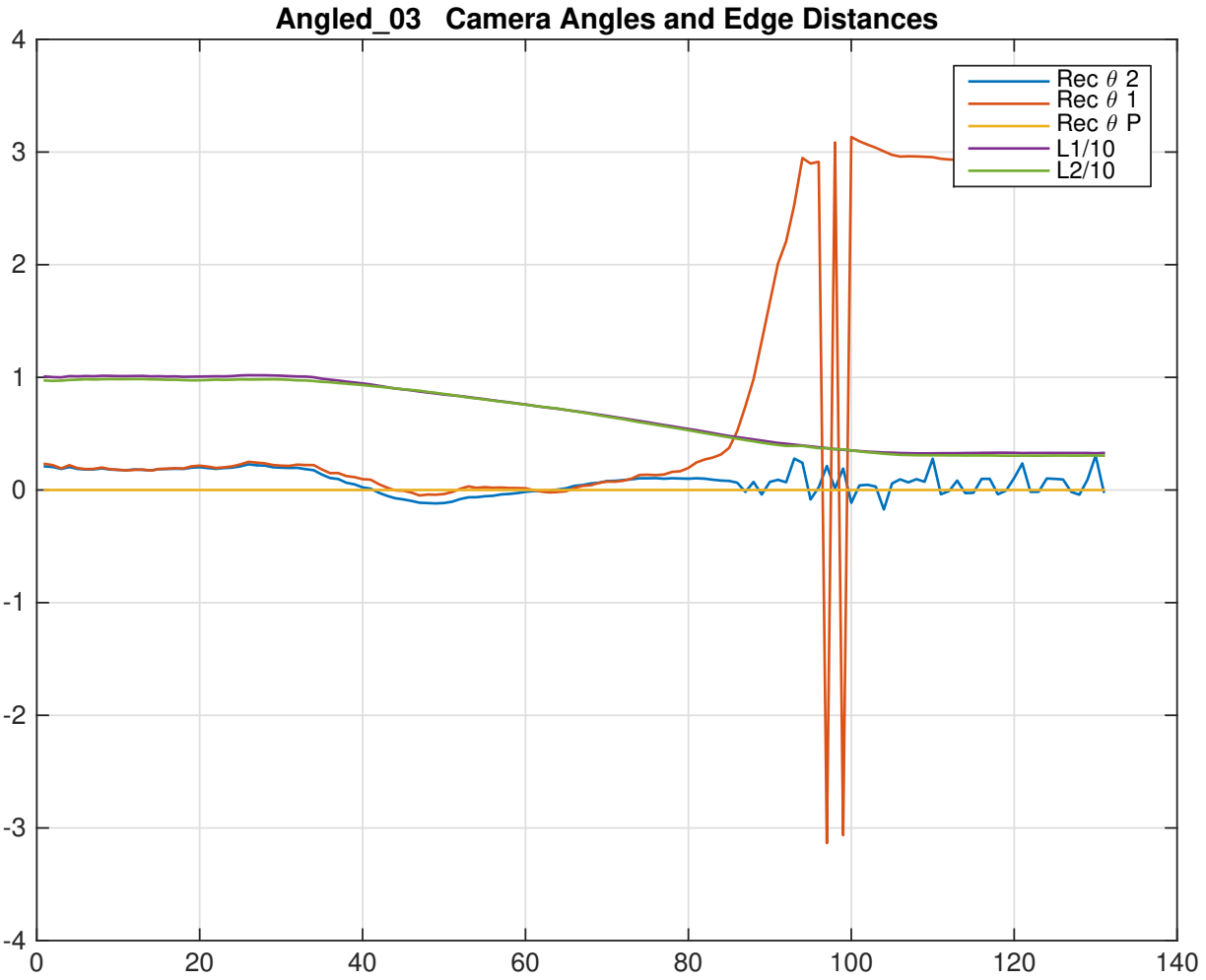

Angled_03 Camera L1 vs L2
L1
L2
Distance (m)
Index
11
10
9
8
7
6
5
4
3
0
20
40
60
80
100
120
140

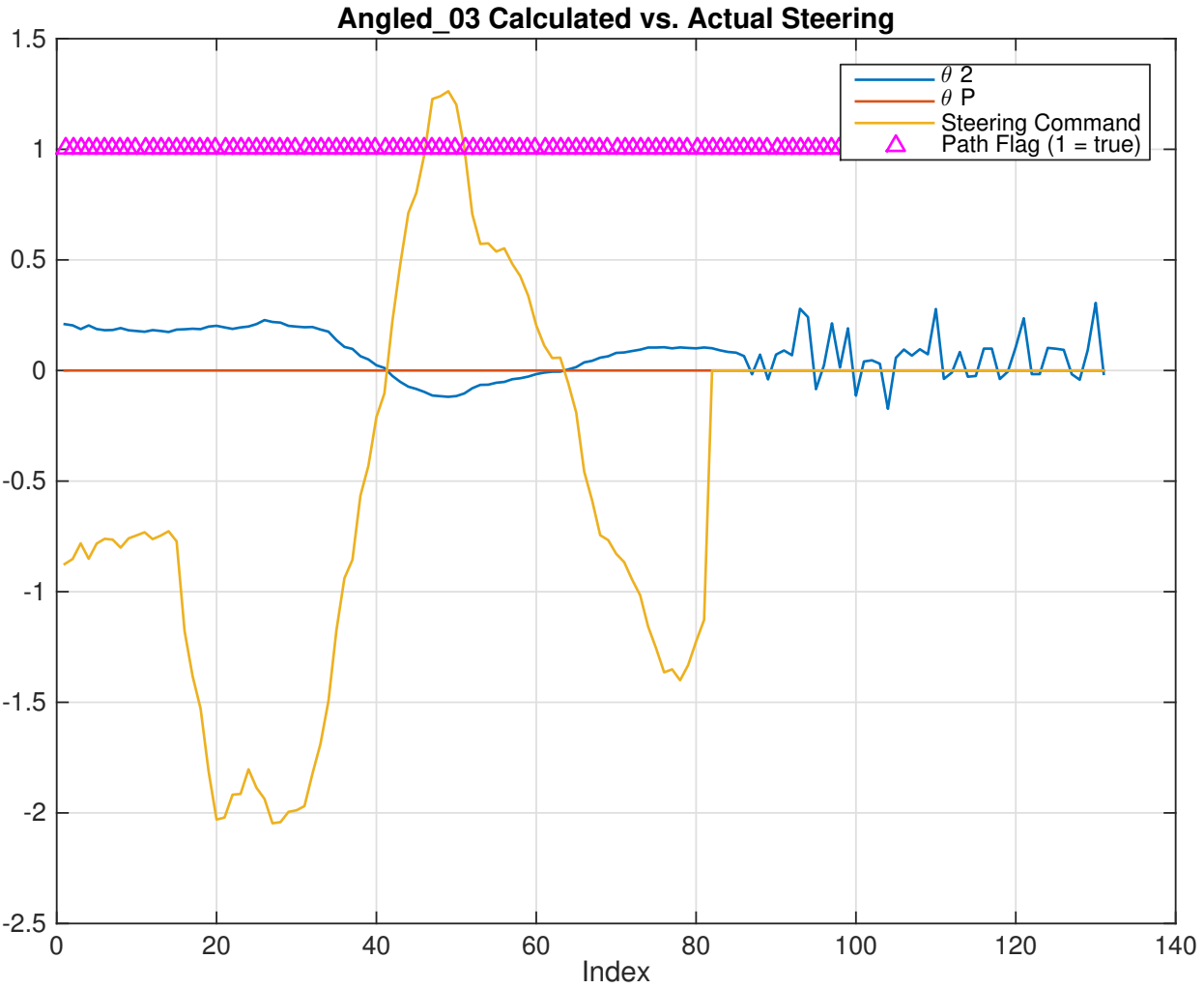

Angled_03 Camera Theta_1 vs Theta_2
θ 1
θ 2
Distance (m)
index
4
3
2
1
0
-1
-2
-3
-4
0
20
40
60
80
100
120
140

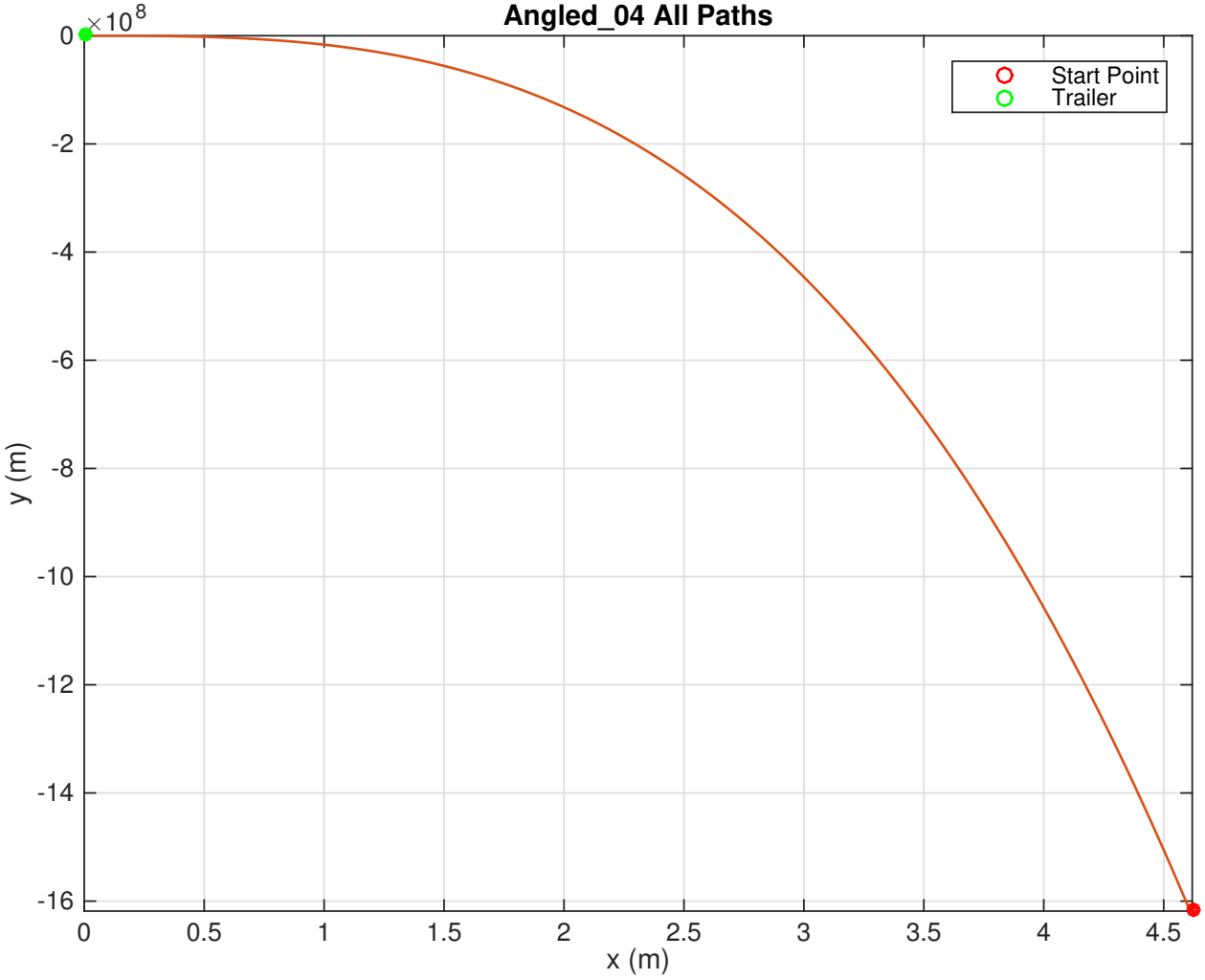

Angled_03 LIDAR Theta_1 vs Theta_2
θ 1
θ 2
Distance (m)
Index
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
0
20
40
60
80
100
120
140


Angled_03 Camera vs LIDAR Theta_1
Camera
LIDAR
Distance (m)
index
4
3
2
1
0
-1
-2
-3
-4
0
20
40
60
80
100
120
140

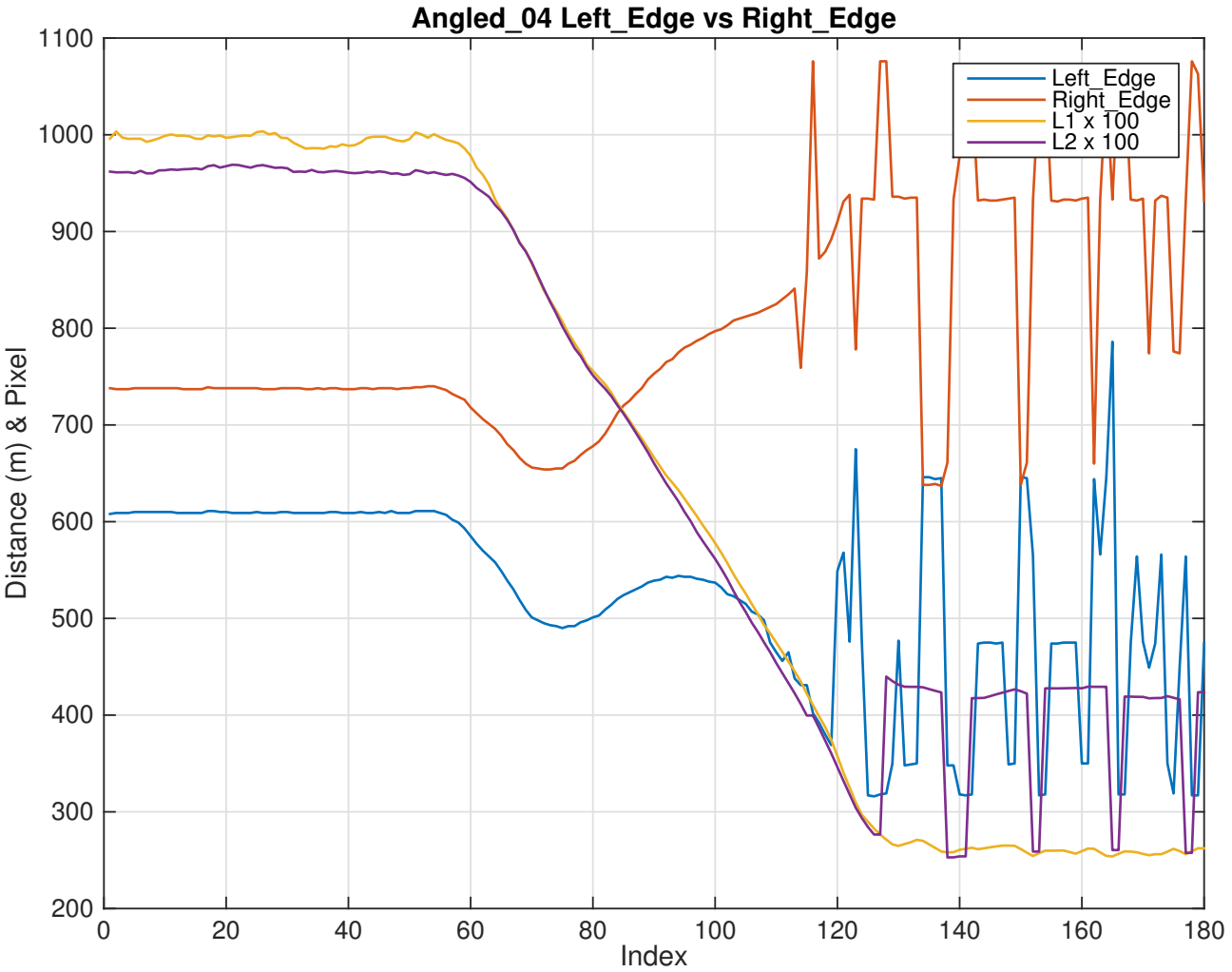

Angled_03 Camera vs LIDAR Theta_2
Camera
LIDAR
Distance (m)
index
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
0
20
40
60
80
100
120
140

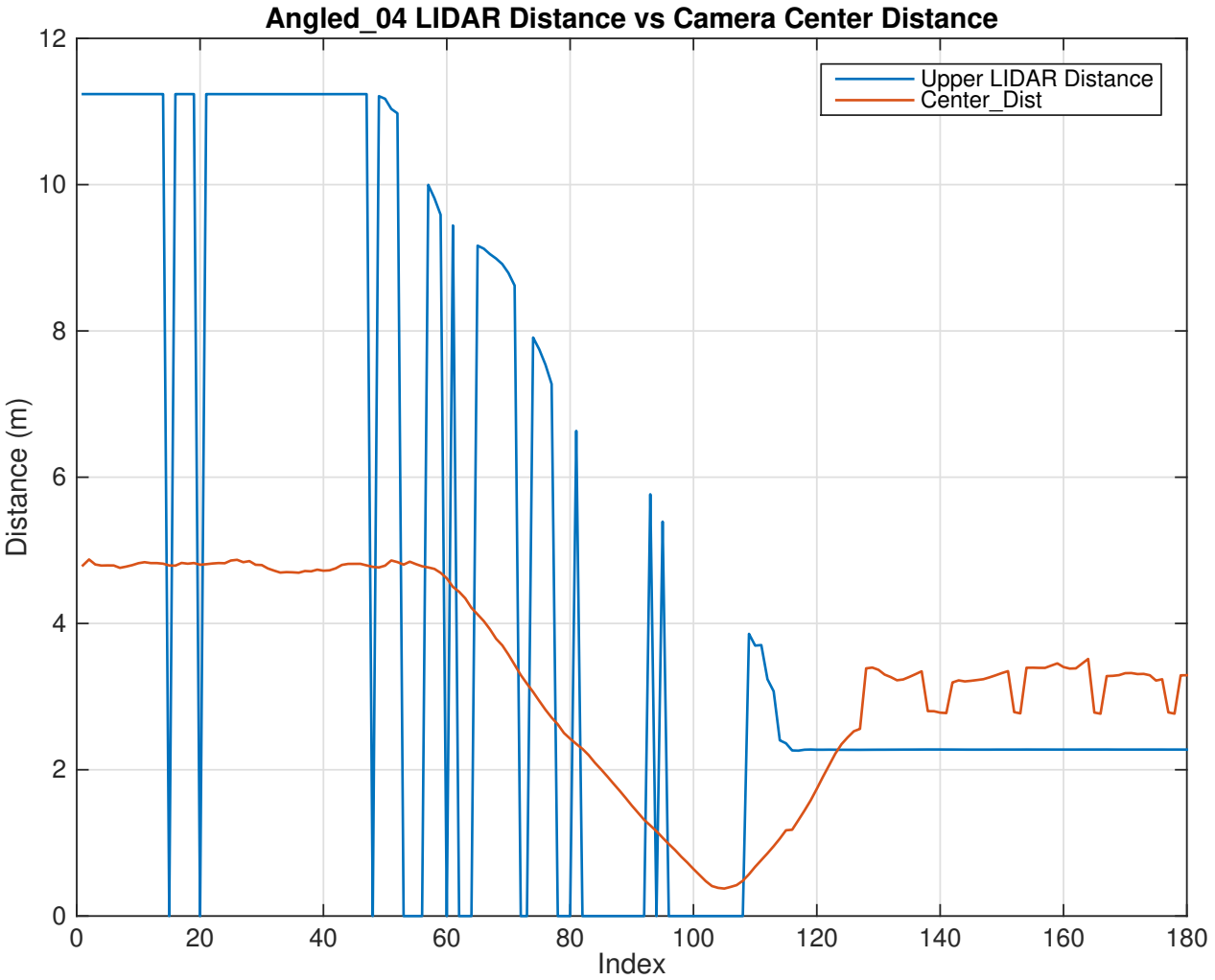

Angled_03 Camera Angles and Edge Distances
Rec θ 2
Rec θ 1
Rec θ P
L1/10
L2/10
4
3
2
1
0
-1
-2
-3
-4
0
20
40
60
80
100
120
140

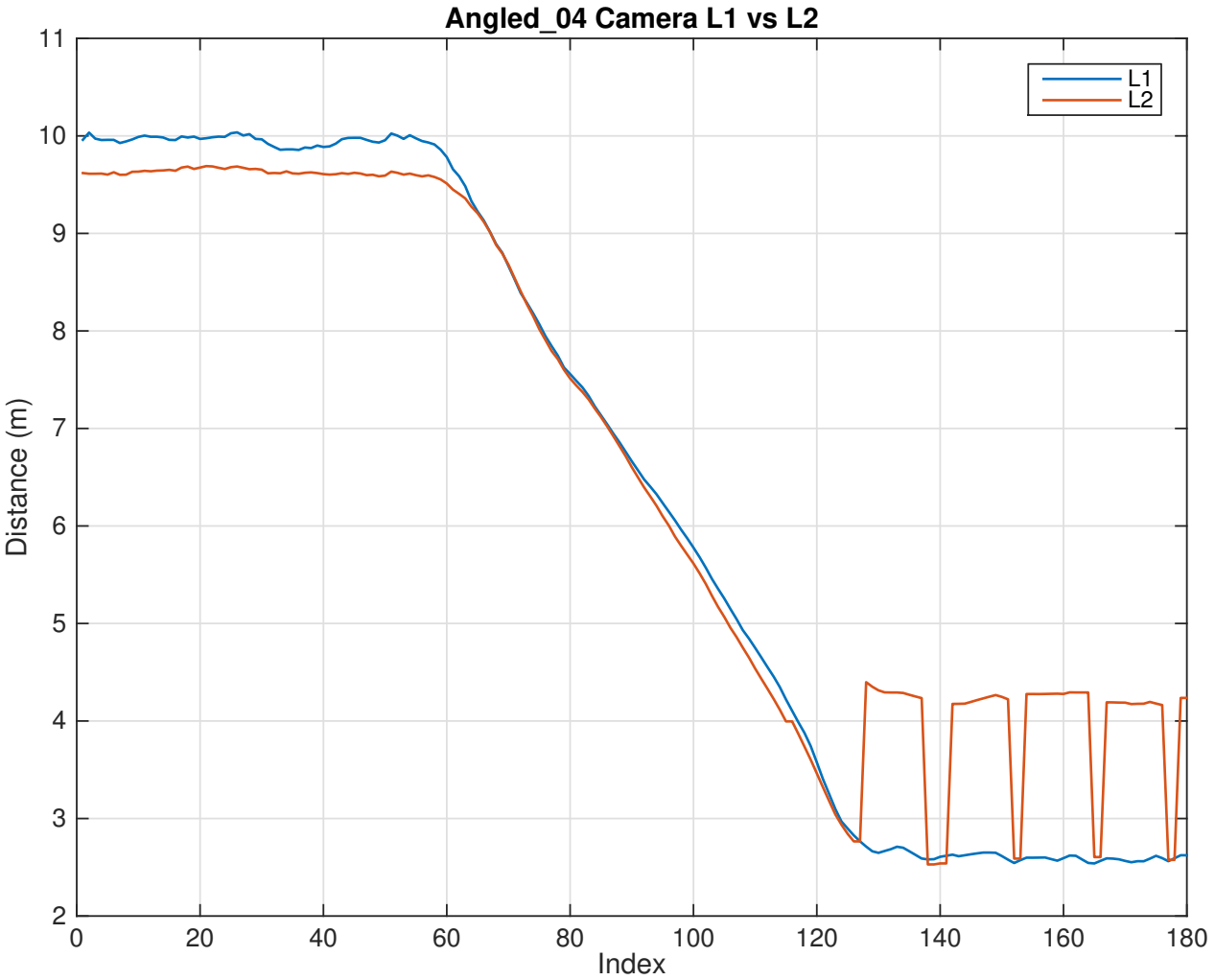

Angled_03 Calculated vs. Actual Steering
θ 2
θ P
Steering Command
Path Flag (1 = true)
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
0
20
40
60
80
100
120
140
Index

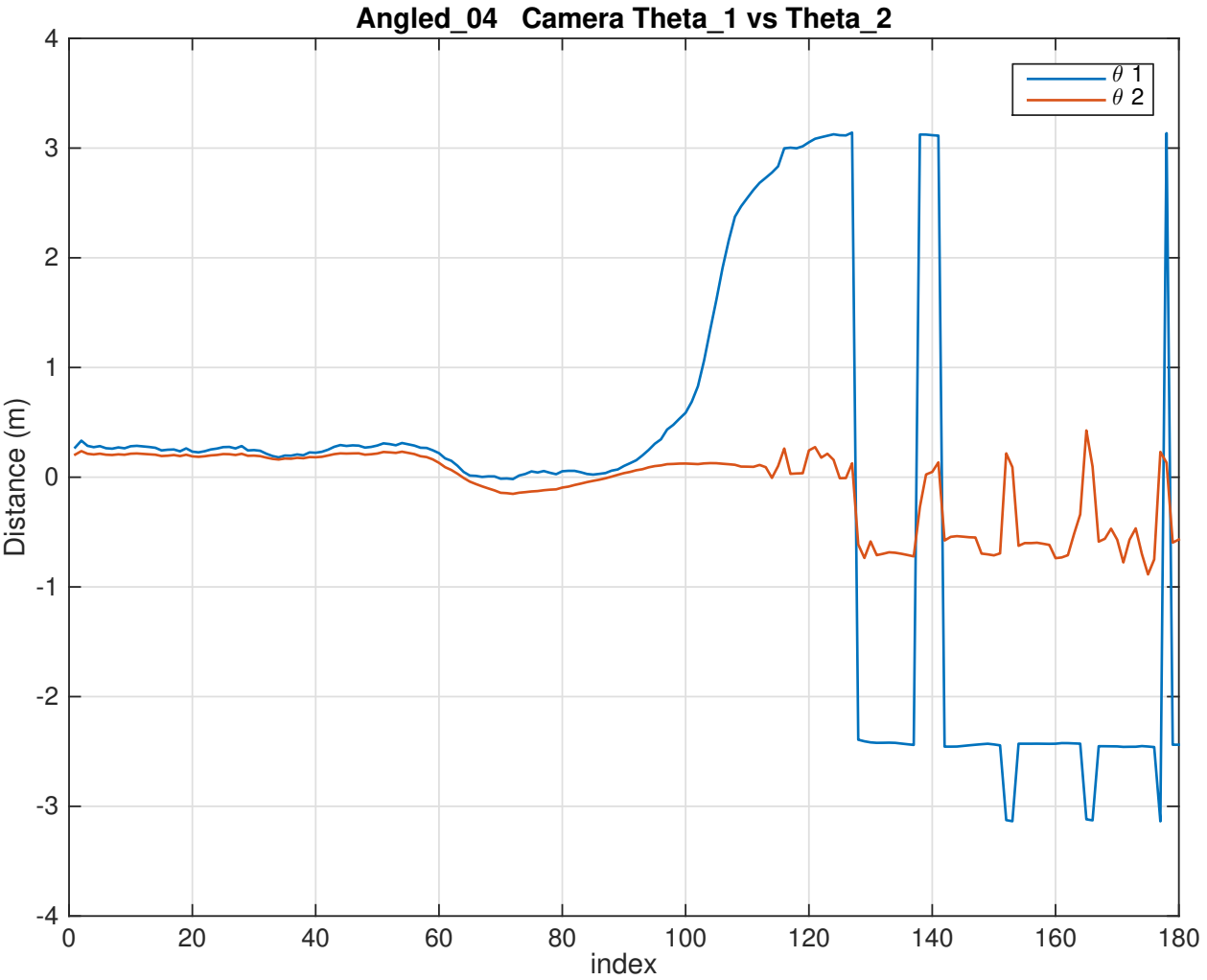

Angled_04 All Paths
×10^8
0
-2
-4
-6
-8
-10
-12
-14
-16
y (m)
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
x (m)
Start Point
Trailer

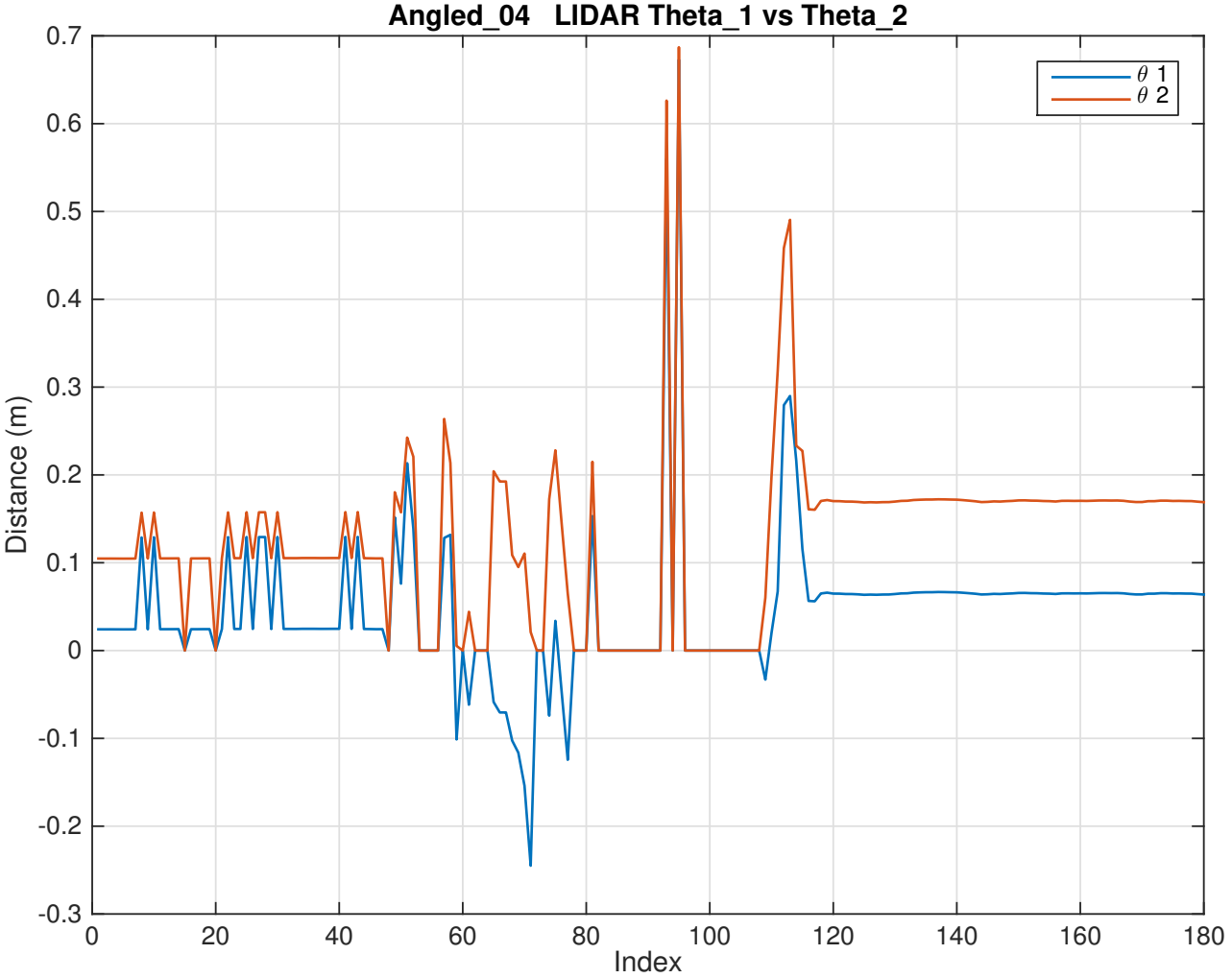
Number_Of_Unique_Paths	King_Pin_Detected
45	false

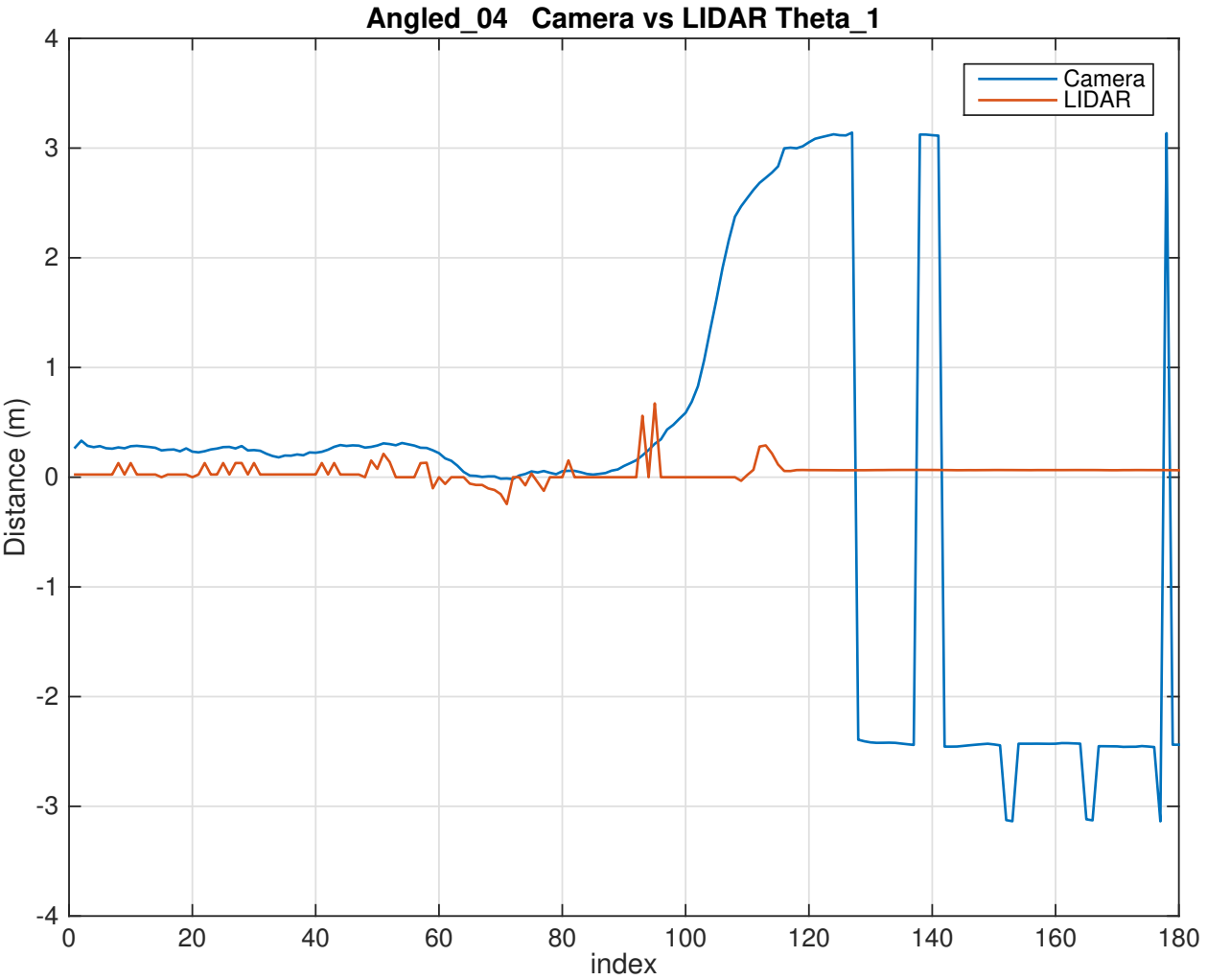

Angled_04 Left_Edge vs Right_Edge
Left_Edge
Right_Edge
L1 x 100
L2 x 100
Distance (m) & Pixel
Index
1100
1000
900
800
700
600
500
400
300
200
0
20
40
60
80
100
120
140
160
180

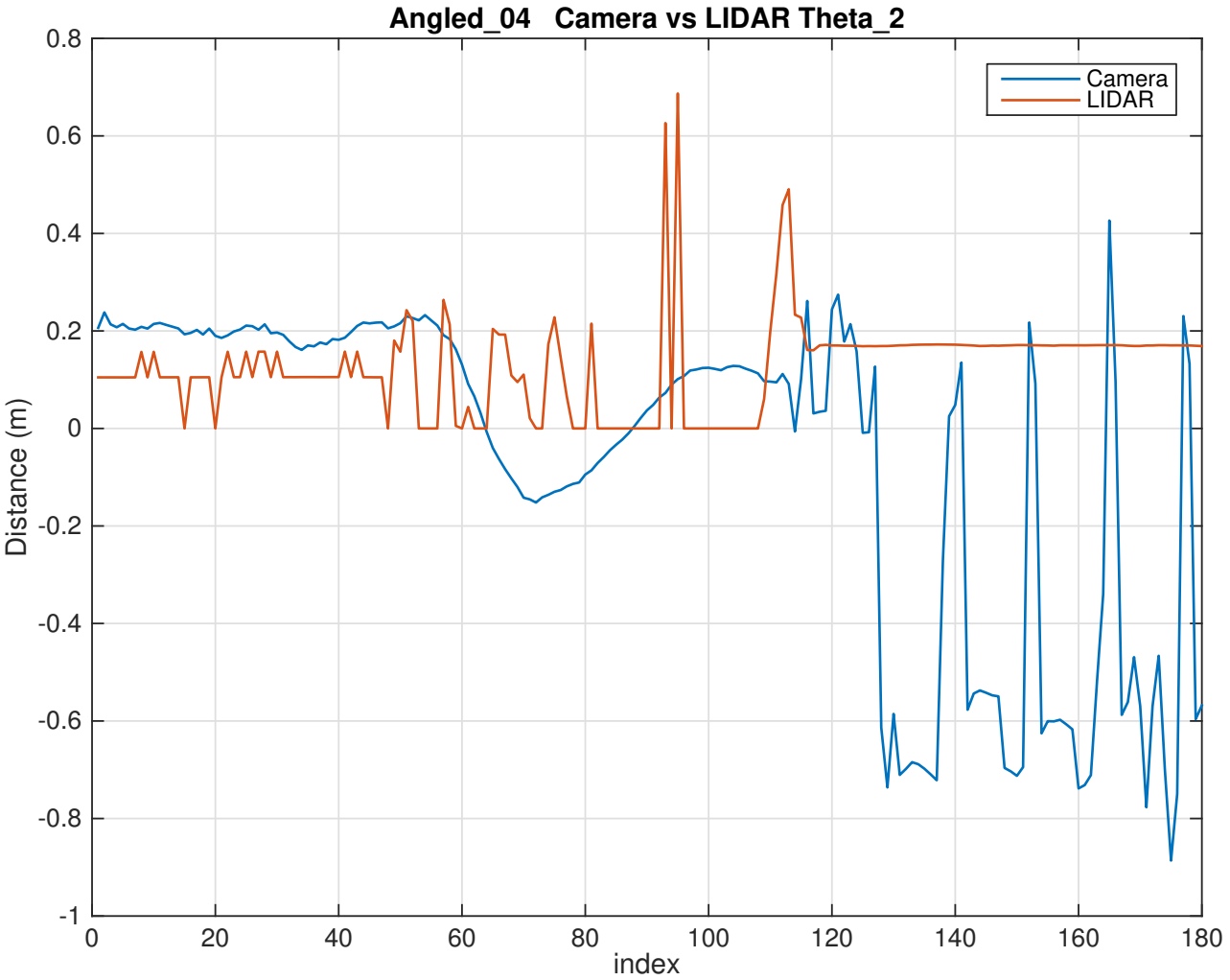

Angled_04 LIDAR Distance vs Camera Center Distance
Upper LIDAR Distance
Center_Dist
Distance (m)
Index
0
2
4
6
8
10
12
0
20
40
60
80
100
120
140
160
180

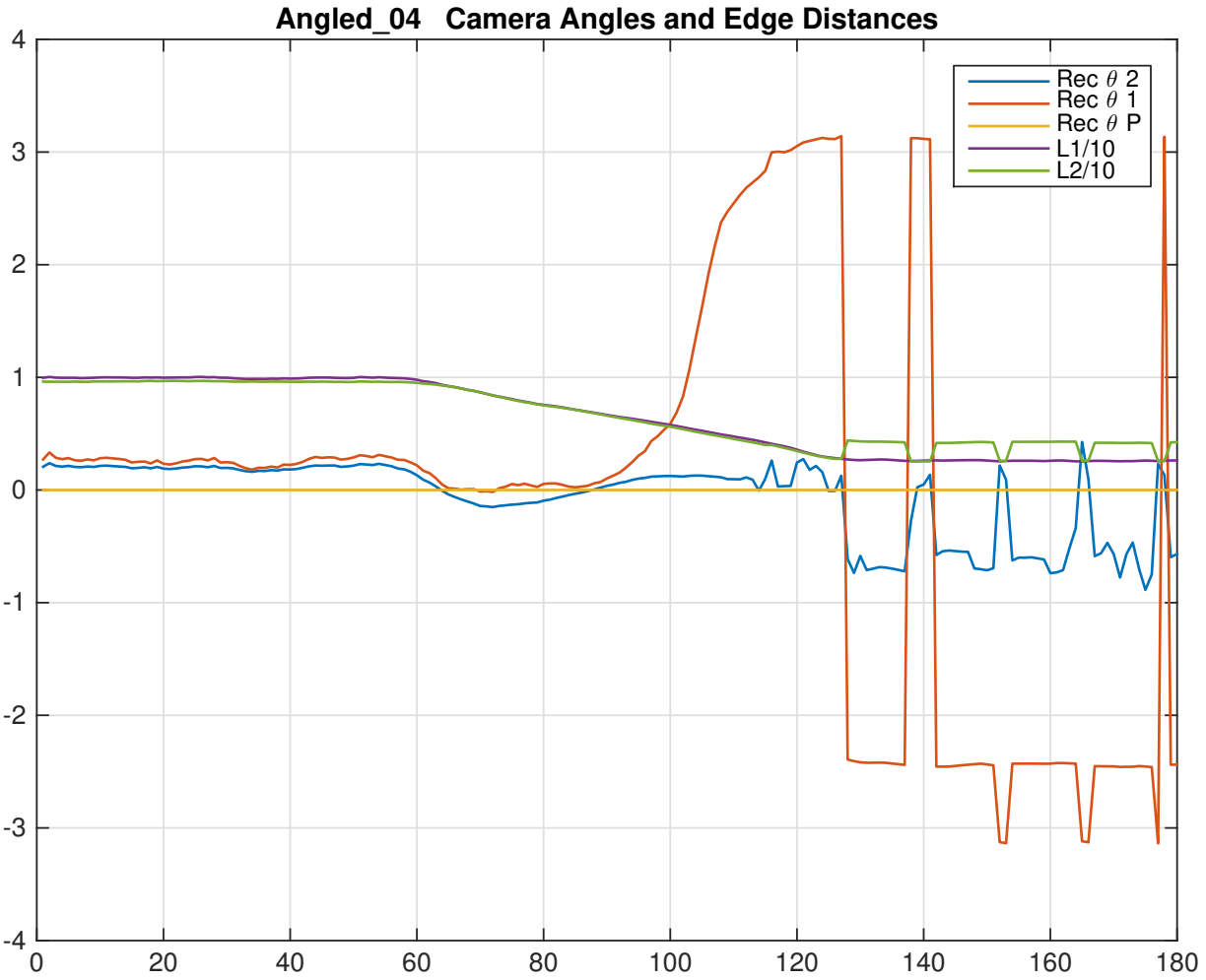

Angled_04 Camera L1 vs L2
L1
L2
Distance (m)
Index
11
10
9
8
7
6
5
4
3
2
0
20
40
60
80
100
120
140
160
180

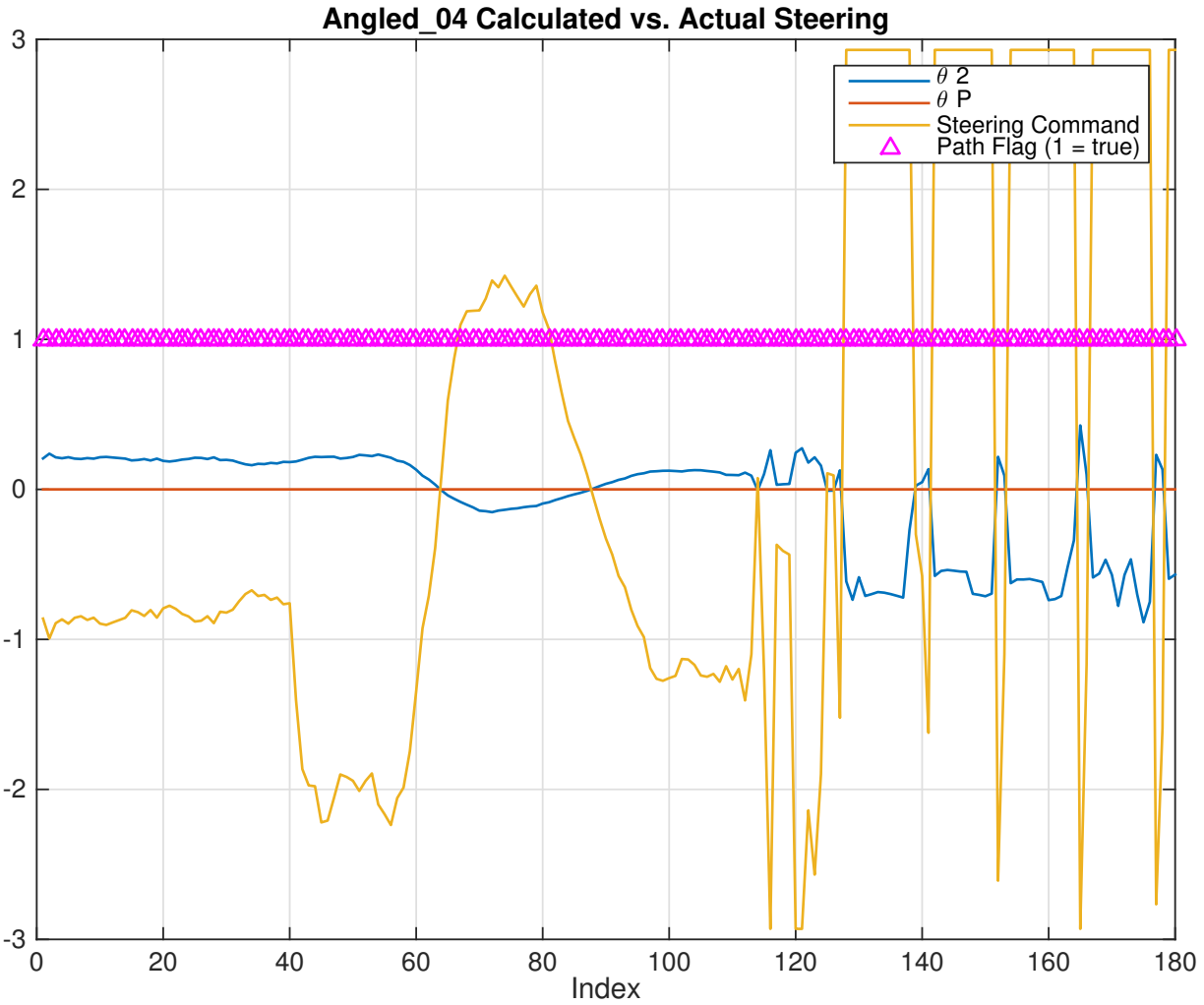

Angled_04 Camera Theta_1 vs Theta_2
θ 1
θ 2
Distance (m)
index
4
3
2
1
0
-1
-2
-3
-4
0
20
40
60
80
100
120
140
160
180

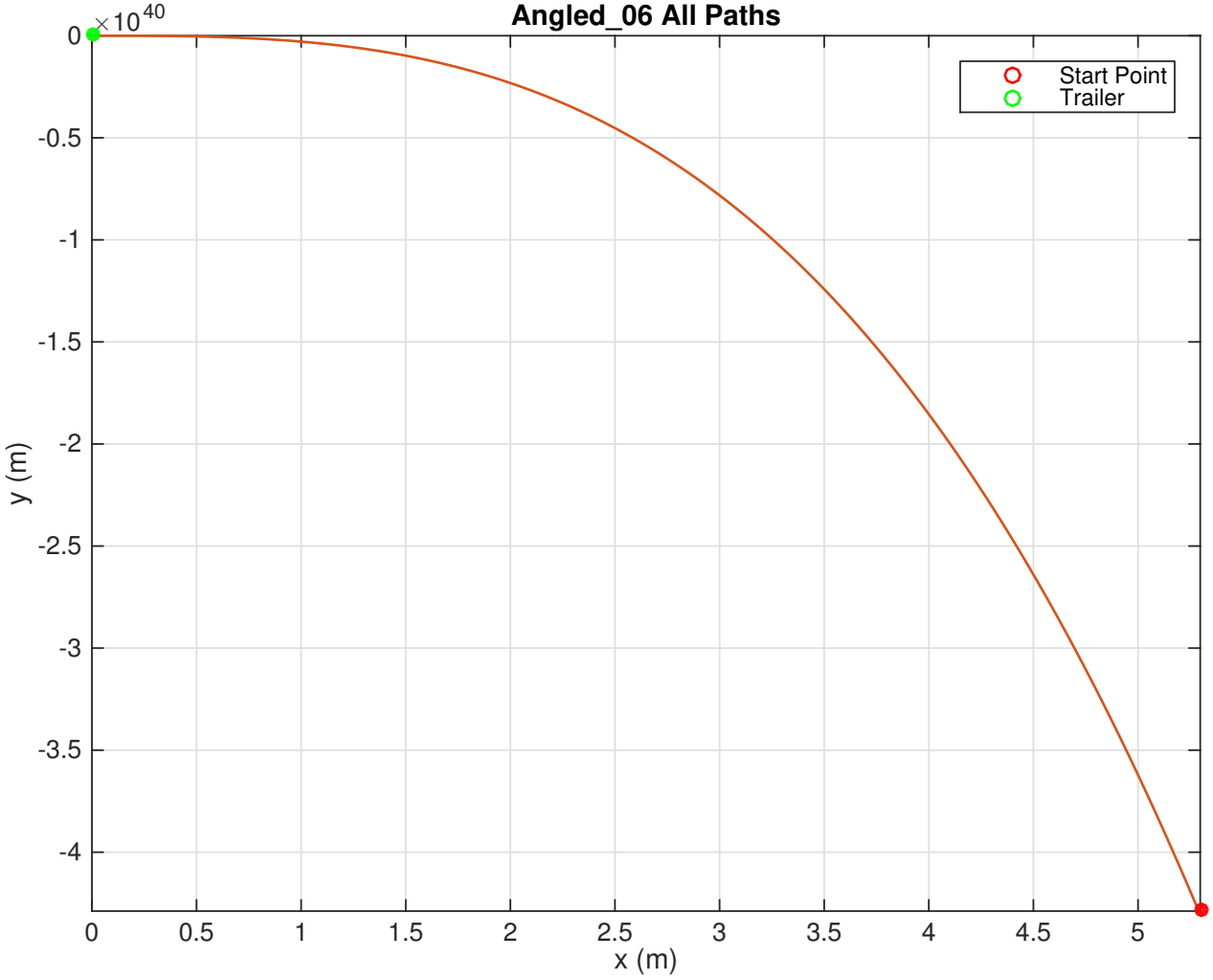

Angled_04 LIDAR Theta_1 vs Theta_2
θ 1
θ 2
Distance (m)
Index
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
0
20
40
60
80
100
120
140
160
180


Angled_04 Camera vs LIDAR Theta_1
Camera
LIDAR
Distance (m)
index
4
3
2
1
0
-1
-2
-3
-4
0
20
40
60
80
100
120
140
160
180

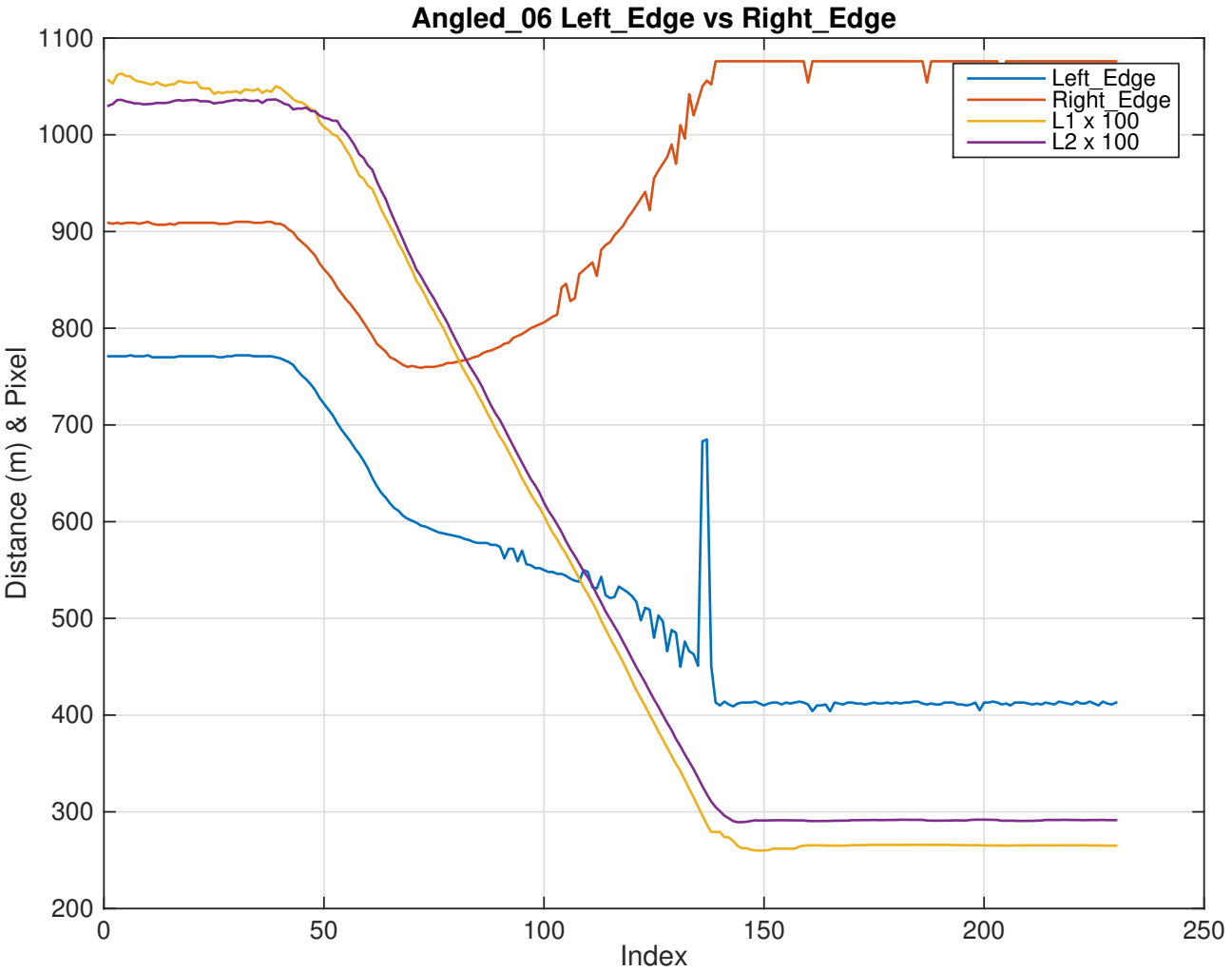

Angled_04 Camera vs LIDAR Theta_2
Camera
LIDAR
Distance (m)
index
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
0
20
40
60
80
100
120
140
160
180

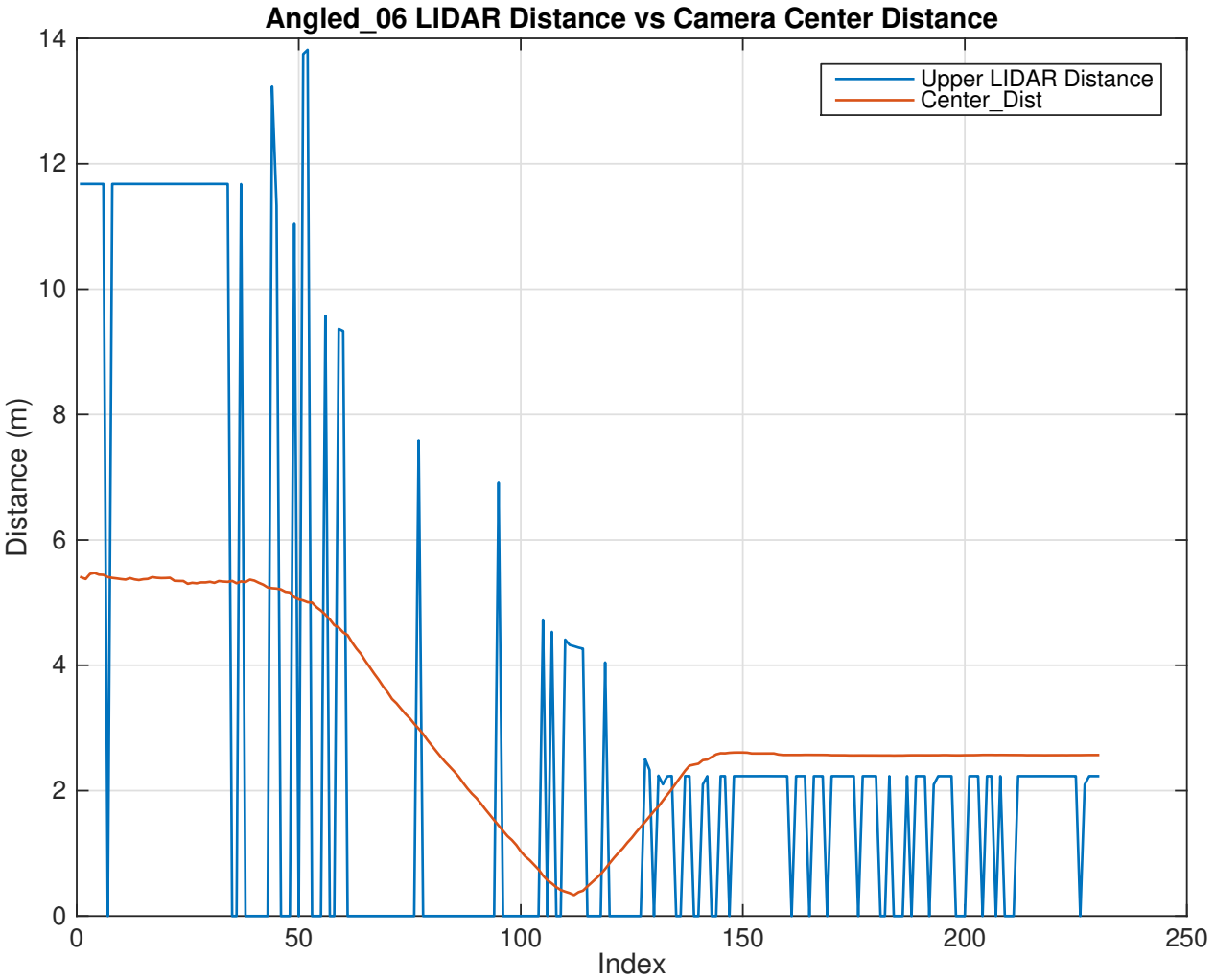

Angled_04 Camera Angles and Edge Distances
Rec θ 2
Rec θ 1
Rec θ P
L1/10
L2/10
4
3
2
1
0
-1
-2
-3
-4
0
20
40
60
80
100
120
140
160
180

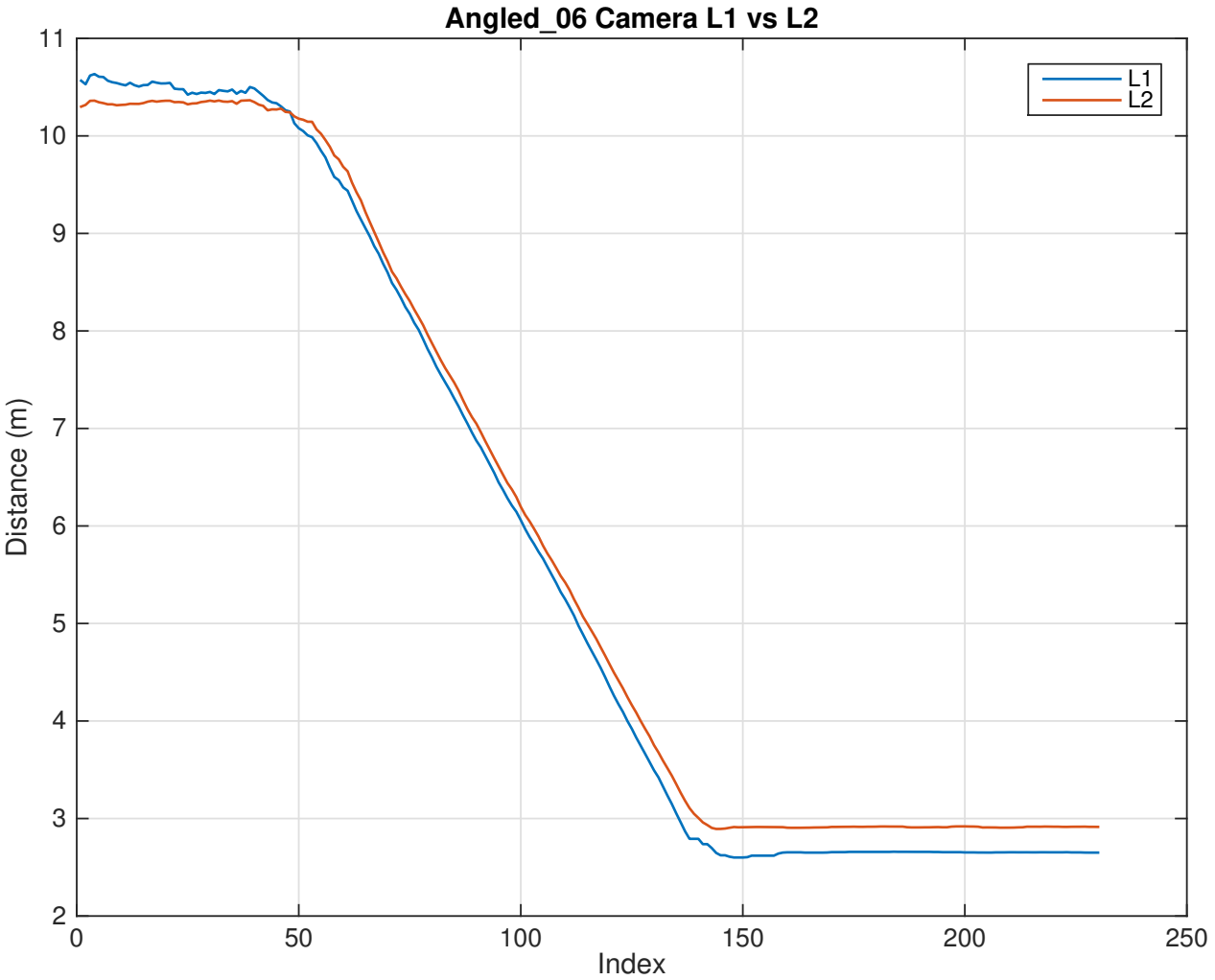

Angled_04 Calculated vs. Actual Steering
θ 2
θ P
Steering Command
Path Flag (1 = true)
3
2
1
0
-1
-2
-3
0
20
40
60
80
100
120
140
160
180
Index

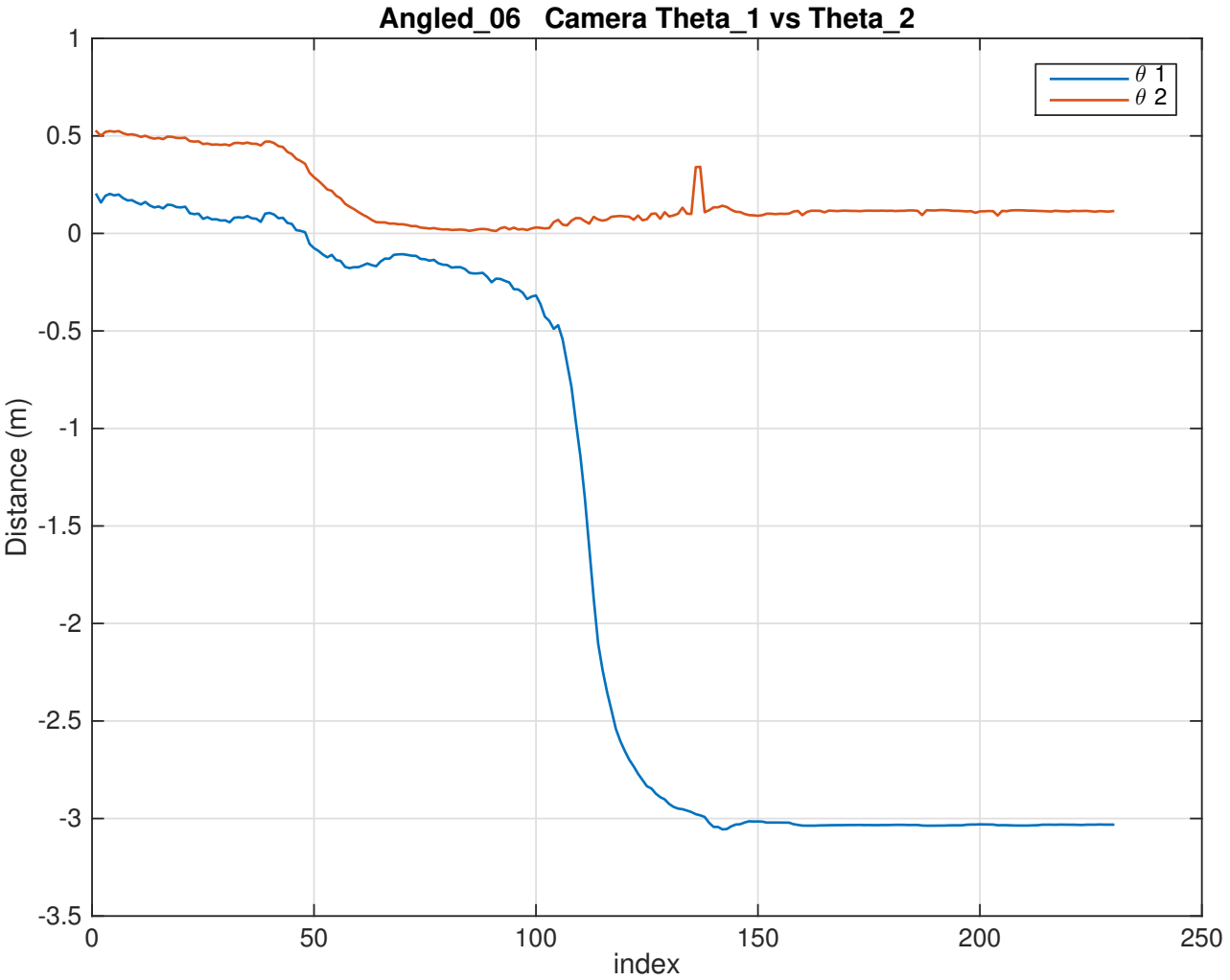

Angled_06 All Paths
×10^40
Start Point
Trailer
y (m)
x (m)
0
-0.5
-1
-1.5
-2
-2.5
-3
-3.5
-4
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5

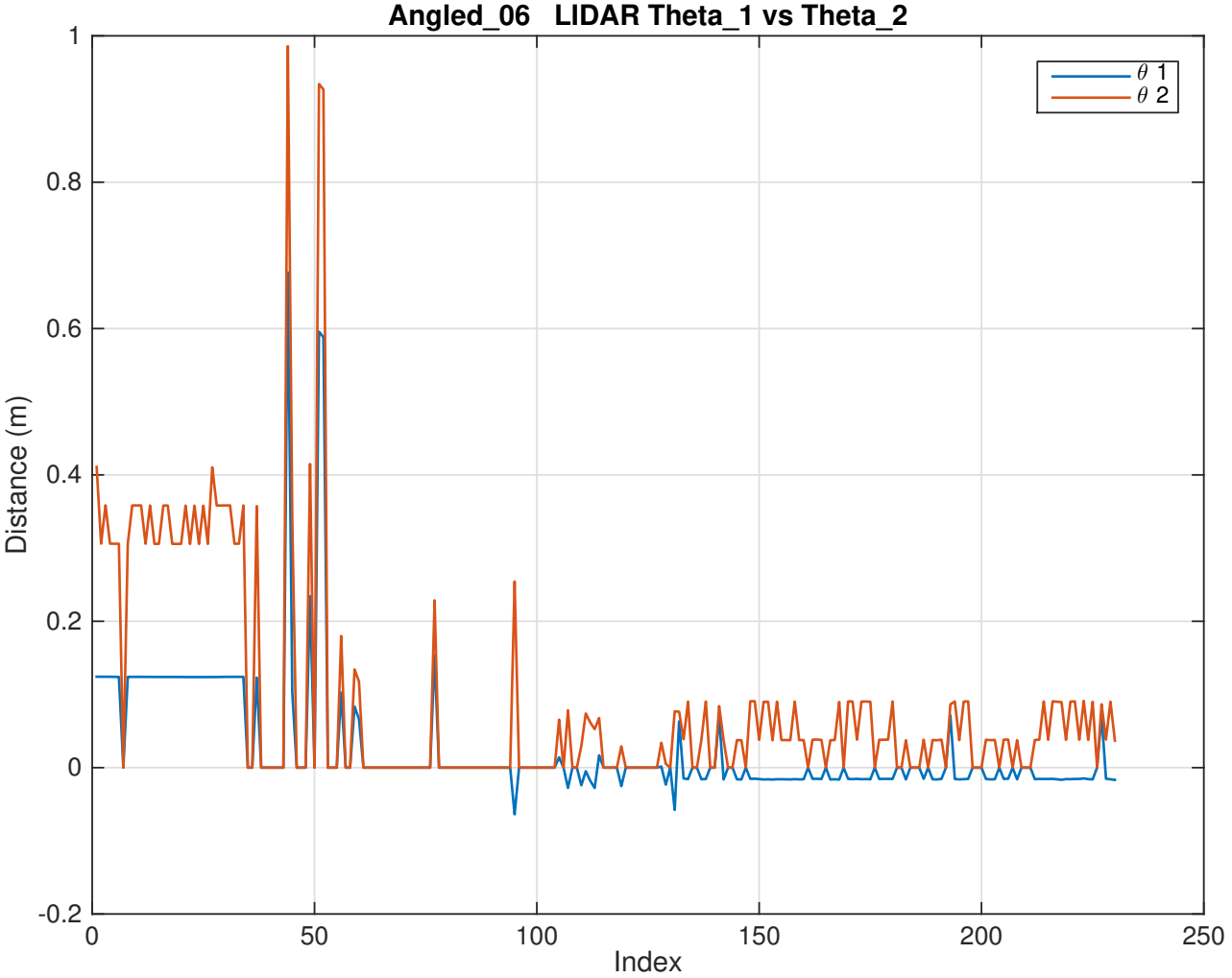
Number_Of_Unique_Paths	King_Pin_Detected
114	false

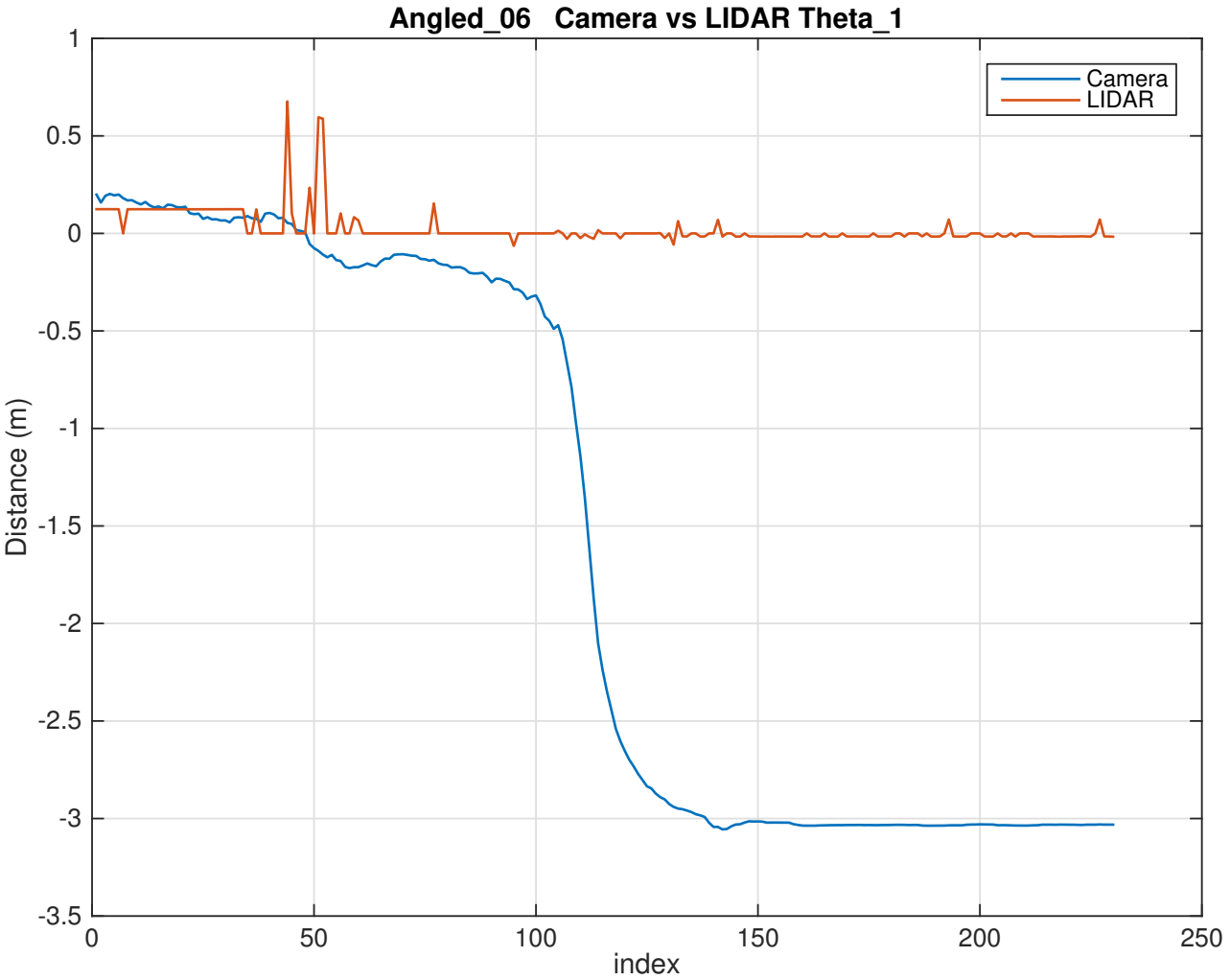

Angled_06 Left_Edge vs Right_Edge
Left_Edge
Right_Edge
L1 x 100
L2 x 100
Distance (m) & Pixel
Index
1100
1000
900
800
700
600
500
400
300
200
0
50
100
150
200
250

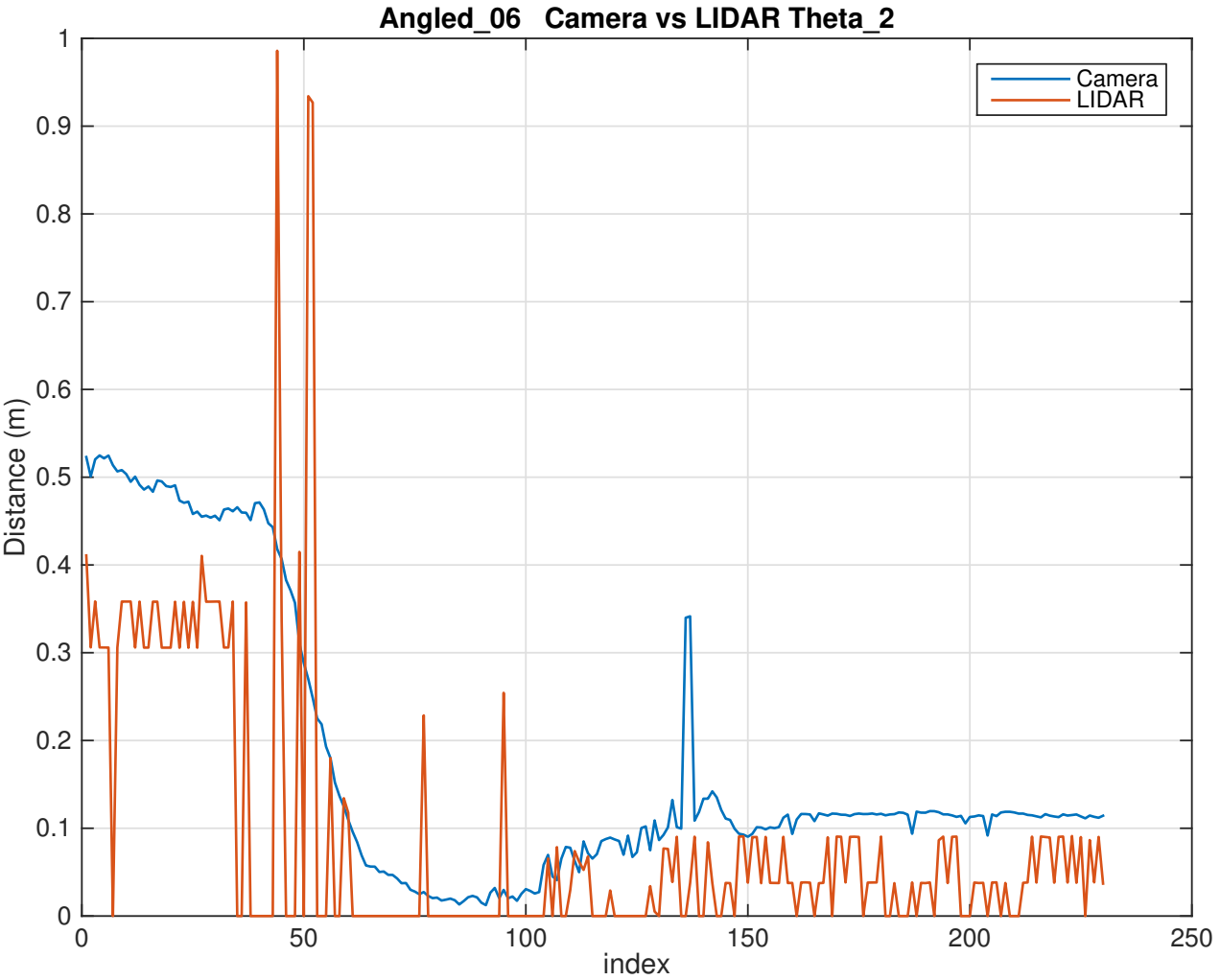

Angled_06 LIDAR Distance vs Camera Center Distance
Upper LIDAR Distance
Center_Dist
Distance (m)
Index
0
2
4
6
8
10
12
14
0
50
100
150
200
250

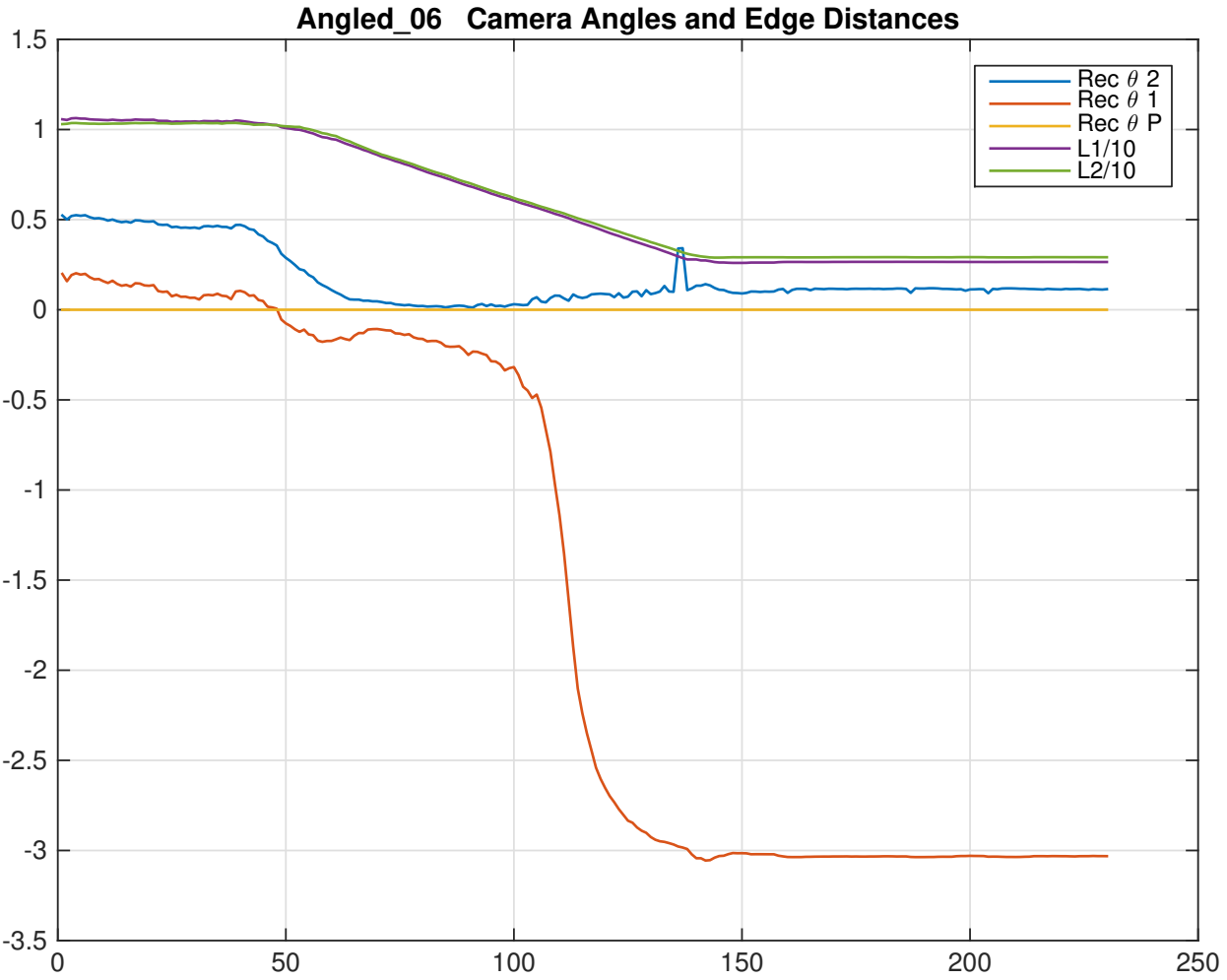

Angled_06 Camera L1 vs L2
L1
L2
Distance (m)
Index
11
10
9
8
7
6
5
4
3
2
0
50
100
150
200
250

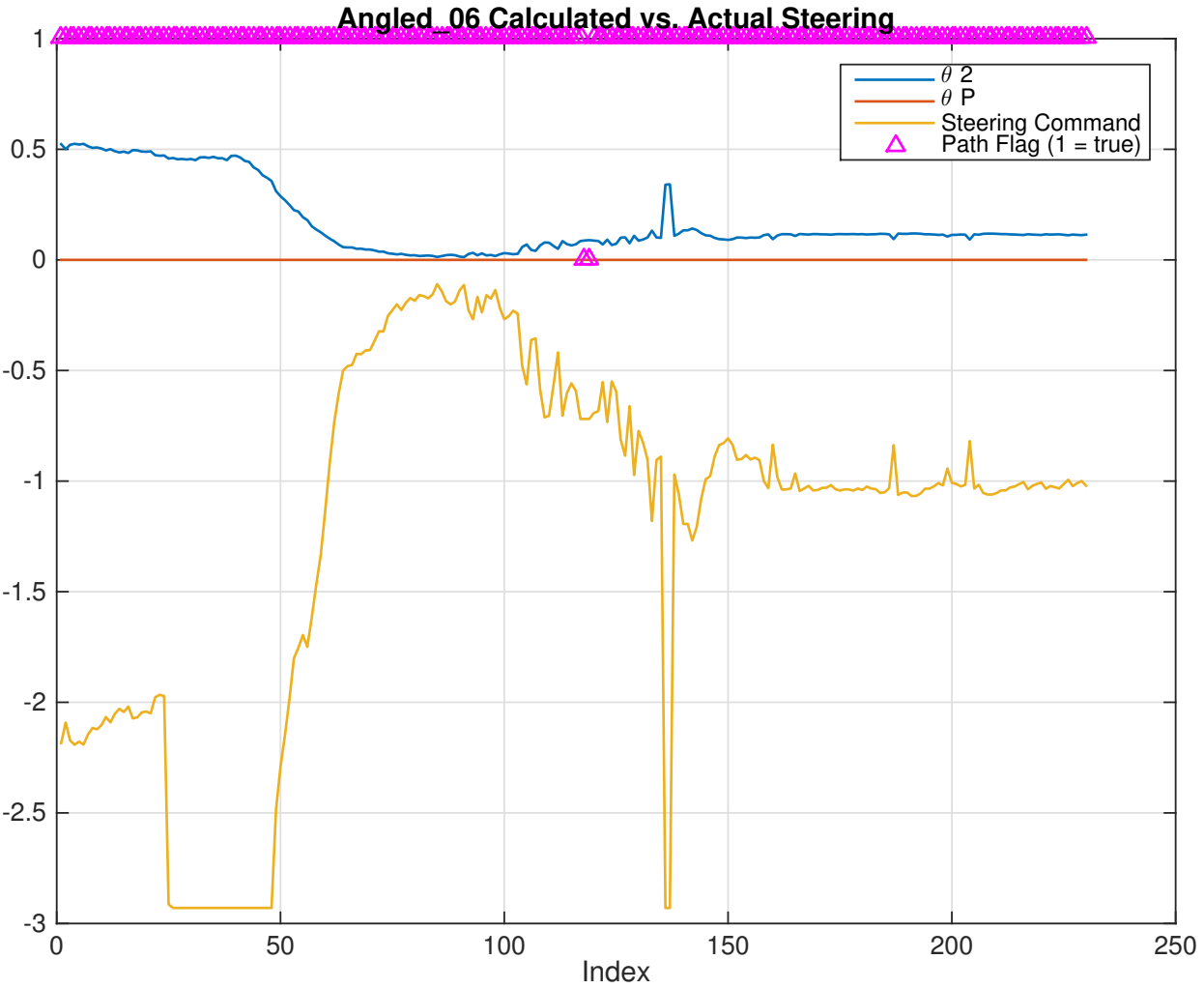

Angled_06 Camera Theta_1 vs Theta_2
θ 1
θ 2
Distance (m)
index
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
-3
-3.5
0
50
100
150
200
250


Angled_06 LIDAR Theta_1 vs Theta_2
θ 1
θ 2
Distance (m)
Index
1
0.8
0.6
0.4
0.2
0
-0.2
0
50
100
150
200
250


Angled_06 Camera vs LIDAR Theta_1
Camera
LIDAR
Distance (m)
index
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
-3
-3.5
0
50
100
150
200
250


Angled_06 Camera vs LIDAR Theta_2
Camera
LIDAR
Distance (m)
index
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
0
50
100
150
200
250


Angled_06 Camera Angles and Edge Distances
Rec θ 2
Rec θ 1
Rec θ P
L1/10
L2/10
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
-3
-3.5
0
50
100
150
200
250


Angled_06 Calculated vs. Actual Steering
θ 2
θ P
Steering Command
Path Flag (1 = true)
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
-3
0
50
100
150
200
250
Index