

one_stationary.R

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```
t1_gazebo <- read.csv("~/thesis/experiment_data/one_stationary/turtlebot1_gazebo_odometry_filtered.csv")
t1_continuous <- read.csv("~/thesis/experiment_data/one_stationary/turtlebot1_continuous_odometry_filtered.csv")
t1_discrete <- read.csv("~/thesis/experiment_data/one_stationary/turtlebot1_discrete_odometry_filtered.csv")
t1_external_count <- read.csv("~/thesis/experiment_data/one_stationary/turtlebot1_external_pose_count.csv")

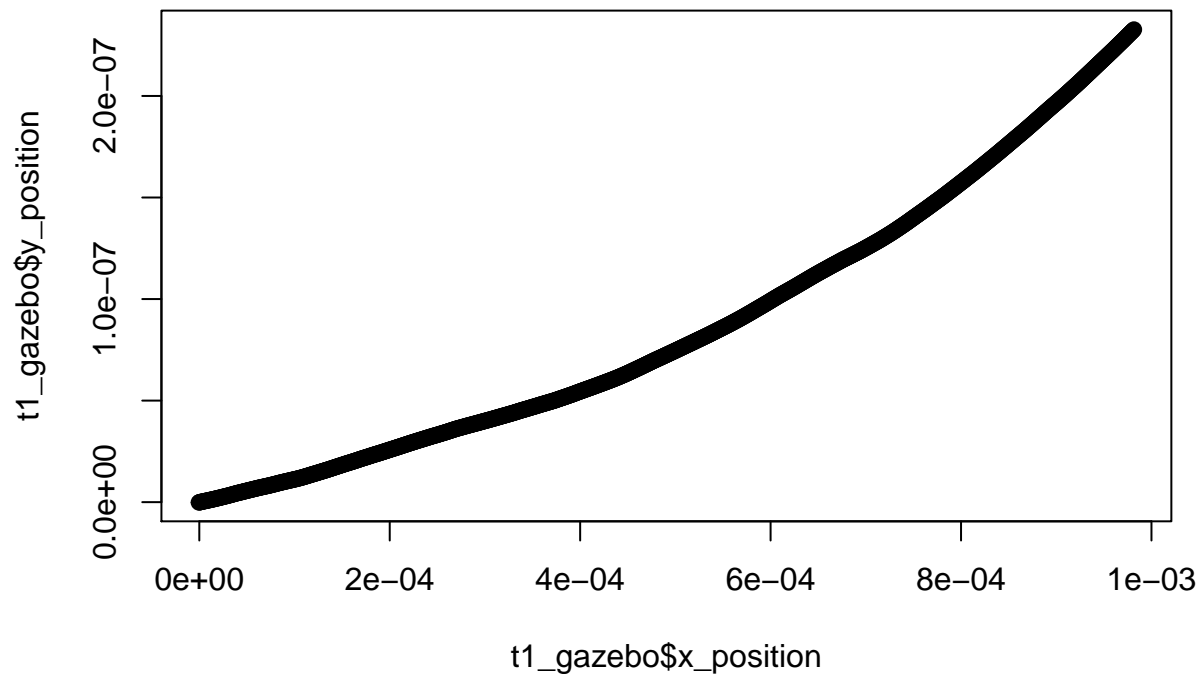
t1_gazebo$dist_from_origin <- sqrt(t1_gazebo$x_position ^ 2 + t1_gazebo$y_position ^ 2)

t1_discrete$x_error <- t1_gazebo$x_position - t1_discrete$x_position
t1_discrete$y_error <- t1_gazebo$y_position - t1_discrete$y_position
t1_discrete$dist_error <- sqrt(t1_discrete$x_error ^ 2 + t1_discrete$y_error ^ 2)

t1_continuous$x_error <- t1_gazebo$x_position - t1_continuous$x_position
t1_continuous$y_error <- t1_gazebo$y_position - t1_continuous$y_position
t1_continuous$dist_error <- sqrt(t1_continuous$x_error ^ 2 + t1_continuous$y_error ^ 2)

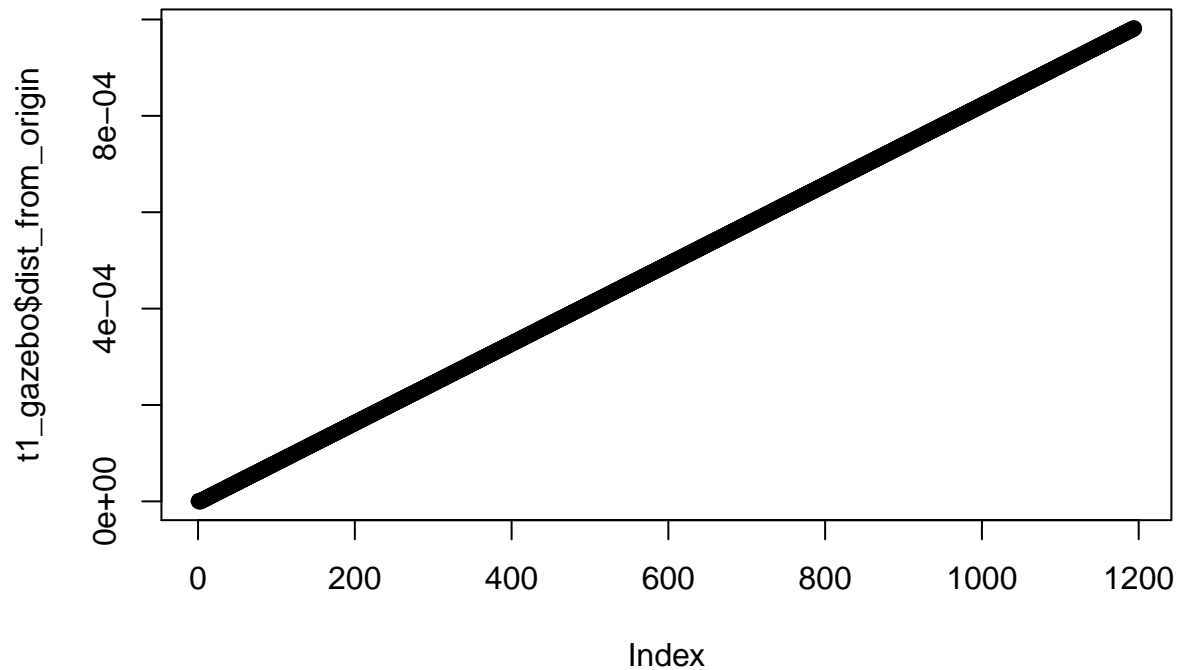
plot(t1_gazebo$x_position, t1_gazebo$y_position)
title("Ground truth visited locations of robot")
```

Ground truth visited locations of robot



```
plot(t1_gazebo$dist_from_origin)
title("Distance from origin vs. time")
```

Distance from origin vs. time



```
summary(t1_continuous$x_error)
```

```
##      Min.    1st Qu.    Median      Mean   3rd Qu.      Max.
## -4.851e-07  2.445e-04  4.902e-04  4.902e-04  7.359e-04  9.816e-04
```

```
summary(t1_continuous$y_error)
```

```
##      Min.    1st Qu.    Median      Mean   3rd Qu.      Max.
## -1.205e-10  3.243e-08  7.244e-08  8.738e-08  1.354e-07  2.327e-07
```

```
summary(t1_continuous$dist_error)
```

```
##      Min.    1st Qu.    Median      Mean   3rd Qu.      Max.
##  2.553e-07  2.445e-04  4.902e-04  4.902e-04  7.359e-04  9.816e-04
```

```
summary(t1_discrete$x_error)
```

```
##      Min.    1st Qu.    Median      Mean   3rd Qu.      Max.
## -4.851e-07  2.445e-04  4.902e-04  4.902e-04  7.359e-04  9.816e-04
```

```
summary(t1_discrete$y_error)
```

```
##      Min.    1st Qu.    Median      Mean   3rd Qu.      Max.
## -1.205e-10  3.243e-08  7.244e-08  8.738e-08  1.354e-07  2.327e-07
```

```
summary(t1_discrete$dist_error)
```

```
##      Min.    1st Qu.    Median      Mean   3rd Qu.      Max.
##  2.553e-07  2.445e-04  4.902e-04  4.902e-04  7.359e-04  9.816e-04
```