

two_stationary Turtlebot 1 Report

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This is a summary of the data from the two_stationary experiment, Turtlebot #1.

The runtime of this experiment was 3 hours, 0 minutes, and 0 seconds.

The total number of external pose measurements received by the robot during this time was 89714 which means poses were received at an average of 8.3068519 poses per second.

Shown below is the summary of each filter's error for both x and y coordinates, and also the error in total distance.

```
summary(continuous$x_error)
```

```
##      Min.    1st Qu.     Median      Mean    3rd Qu.      Max.
## -1.060e-06  2.224e-02  4.448e-02  4.448e-02  6.672e-02  8.895e-02
```

```
summary(continuous$y_error)
```

```
##      Min.    1st Qu.     Median      Mean    3rd Qu.      Max.
## -2.000e-10  7.671e-05  3.295e-04  4.440e-04  7.536e-04  1.347e-03
```

```
summary(continuous$dist_error)
```

```
##      Min.    1st Qu.     Median      Mean    3rd Qu.      Max.
## 1.200e-07  2.224e-02  4.448e-02  4.448e-02  6.672e-02  8.896e-02
```

```
summary(discrete$x_error)
```

```
##      Min.    1st Qu.     Median      Mean    3rd Qu.      Max.
## -0.043500 -0.017170  0.007227  0.007205  0.032470  0.060420
```

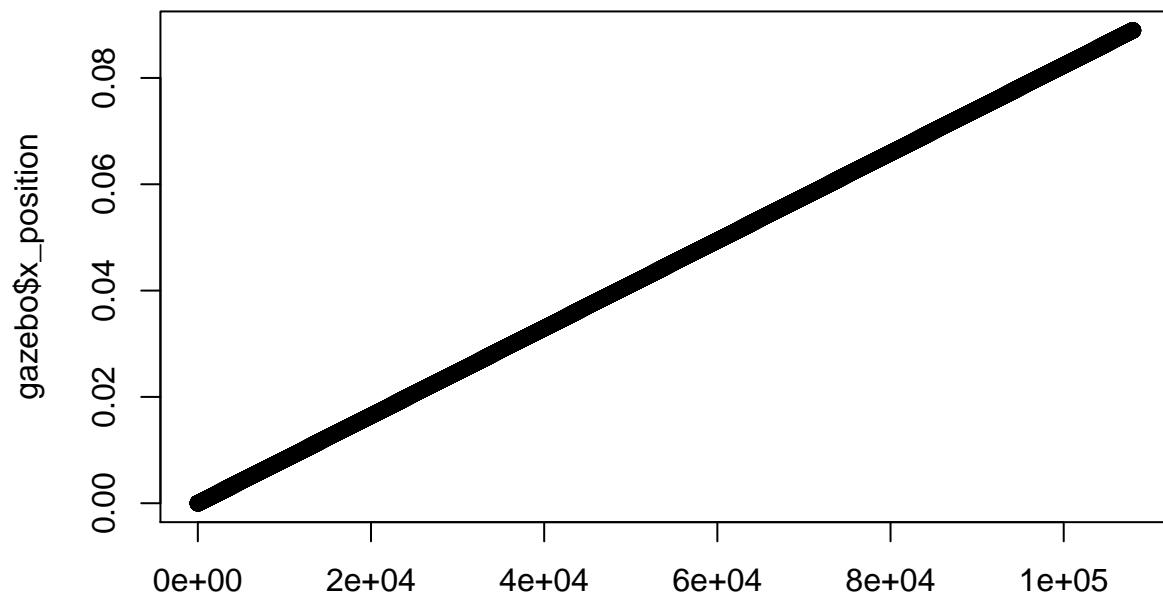
```
summary(discrete$y_error)
```

```
##      Min.    1st Qu.     Median      Mean    3rd Qu.      Max.
## -4.607e-05  5.300e-03  1.058e-02  1.052e-02  1.578e-02  2.157e-02
```

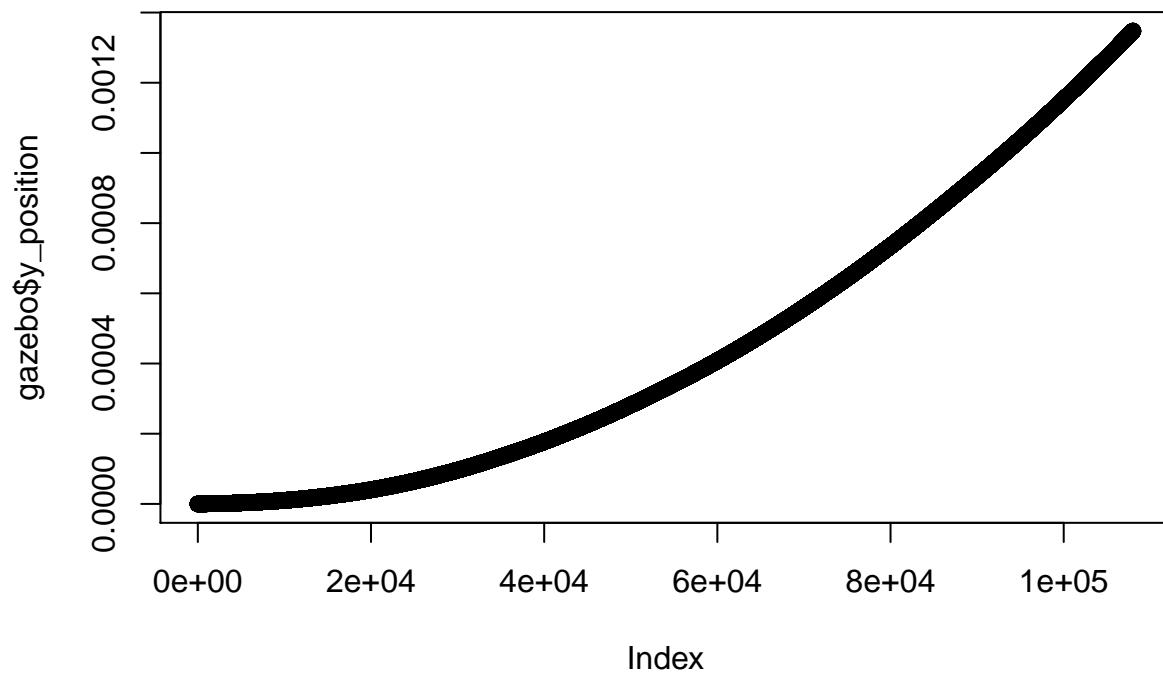
```
summary(discrete$dist_error)
```

```
##      Min.    1st Qu.     Median      Mean    3rd Qu.      Max.
## 1.200e-07  1.778e-02  2.909e-02  3.017e-02  4.088e-02  6.042e-02
```

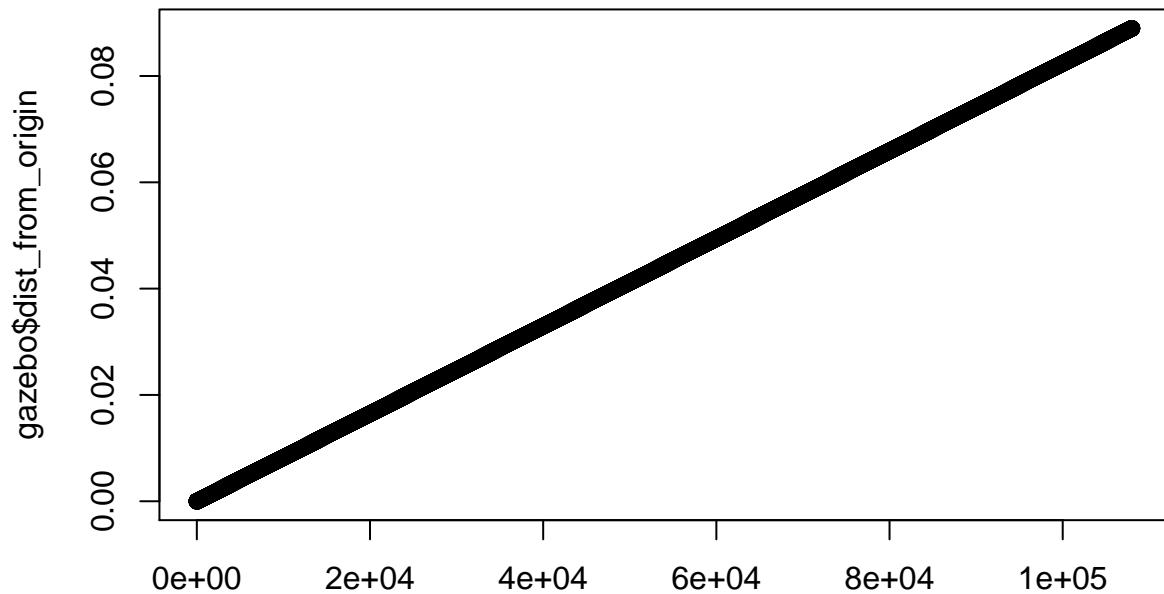
X coordinate of robot over time



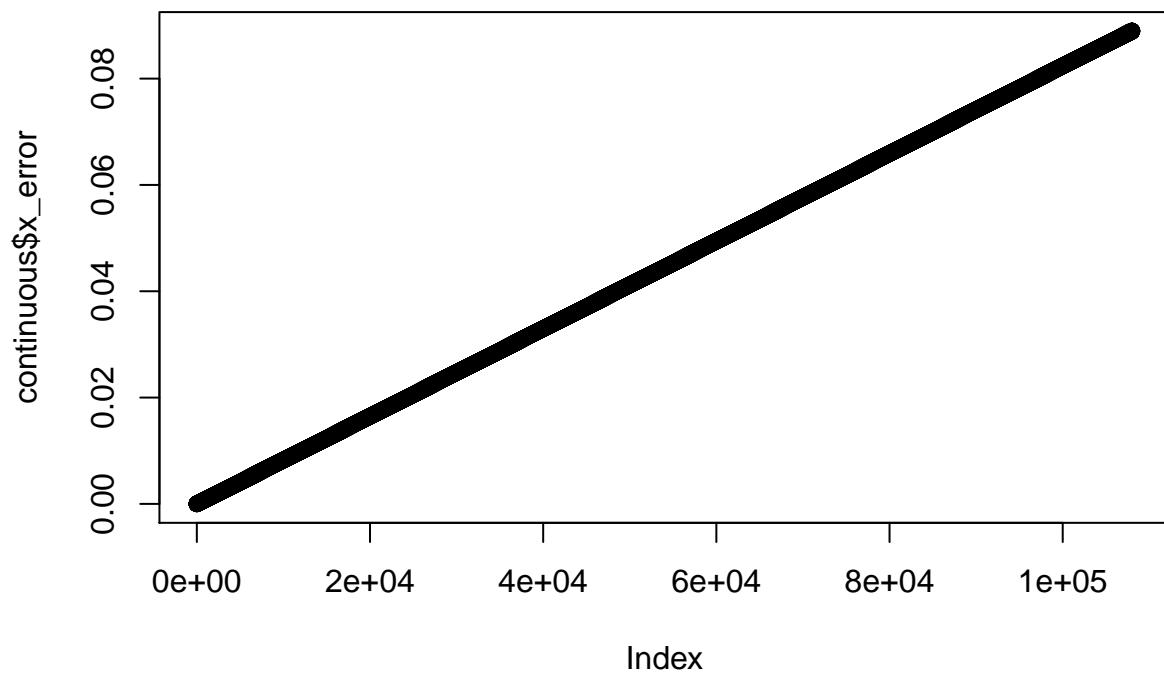
Y coordinate of robot over time



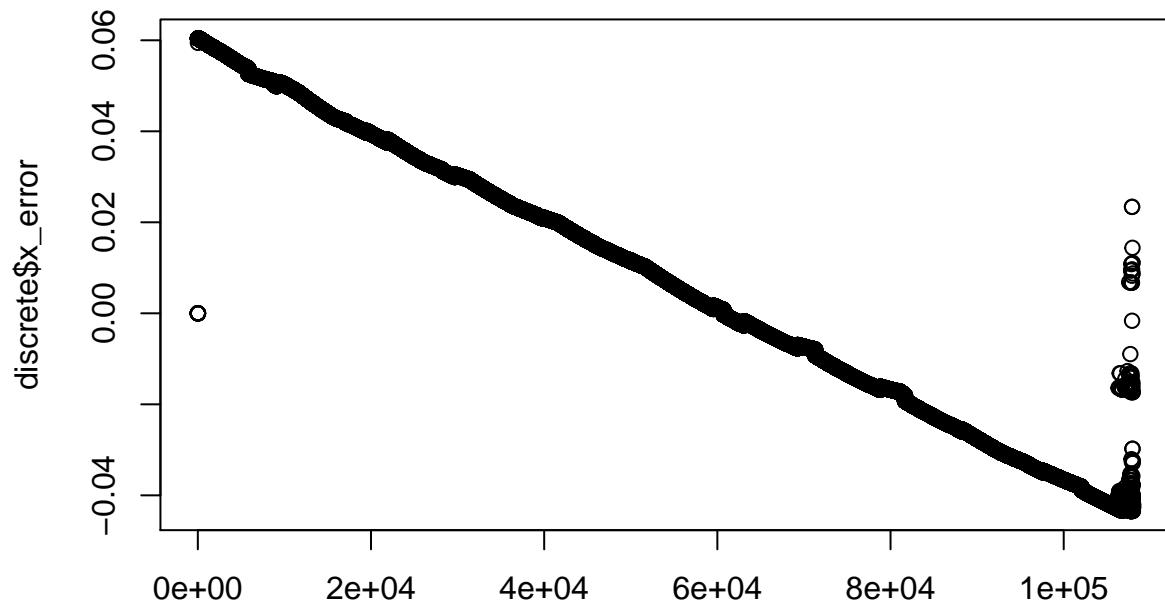
Distance from origin vs. time



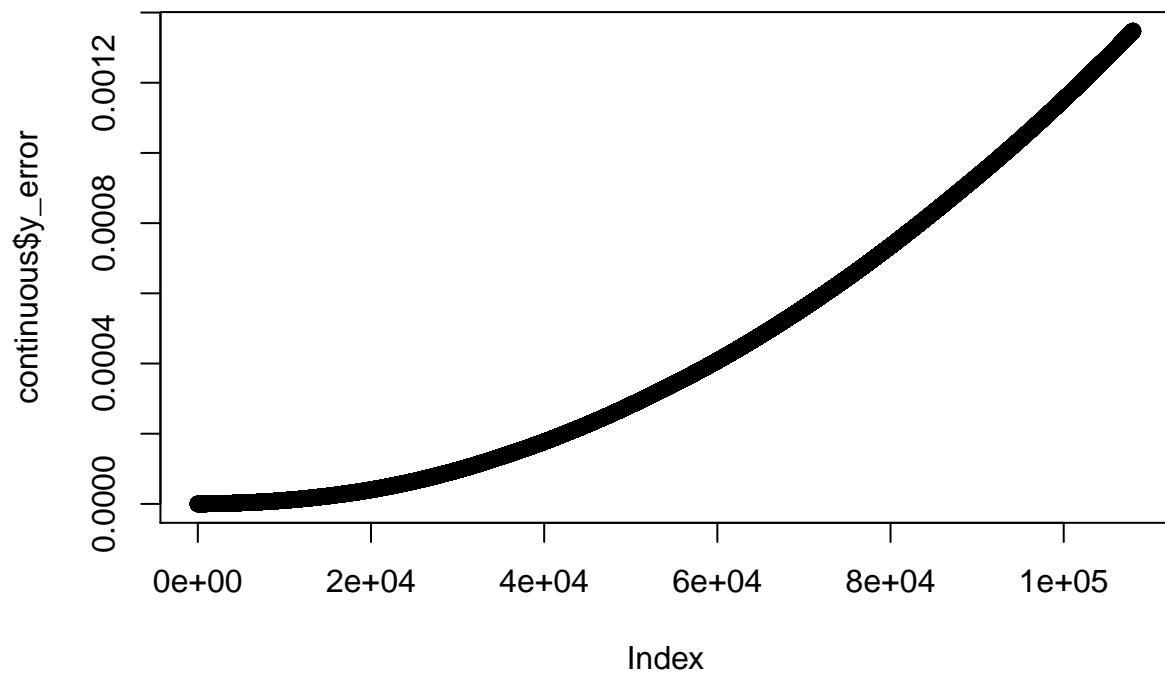
Continuous x_error over time



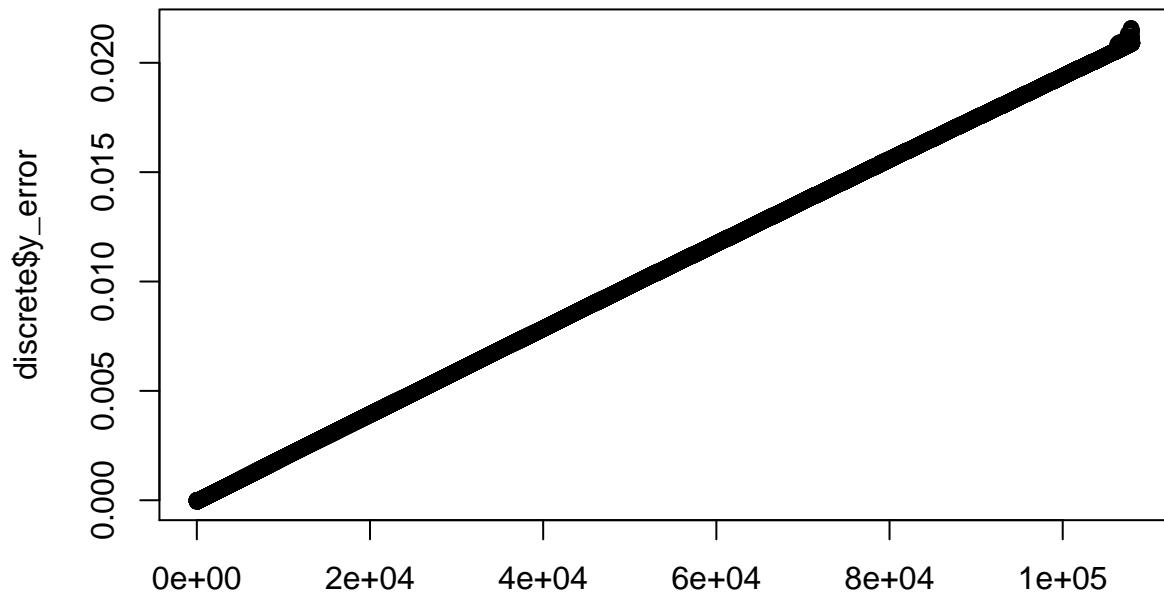
Discrete x_error over time



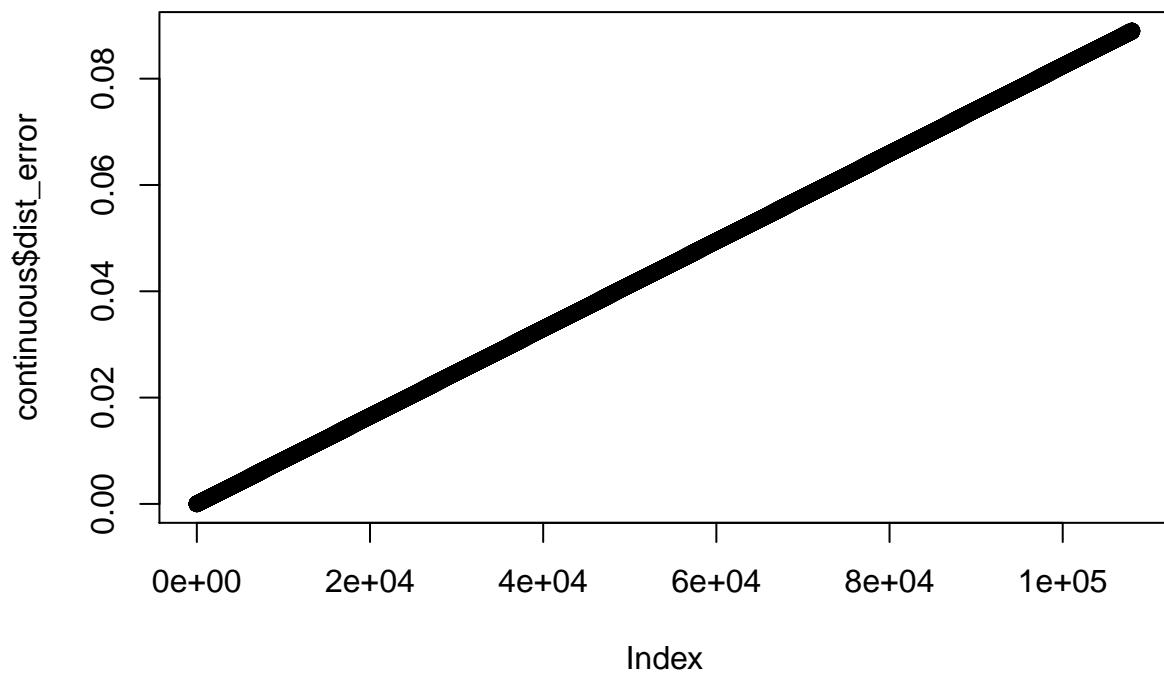
Continuous y_error over time



Discrete y_error over time



Continuous total distance error over time^{Index}



Discrete total distance error over time

