

# one\_mobile Turtlebot 1 Report

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*June 30, 2016*

```
## Loading required package: data.table
```

This is a summary of the data from the one\_mobile experiment, Turtlebot #1.

The runtime of this experiment was 3 hours, 0 minutes, and 0.2 seconds.

The total number of external pose measurements received by the robot during this time was 0 which means poses were received at an average of 0 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.  
## -0.18190 -0.01398  0.01151  0.03219  0.06360  0.36610
```

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

```
##      Min. 1st Qu. Median     Mean 3rd Qu.     Max.  
## -0.325700 -0.049300 -0.005186 -0.010960  0.021670  0.285800
```

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

```
##      Min. 1st Qu. Median     Mean 3rd Qu.     Max.  
## 0.00000 0.02945 0.06475 0.09741 0.15150 0.45200
```

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

```
##      Min. 1st Qu. Median     Mean 3rd Qu.     Max.  
## -0.153400 -0.007321  0.029930  0.051130  0.086720  0.393500
```

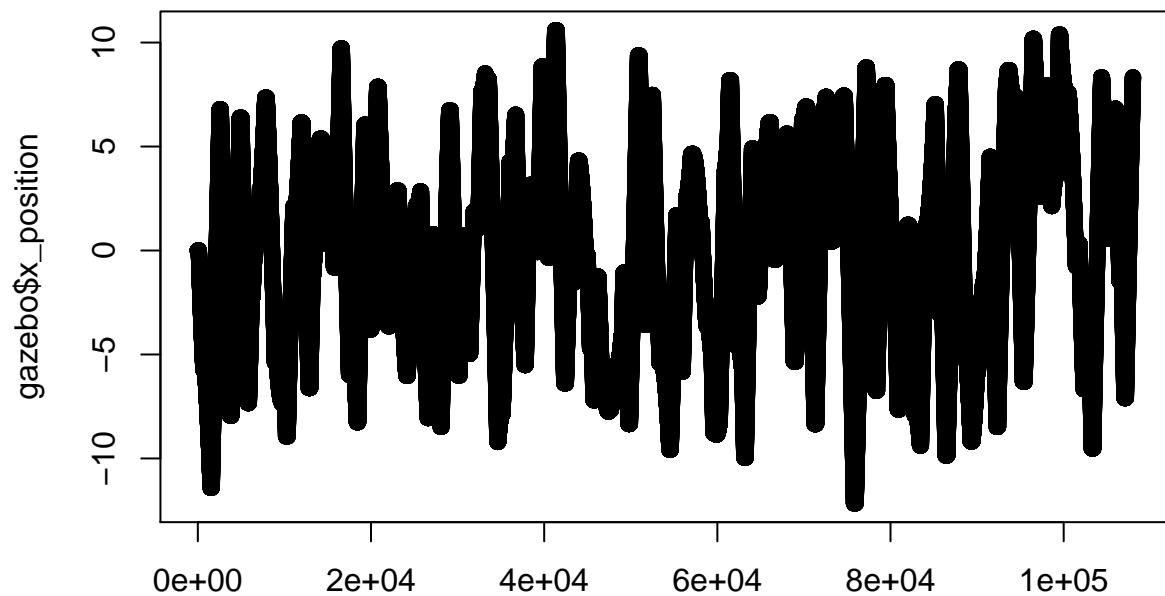
```
summary(discrete$y_error)
```

```
##      Min. 1st Qu. Median     Mean 3rd Qu.     Max.  
## -0.2968000 -0.0352500  0.0005471  0.0044850  0.0351300  0.3083000
```

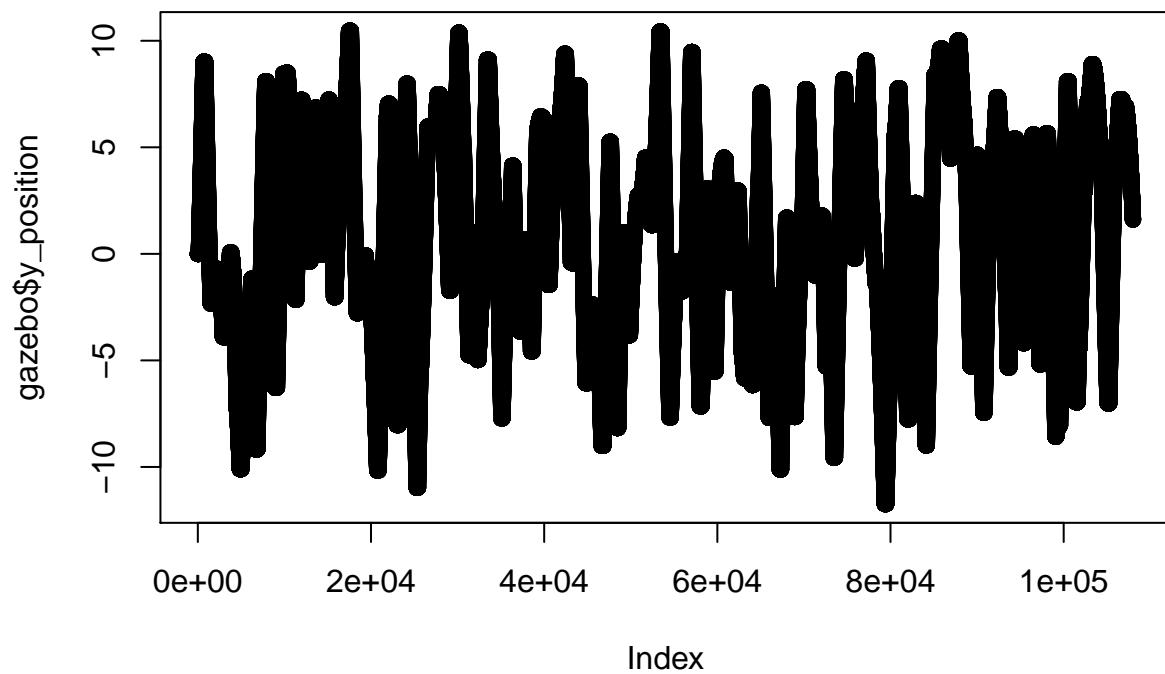
```
summary(discrete$dist_error)
```

```
##      Min. 1st Qu. Median     Mean 3rd Qu.     Max.  
## 0.00000 0.03360 0.07037 0.10390 0.16190 0.48880
```

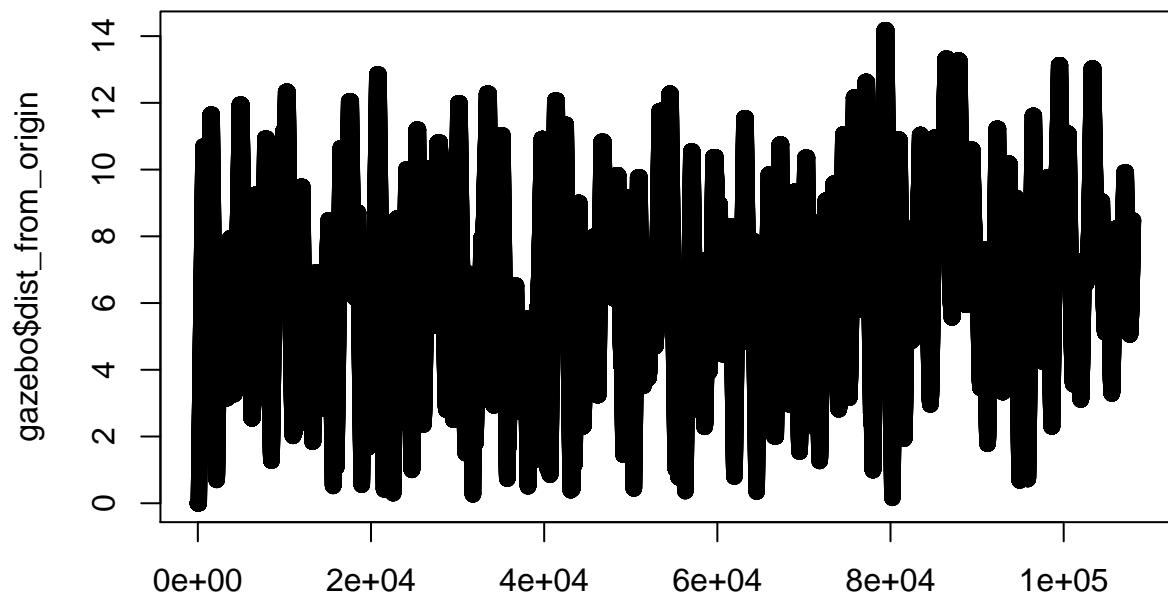
**X coordinate of robot over time**



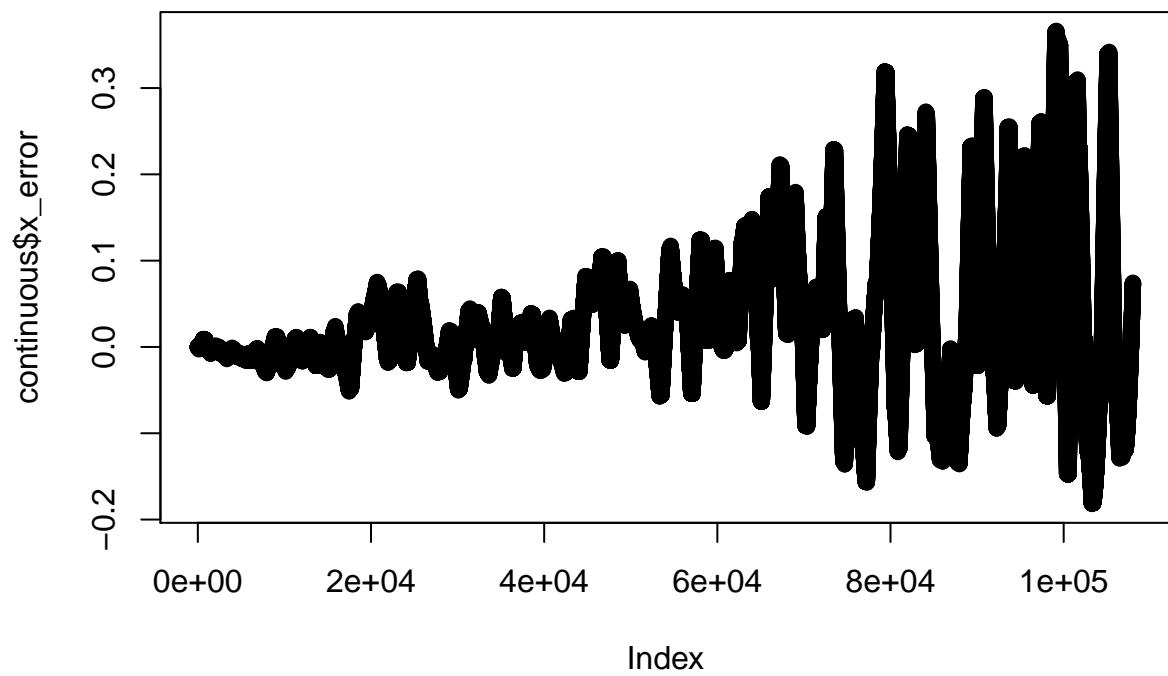
**Y coordinate of robot over time**



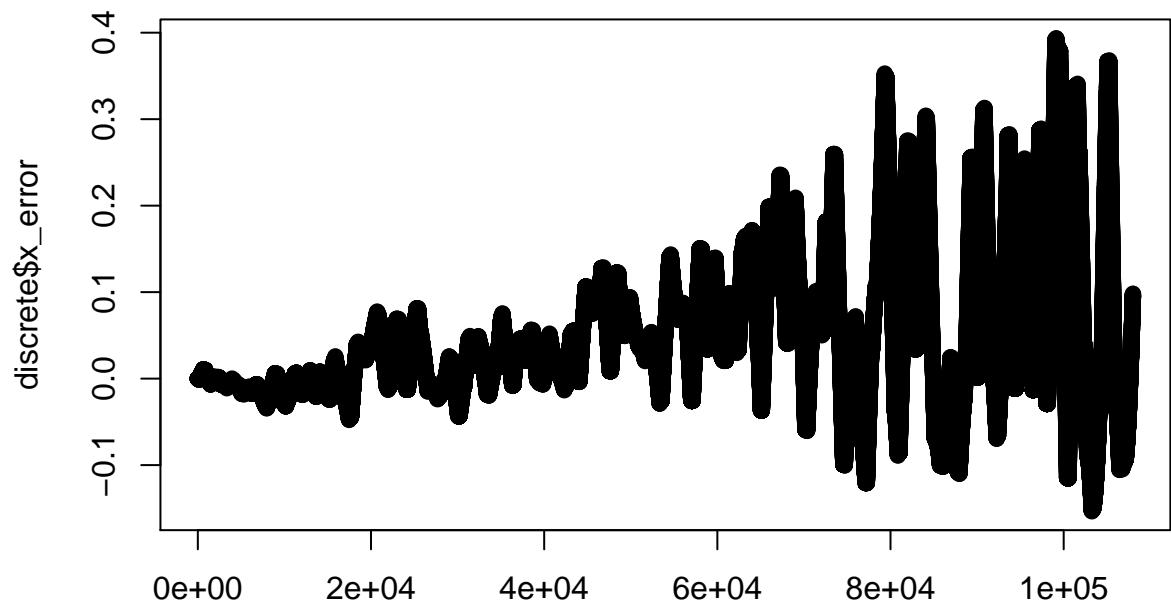
**Distance from origin vs. time**



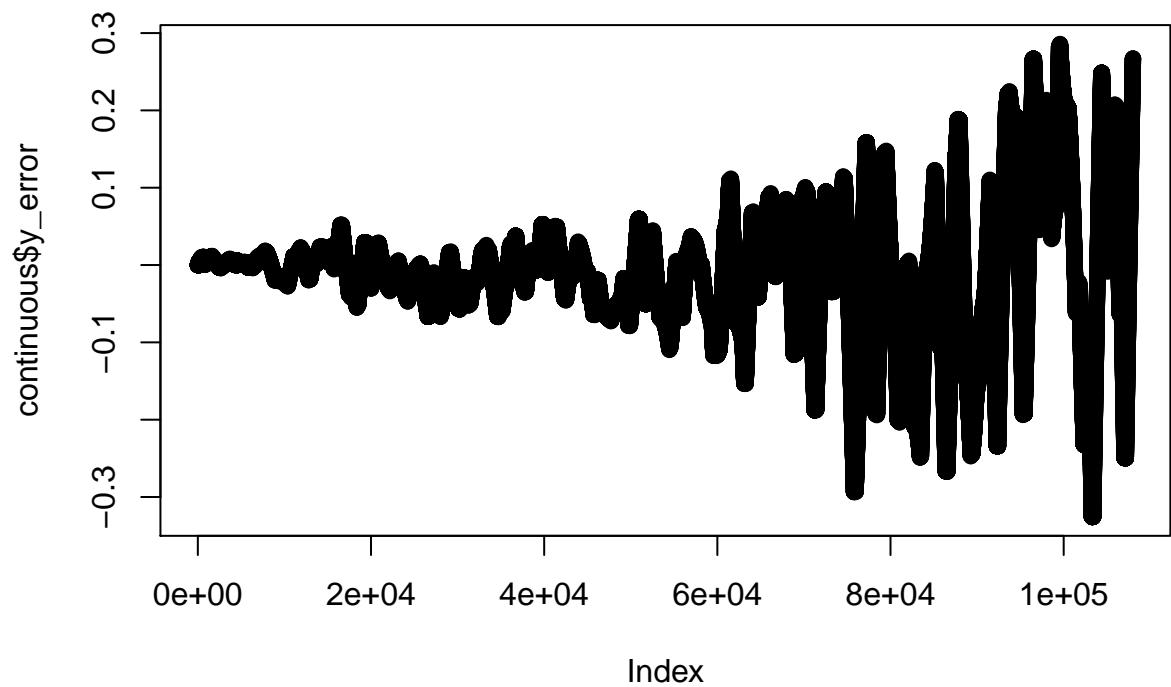
**Continuous x\_error over time**



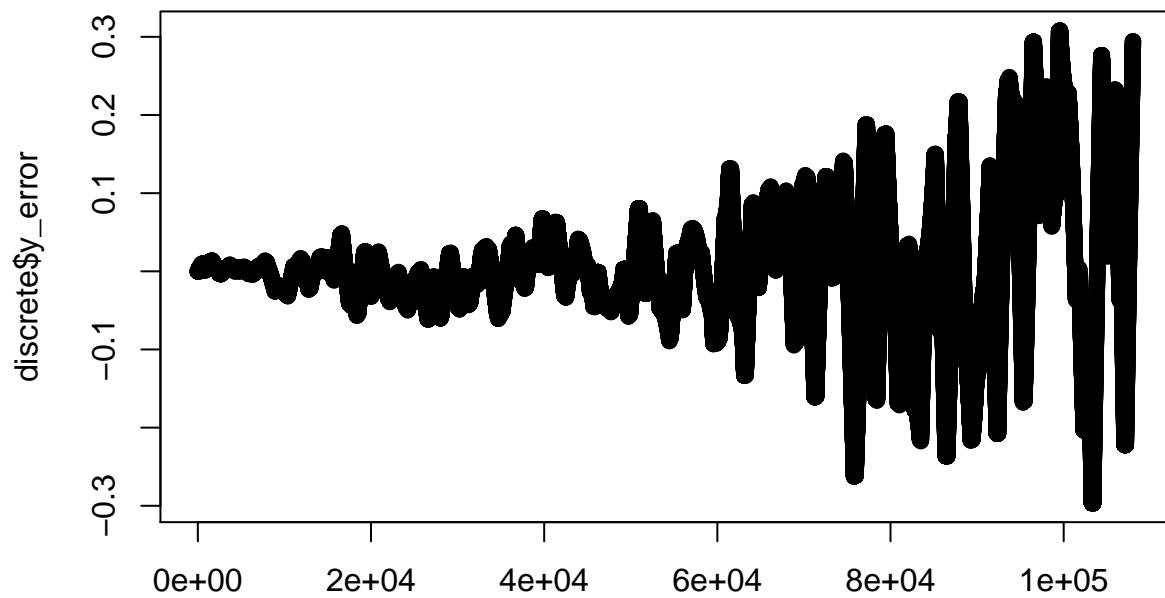
**Discrete x\_error over time**



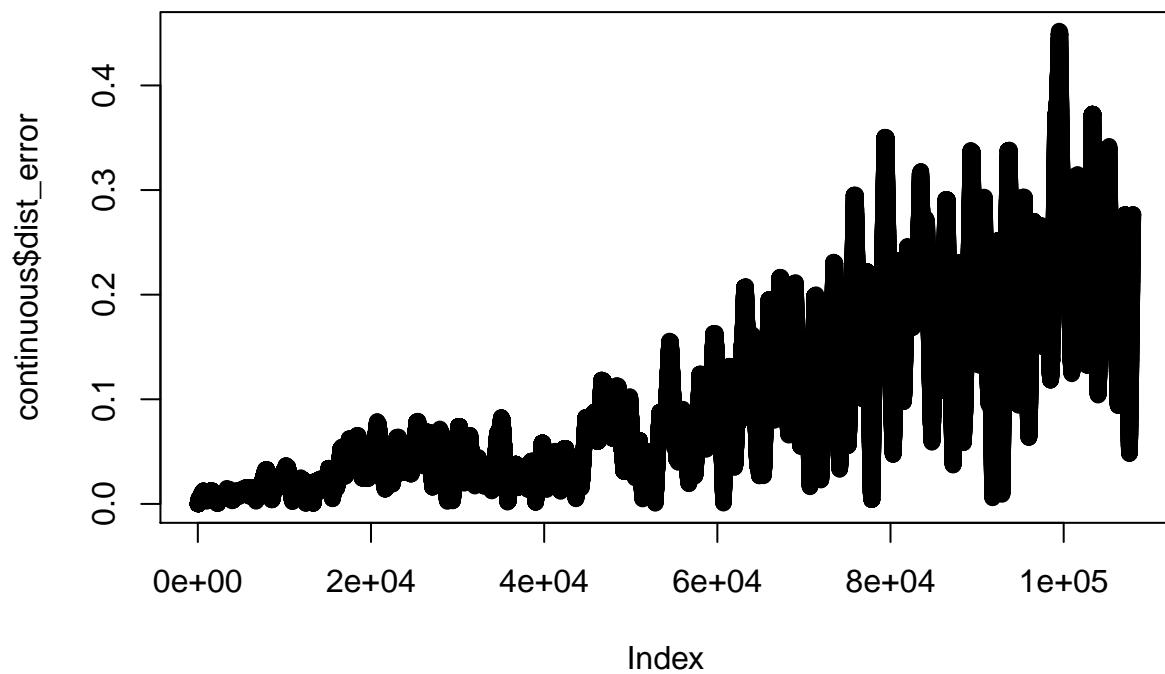
**Continuous y\_error over time**



**Discrete y\_error over time**



**Continuous total distance error over time**



### Discrete total distance error over time

