

# one\_mobile Turtlebot 1 Report

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```
## 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 0 hours, 19 minutes, and 59.5 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. 
## -0.0729800 -0.0193300 -0.0014010 -0.0008012  0.0103500  0.0756500
```

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

```
##      Min.   1st Qu.   Median   Mean   3rd Qu.   Max. 
## -0.344400 -0.314300 -0.285300 -0.198100 -0.005894  0.032740
```

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

```
##      Min.   1st Qu.   Median   Mean   3rd Qu.   Max. 
## 0.0000002 0.0339300 0.2860000 0.2089000 0.3145000 0.3451000
```

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

```
##      Min.   1st Qu.   Median   Mean   3rd Qu.   Max. 
## -0.0185600 -0.0004771  0.0042760  0.0070680  0.0095110  0.0369200
```

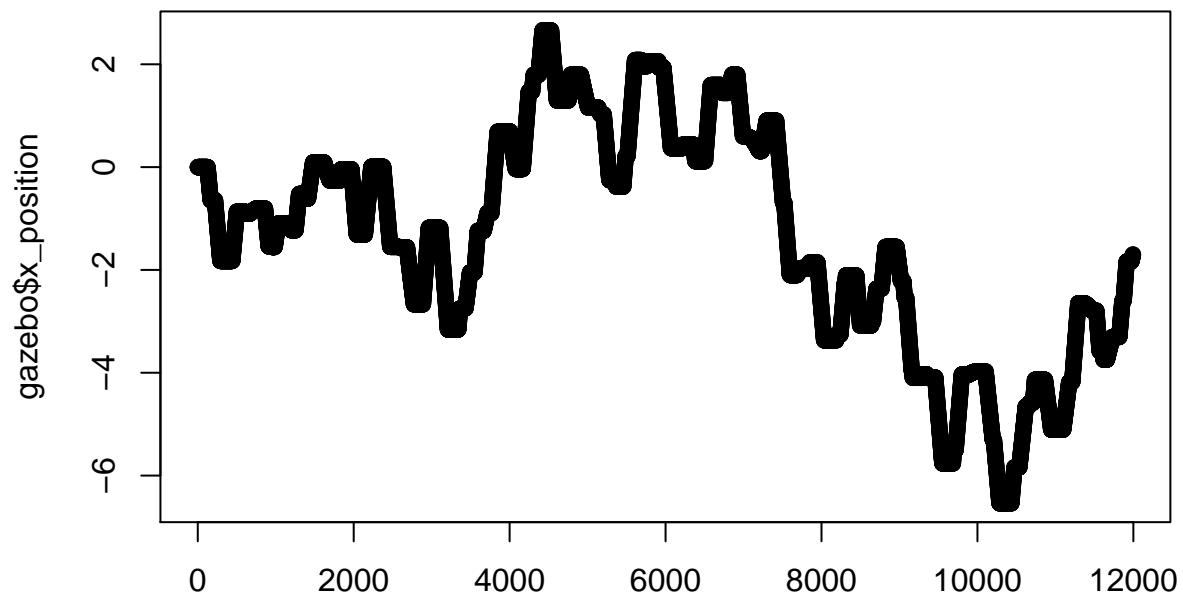
```
summary(discrete$y_error)
```

```
##      Min.   1st Qu.   Median   Mean   3rd Qu.   Max. 
## -2.554e-02 -6.486e-05  6.024e-03  5.344e-03  1.360e-02  2.153e-02
```

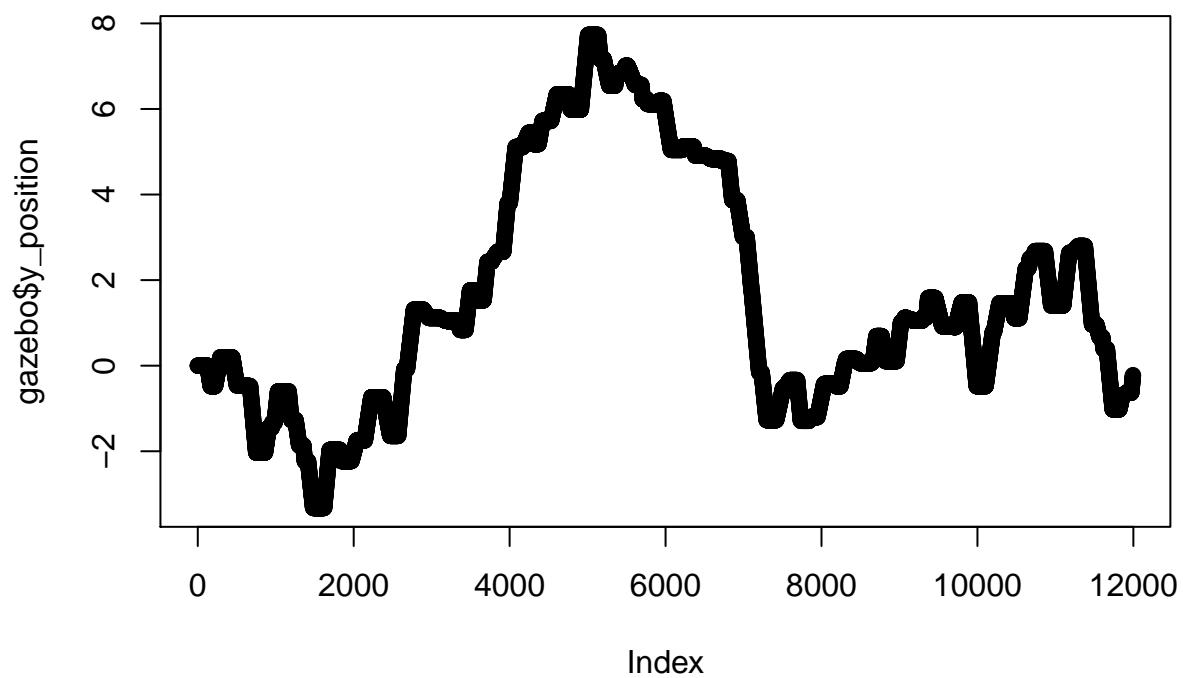
```
summary(discrete$dist_error)
```

```
##      Min.   1st Qu.   Median   Mean   3rd Qu.   Max. 
## 2.500e-07 7.753e-03 1.600e-02 1.549e-02 2.025e-02 3.701e-02
```

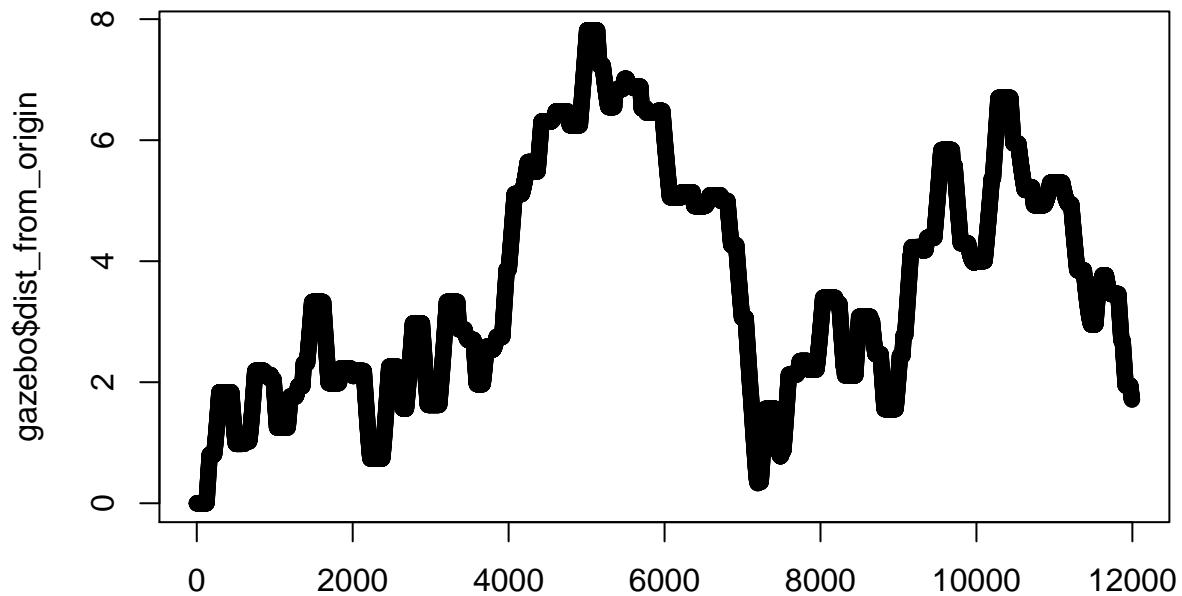
**X coordinate of robot over time**



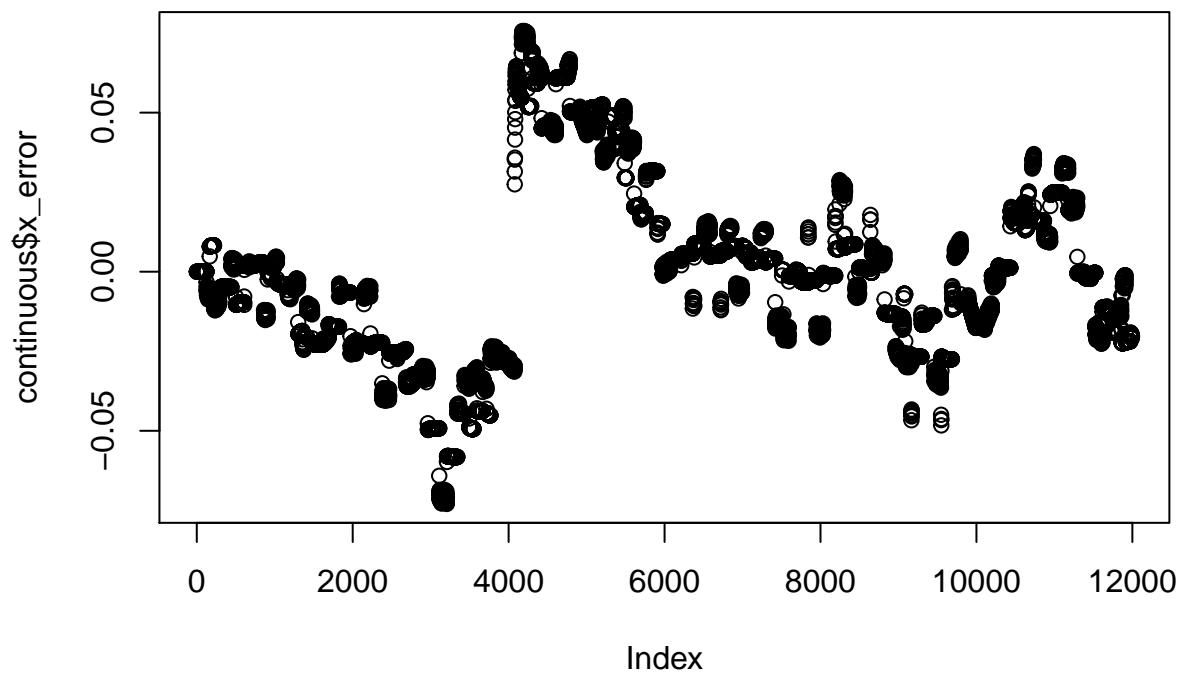
**Y coordinate of robot over time<sup>Index</sup>**



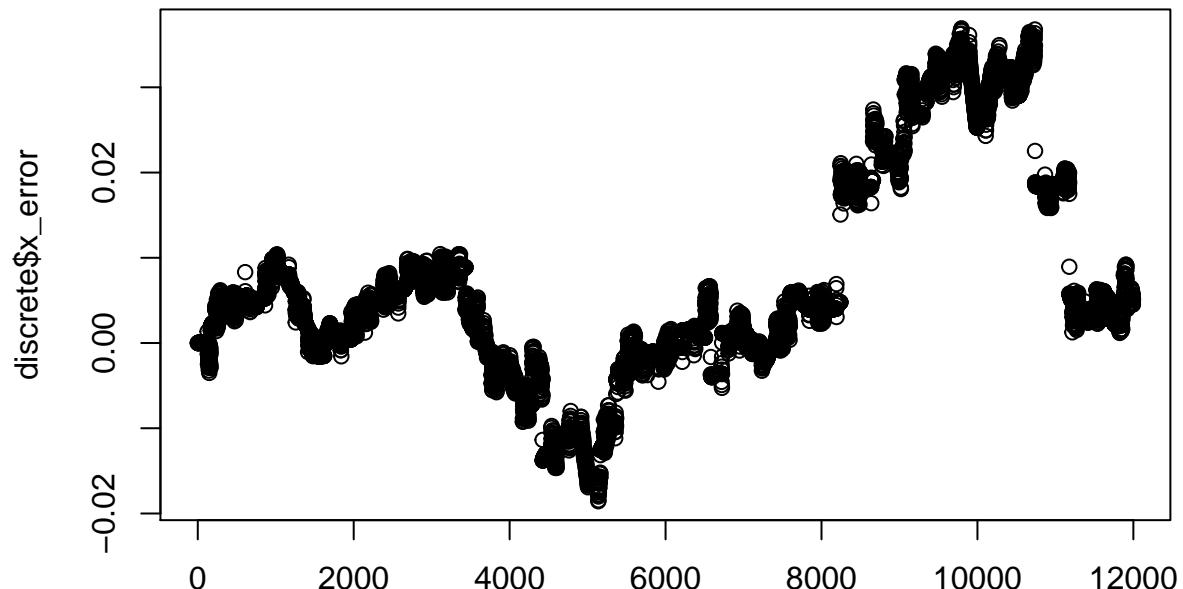
**Distance from origin vs. time**



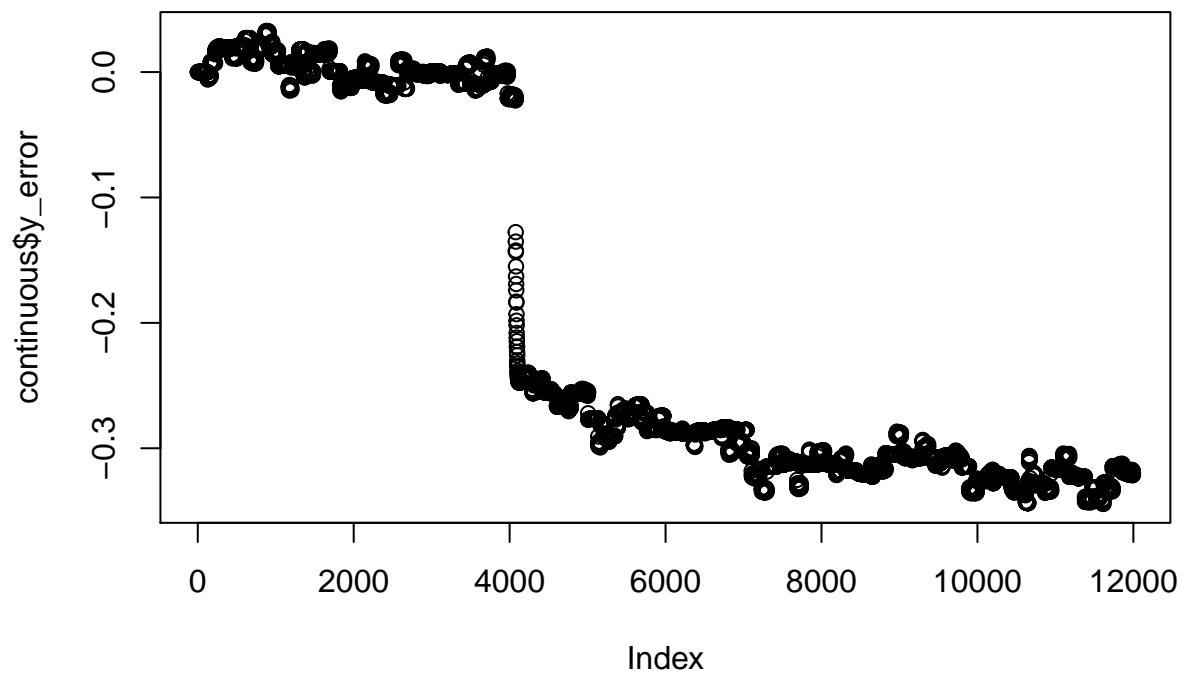
**Continuous x\_error over time**



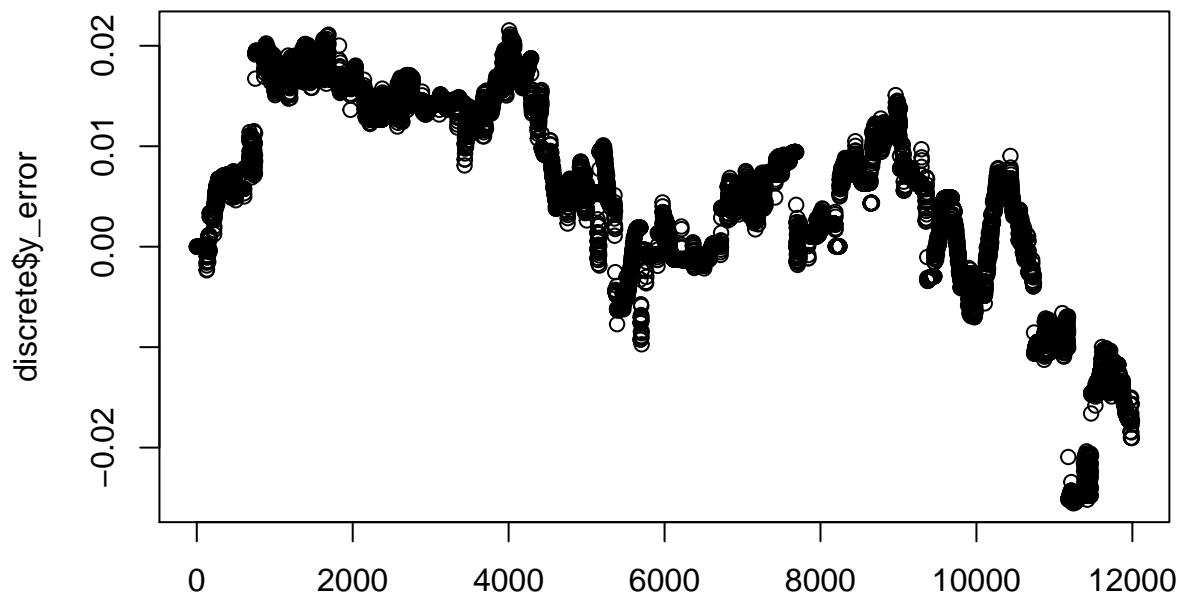
**Discrete x\_error over time**



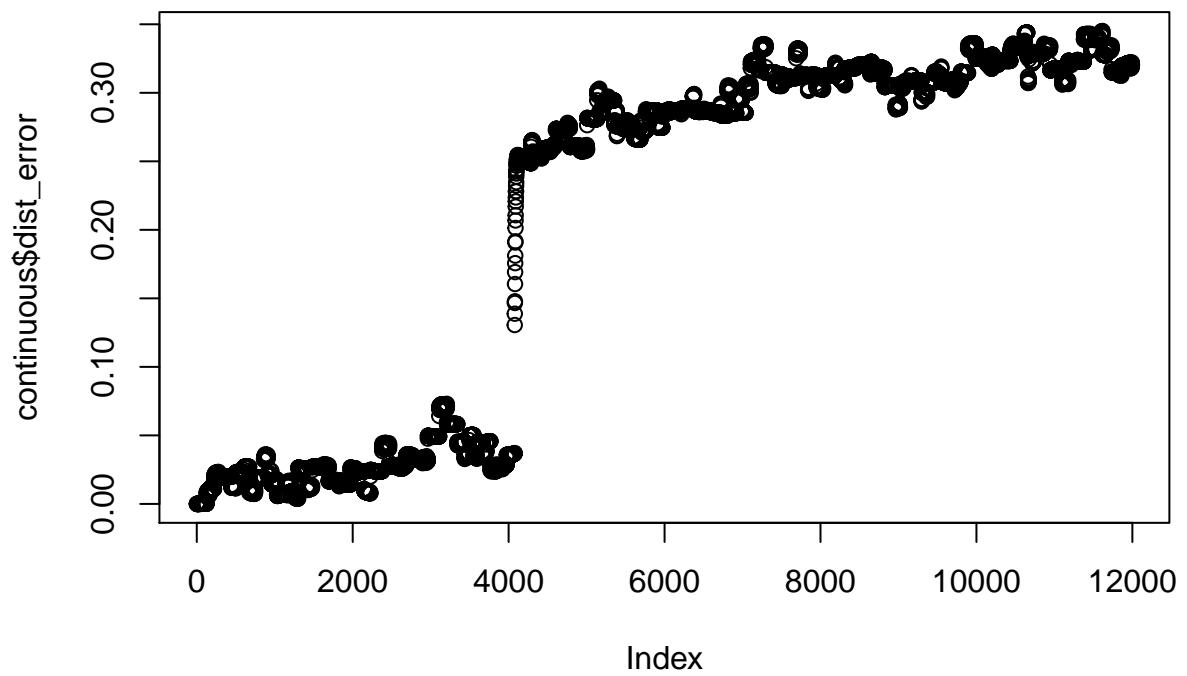
**Continuous y\_error over time**



**Discrete y\_error over time**



**Continuous total distance error over time<sup>Index</sup>**



### Discrete total distance error over time

