

two_mobile Turtlebot 2 Report

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This is a summary of the data from the two_mobile experiment, Turtlebot #2.

The runtime of this experiment was 2 hours, 59 minutes, and 58.9 seconds.

The total number of external pose measurements received by the robot during this time was 337 which means poses were received at an average of 0.0312069 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.  
## -13.690 -7.474 -2.087 -1.268  5.824 10.920
```

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

```
##      Min. 1st Qu. Median   Mean 3rd Qu.   Max.  
## -13.6900 -7.9150  0.7383 -0.2389  6.8180 13.3300
```

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

```
##      Min. 1st Qu. Median   Mean 3rd Qu.   Max.  
##    0.000  8.651 10.950 10.330 12.620 14.300
```

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

```
##      Min. 1st Qu. Median   Mean 3rd Qu.   Max.  
## -14.910 -8.681 -3.295 -2.464  4.625  9.716
```

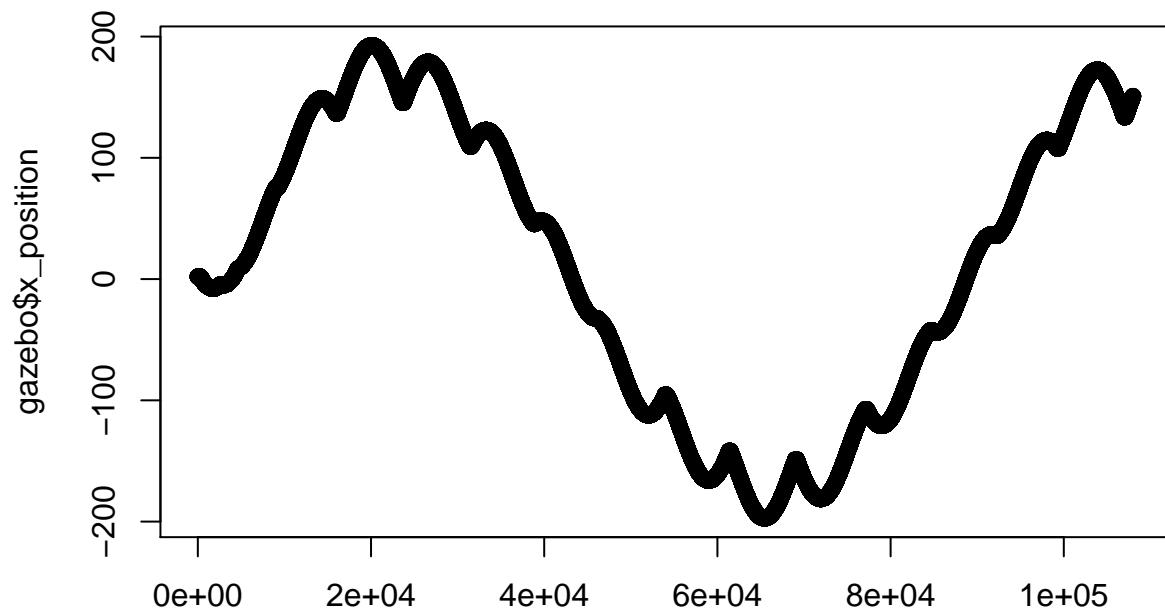
```
summary(discrete$y_error)
```

```
##      Min. 1st Qu. Median   Mean 3rd Qu.   Max.  
## -3.728  2.022 10.710  9.700 16.800 23.300
```

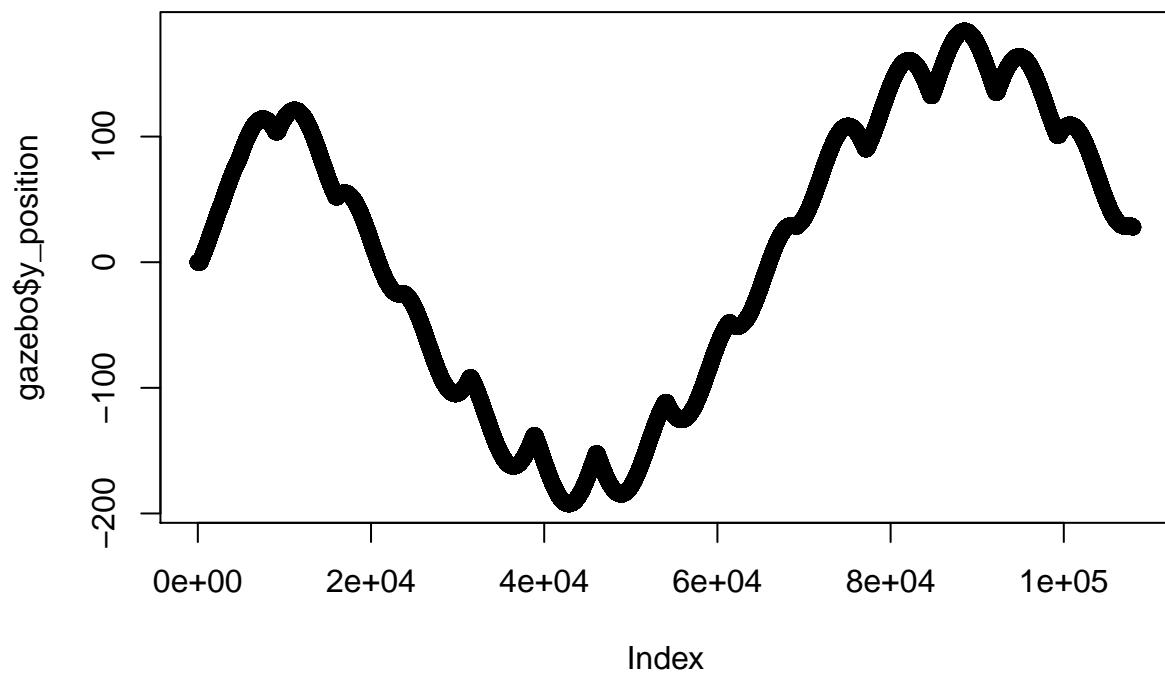
```
summary(discrete$dist_error)
```

```
##      Min. 1st Qu. Median   Mean 3rd Qu.   Max.  
##  0.2739  9.5650 14.1000 13.4200 17.9100 24.1100
```

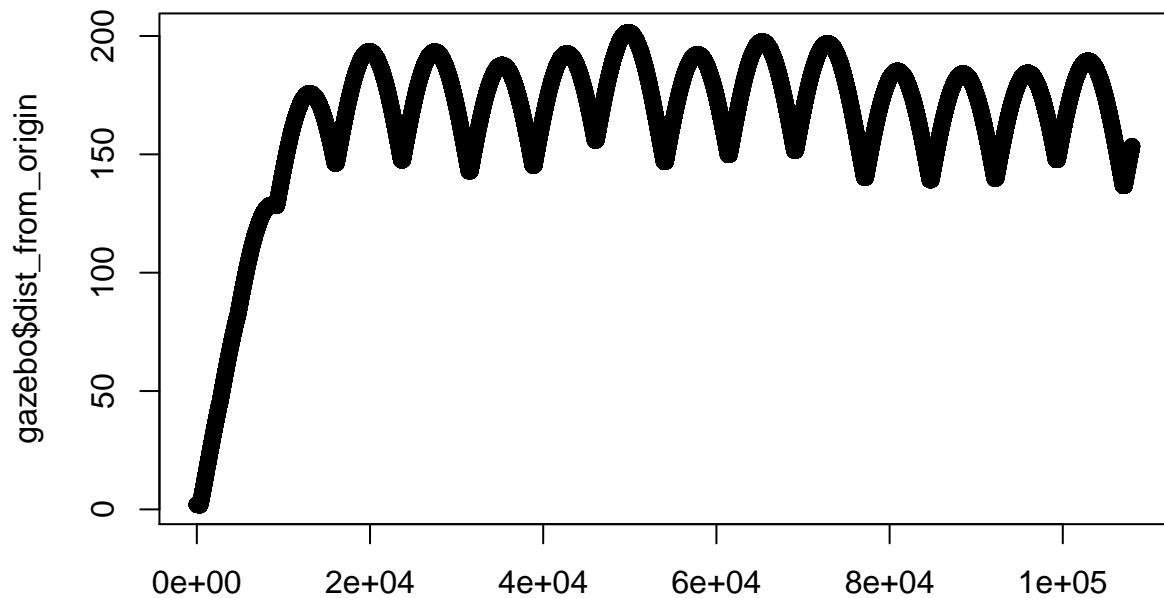
X coordinate of robot over time



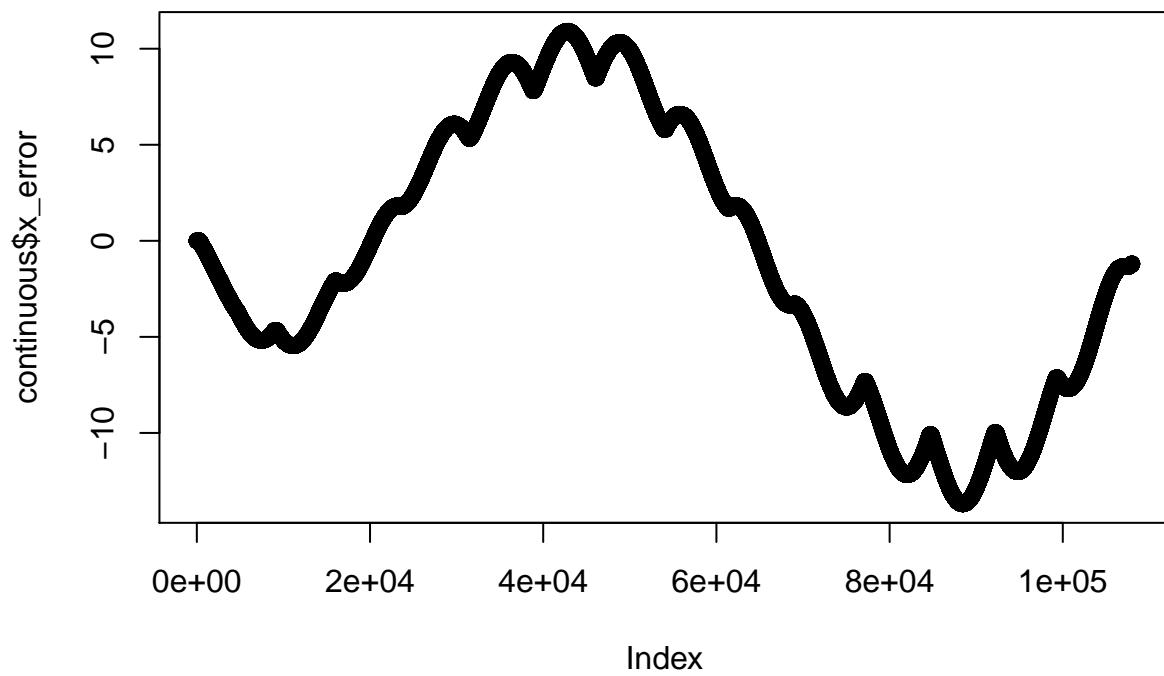
Y coordinate of robot over time



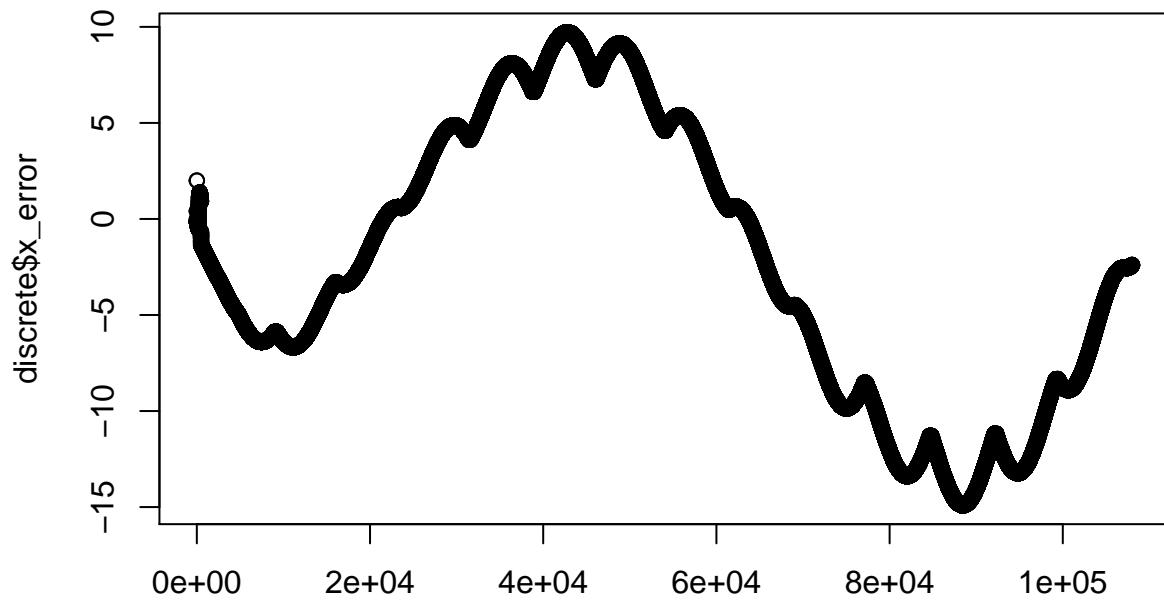
Distance from origin vs. time



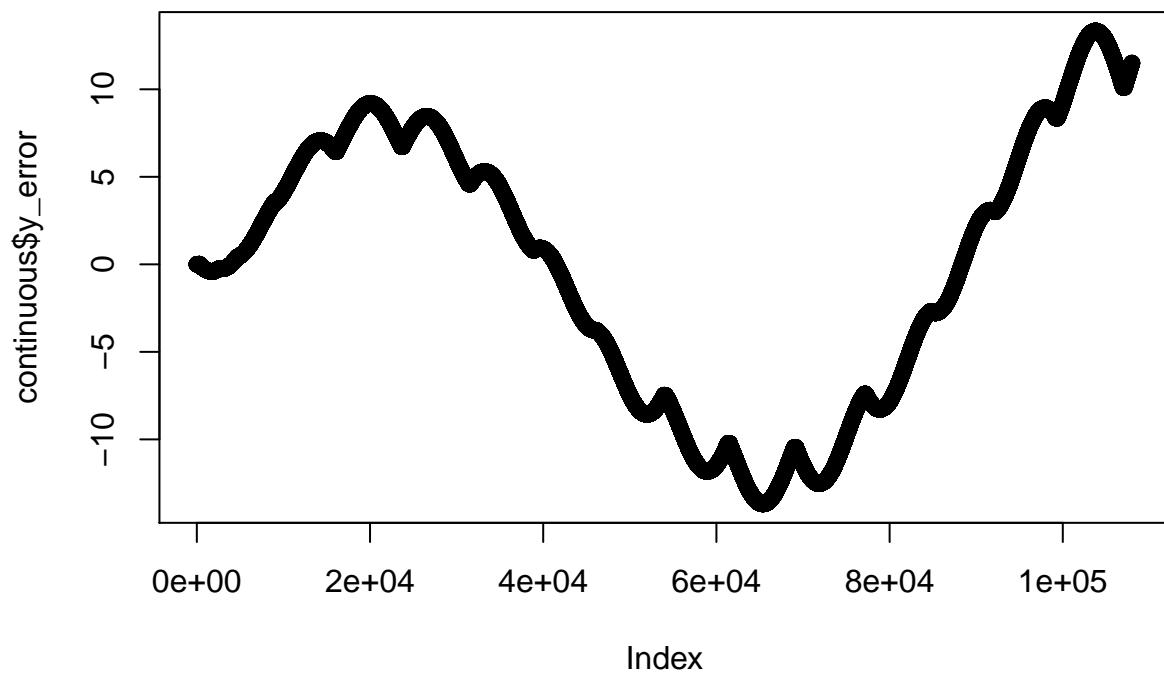
Continuous x_error over time



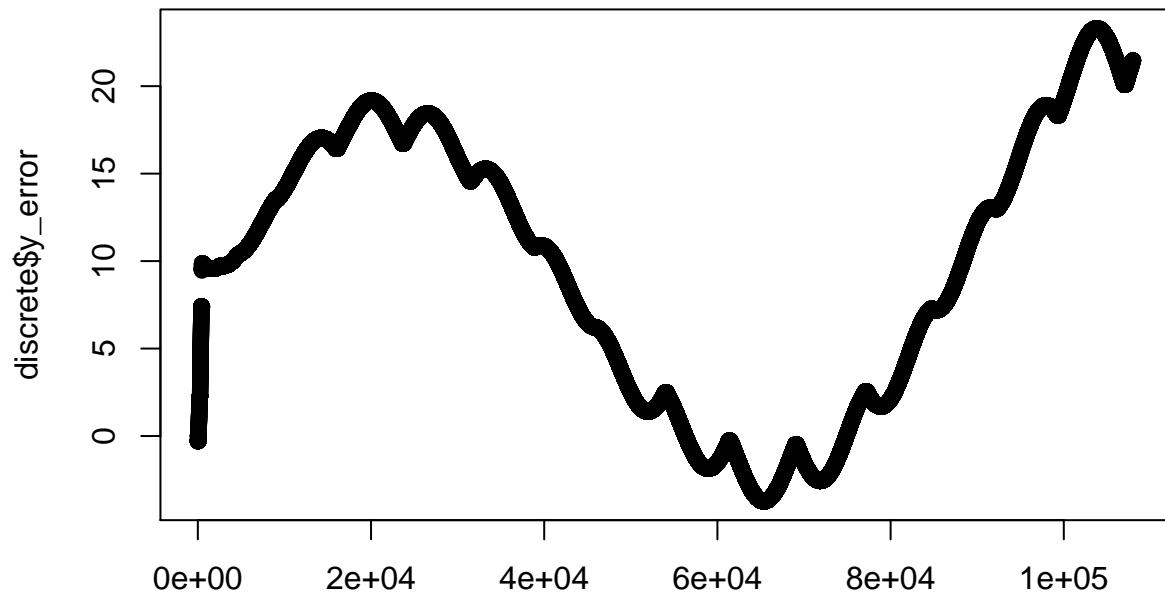
Discrete x_error over time



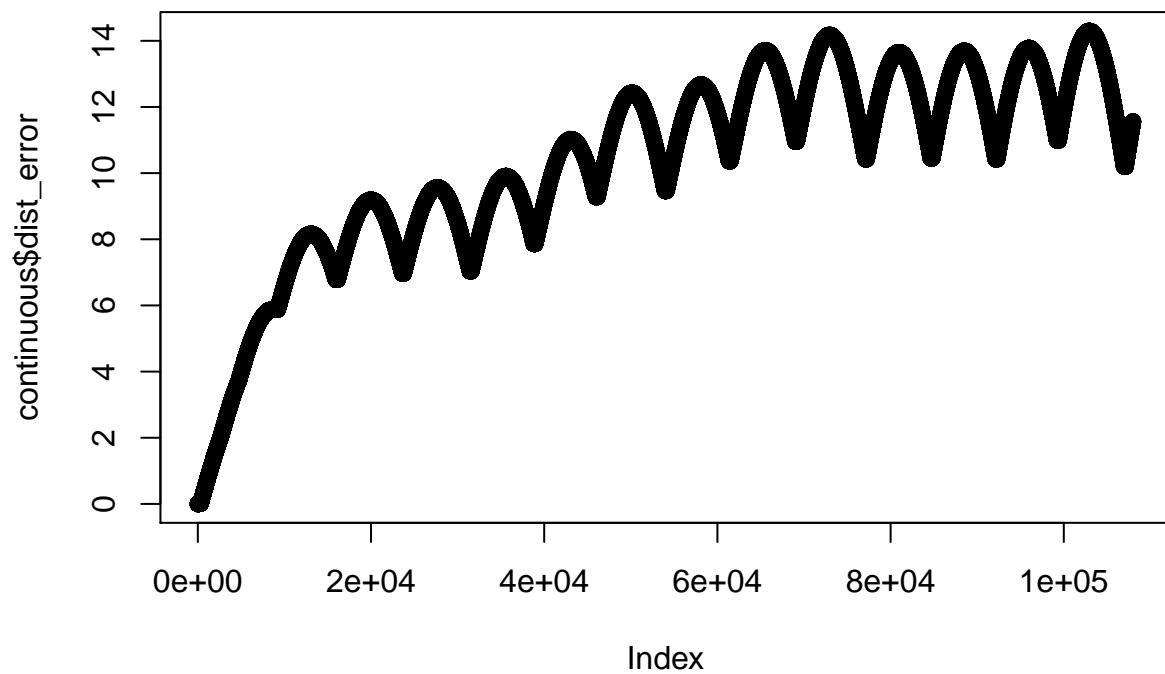
Continuous y_error over time



Discrete y_error over time



Continuous total distance error over time^{Index}



Discrete total distance error over time

