

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 1 hours, 59 minutes, and 58.8 seconds.

The total number of external pose measurements received by the robot during this time was 217540 which means poses were received at an average of 30.2189254 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.
## -0.111000 -0.108600 -0.106300 -0.063580  0.004042  0.132900

summary(continuous$y_error)

##      Min.    1st Qu.     Median      Mean    3rd Qu.      Max.
## -0.15720 -0.13840 -0.12380 -0.08847 -0.01562  0.09849

summary(continuous$dist_error)

##      Min.    1st Qu.     Median      Mean    3rd Qu.      Max.
## 2.000e-08 8.015e-02 1.650e-01 1.345e-01 1.747e-01 1.853e-01

summary(discrete$x_error)

##      Min.    1st Qu.     Median      Mean    3rd Qu.      Max.
## -0.24810 -0.24570 -0.24340 -0.16690 -0.02252  0.08327

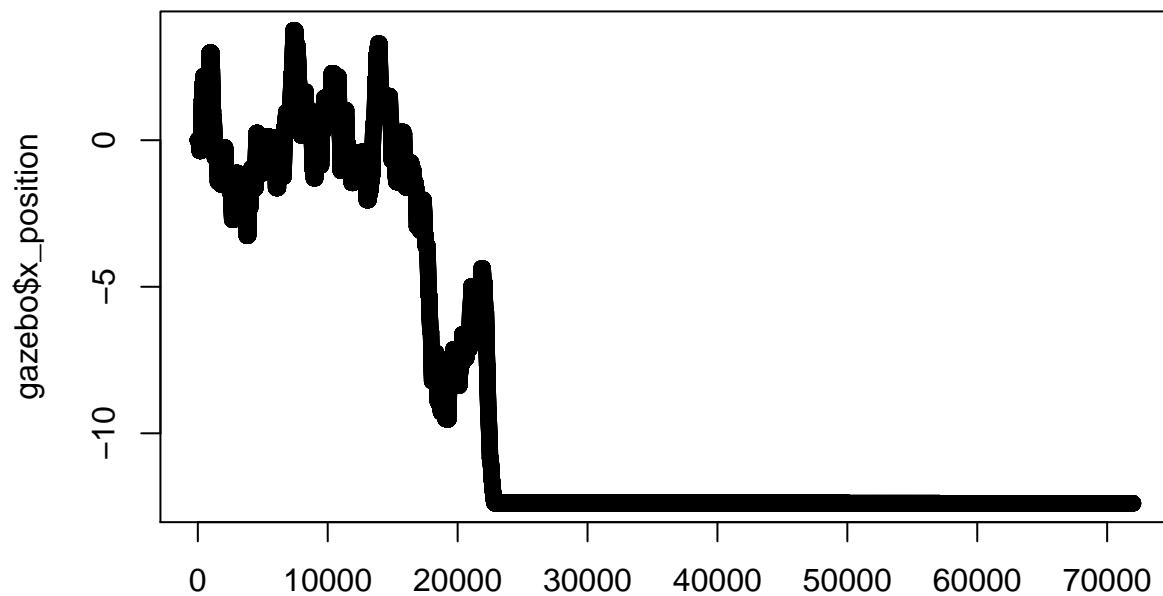
summary(discrete$y_error)

##      Min.    1st Qu.     Median      Mean    3rd Qu.      Max.
## -0.4179 -0.4033 -0.3887 -0.2856 -0.1697  0.1224

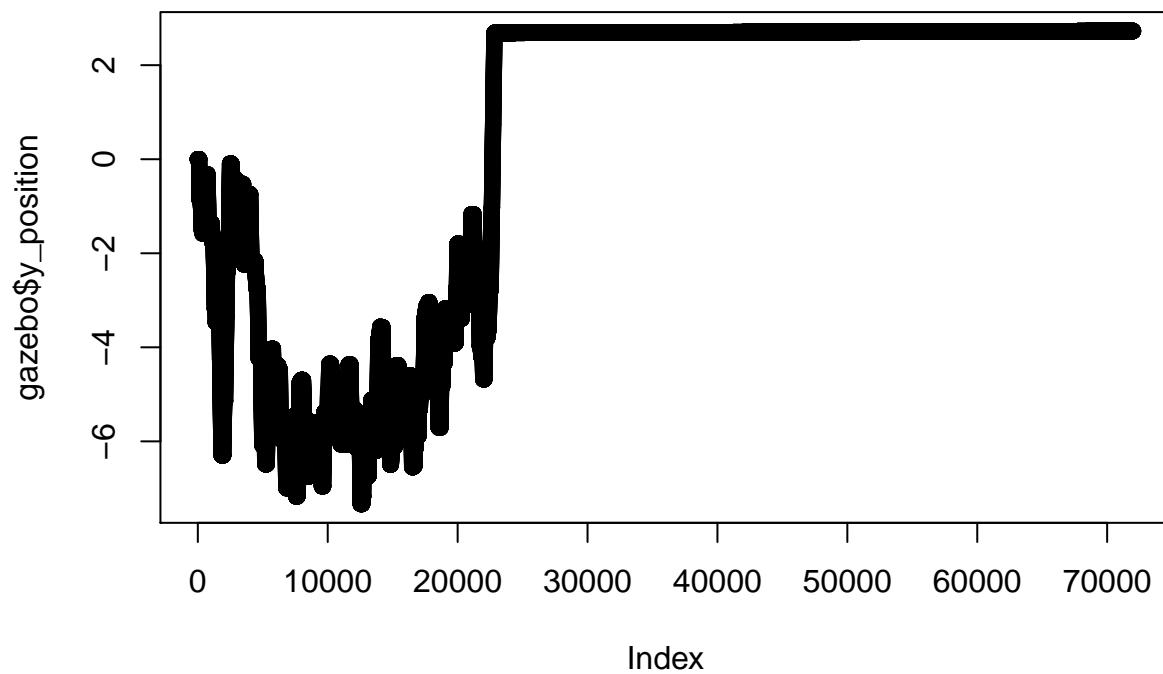
summary(discrete$dist_error)

##      Min.    1st Qu.     Median      Mean    3rd Qu.      Max.
## 0.0000  0.1701  0.4602  0.3467  0.4714  0.4828
```

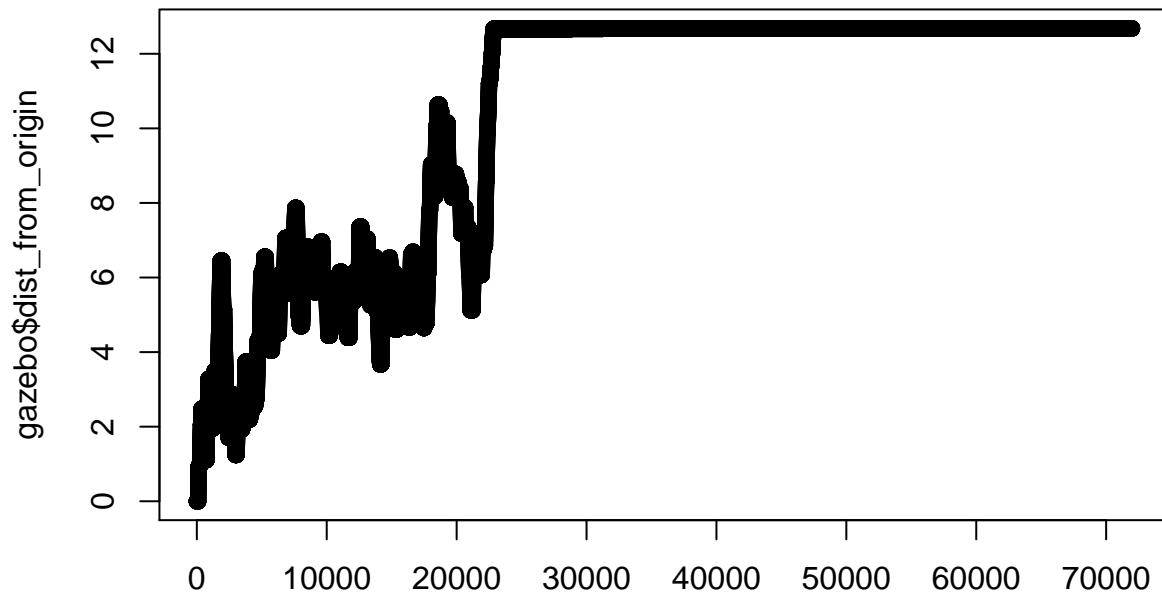
X coordinate of robot over time



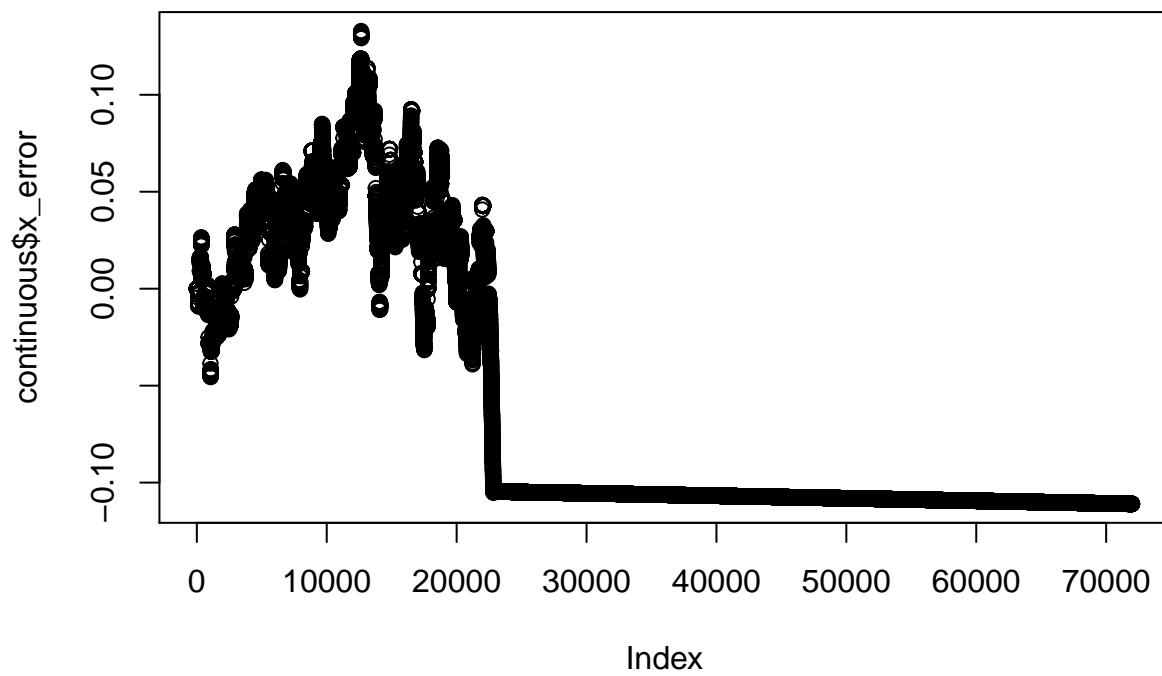
Y coordinate of robot over time



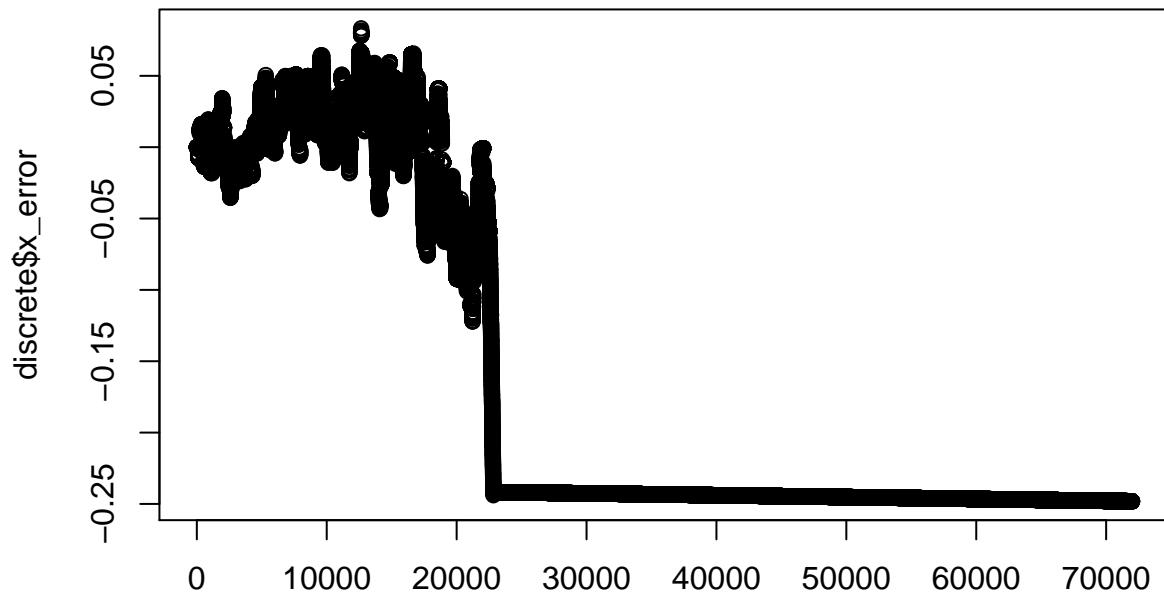
Distance from origin vs. time



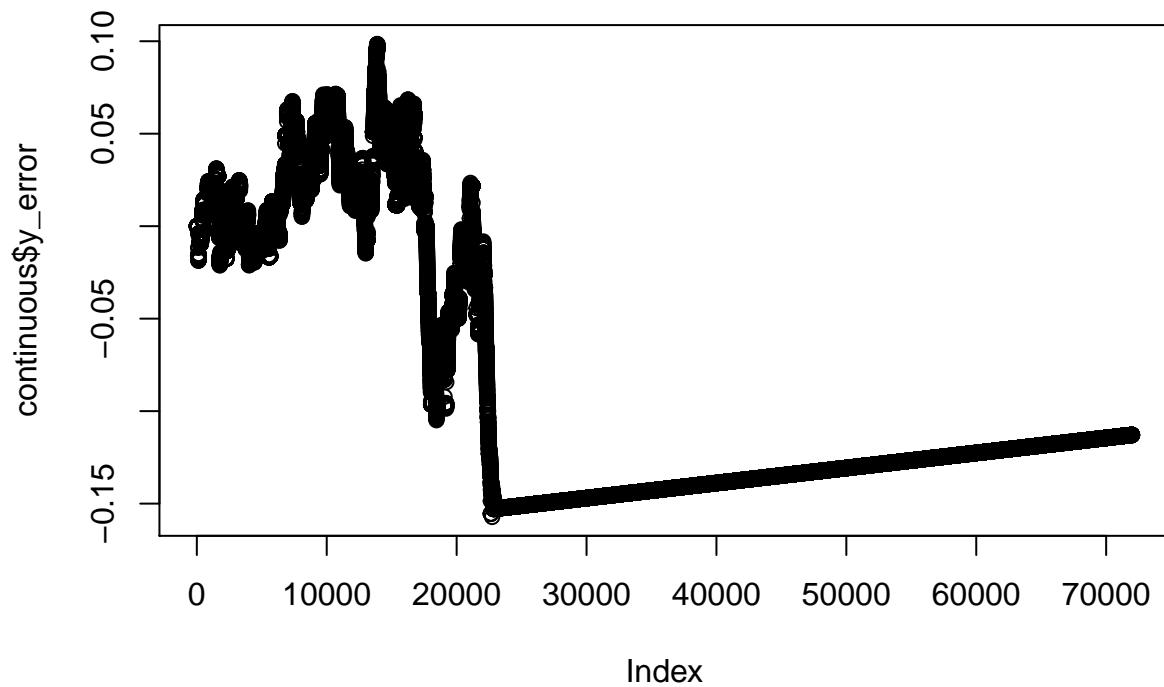
Continuous x_error over time



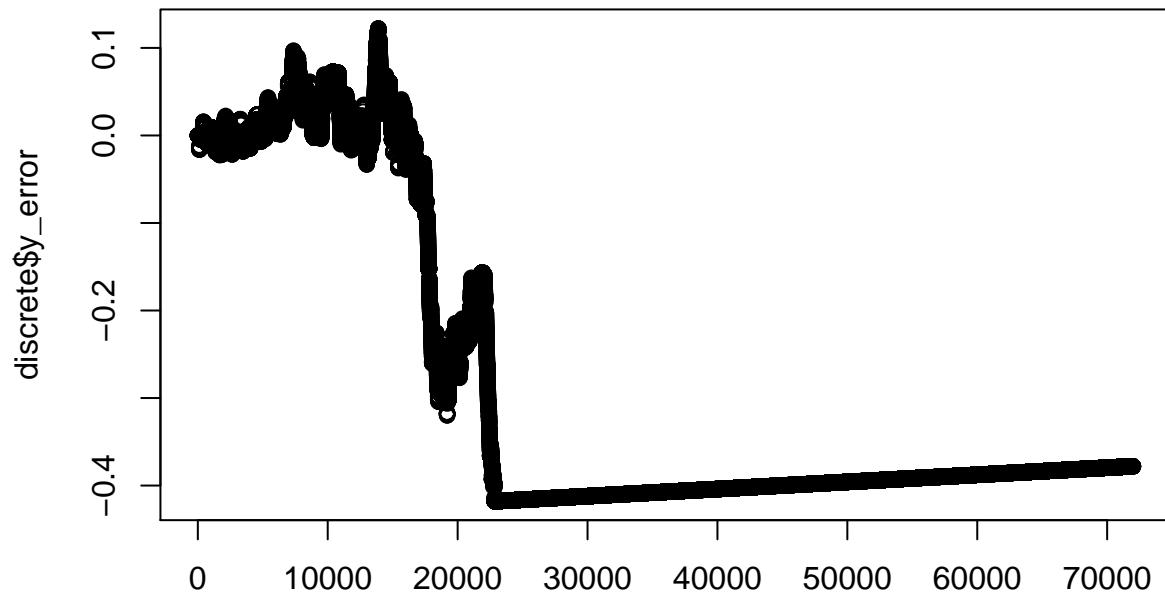
Discrete x_error over time



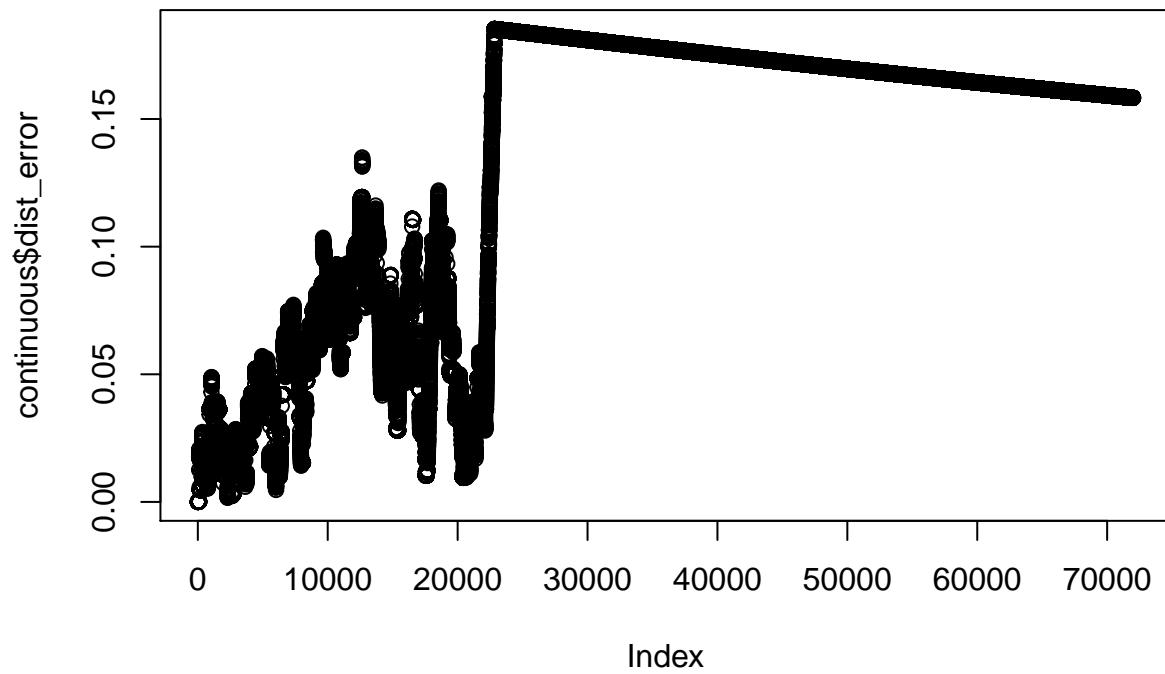
Continuous y_error over time



Discrete y_error over time



Continuous total distance error over time



Discrete total distance error over time

