

one_mobile_noisy_false Turtlebot 1 Report

Matthew Swartwout

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

The runtime of this experiment was 1 hours, 8 minutes, and 18.3 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.
## -4.567e-02 -4.168e-03  5.890e-06  8.166e-05  4.521e-03  4.113e-02
```

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

```
##      Min.    1st Qu.     Median      Mean    3rd Qu.      Max.
## -4.375e-02 -3.865e-03  1.910e-06  1.546e-04  4.465e-03  4.045e-02
```

```
summary(continuous$yaw_error)
```

```
##      Min.    1st Qu.     Median      Mean    3rd Qu.      Max.
## -6.283000 -0.114400  0.004976  0.001475  0.048240  6.270000
```

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

```
##      Min.    1st Qu.     Median      Mean    3rd Qu.      Max.
## 1.200e-07 9.688e-04  1.073e-02  1.042e-02  1.718e-02  4.655e-02
```

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

```
##      Min.    1st Qu.     Median      Mean    3rd Qu.      Max.
## -0.4373000 -0.0154000 -0.0000035  0.0001690  0.0162000  0.4268000
```

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

```
##      Min.    1st Qu.     Median      Mean    3rd Qu.      Max.
## -0.4337000 -0.0159300  0.0000000  0.0007653  0.0167600  0.5221000
```

```
summary(discrete$yaw_error)
```

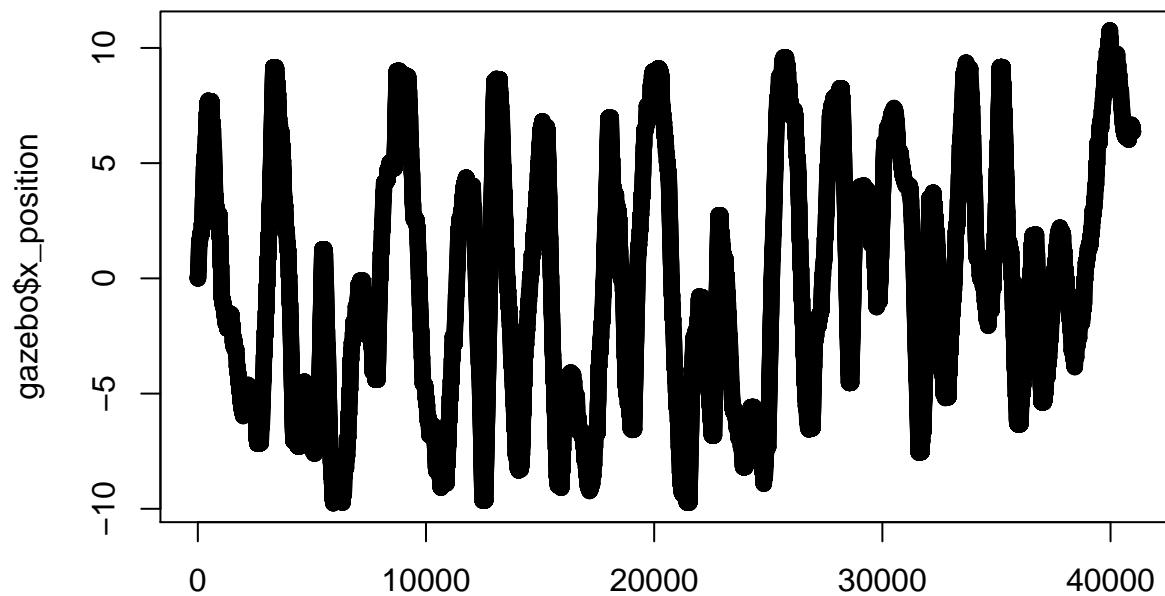
```
##      Min.    1st Qu.     Median      Mean    3rd Qu.      Max.
## -6.27800 -0.48250 -0.01328  0.02241  0.07337  6.27900
```

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

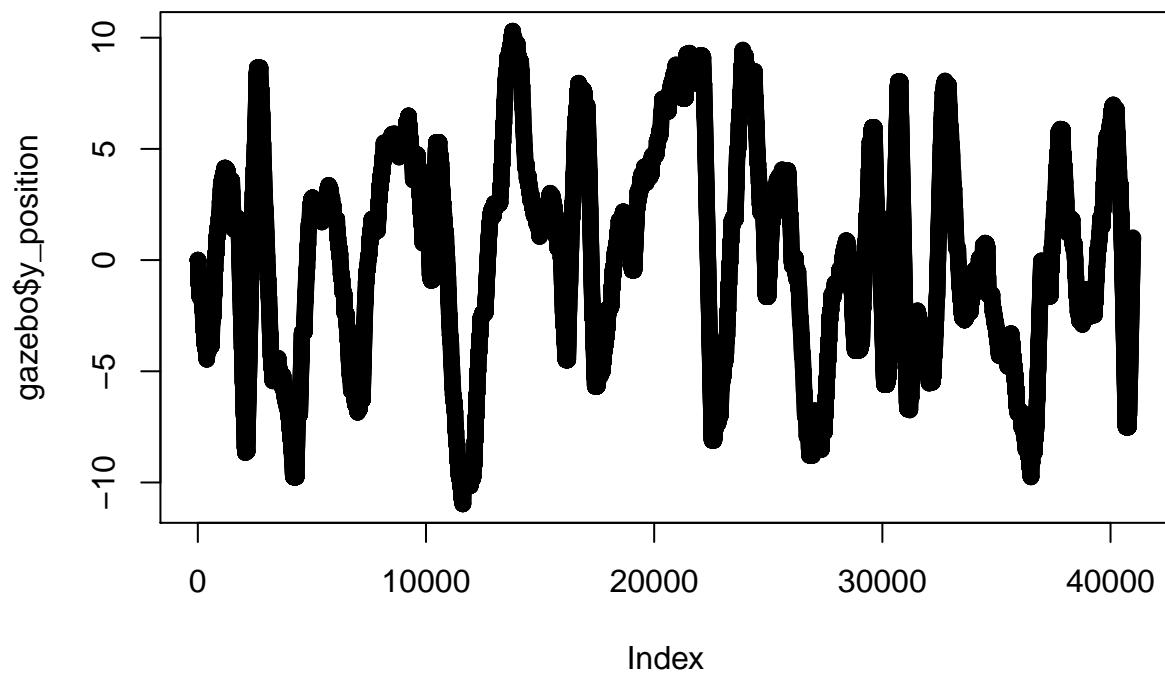
```
##      Min.    1st Qu.     Median      Mean    3rd Qu.      Max.
## 0.000000 0.003078  0.040090  0.045840  0.051380  0.523700
```

```
#sum(continuous$dist_error <= 0.25) / length(continuous$dist_error)
#sum(discrete$dist_error <= 0.25) / length(discrete$dist_error)
```

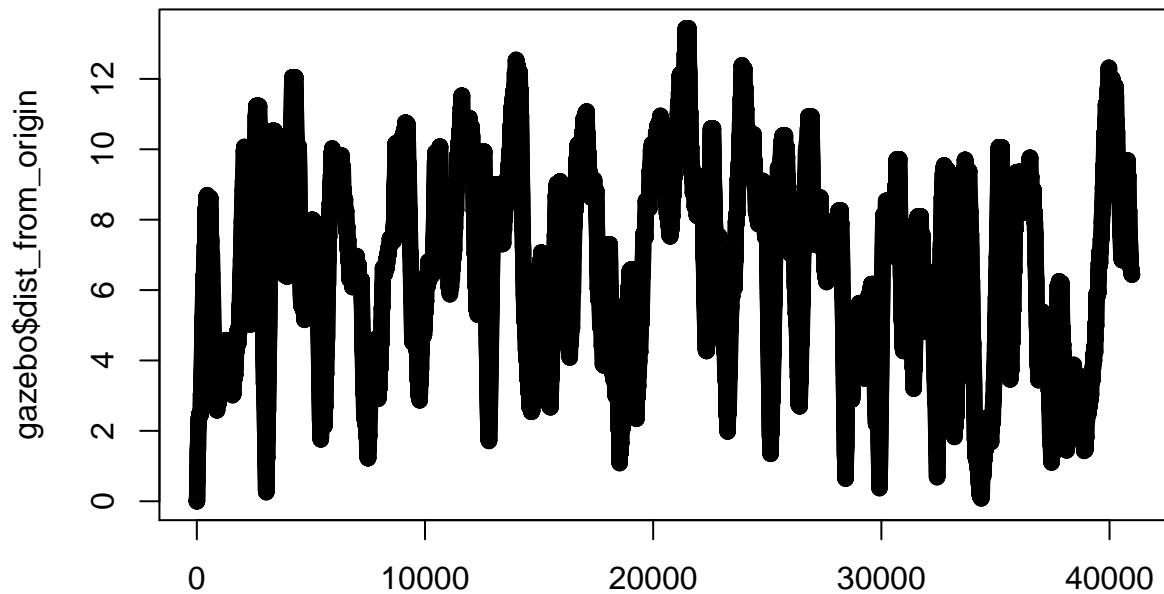
X coordinate of robot over time



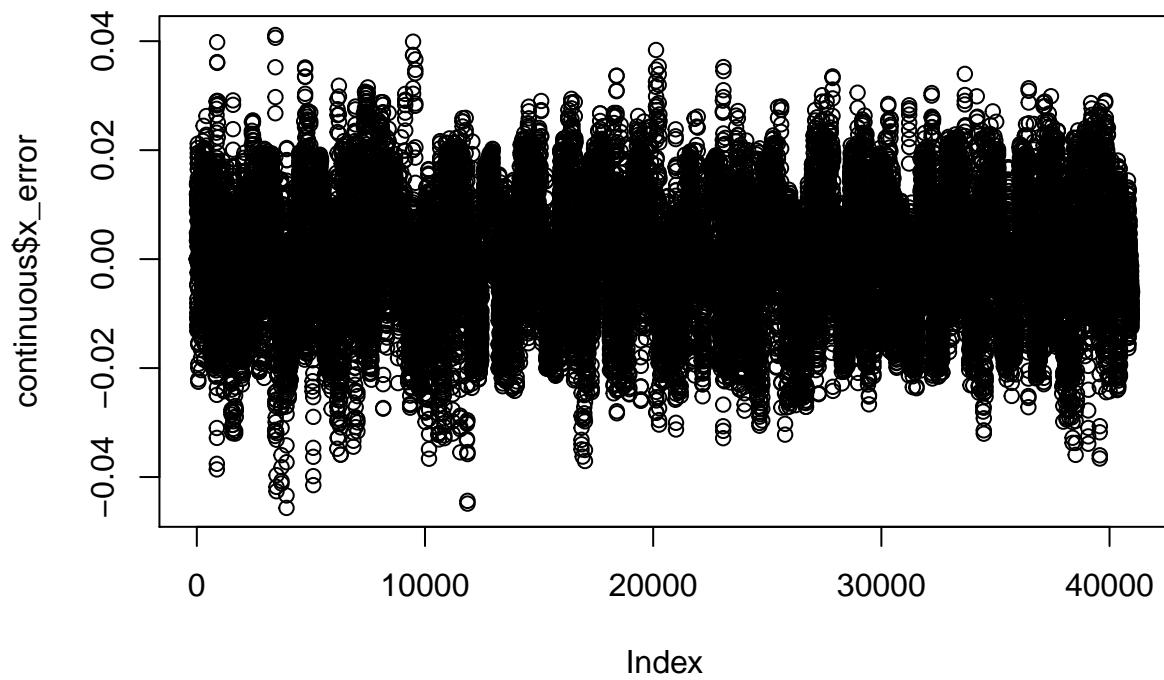
Y coordinate of robot over time



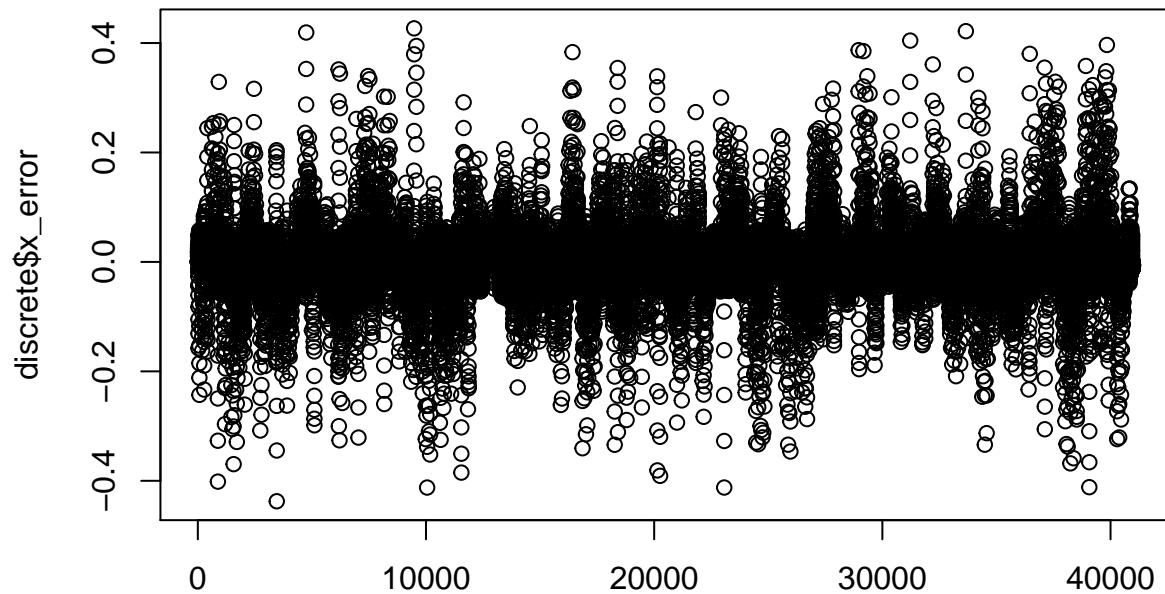
Distance from origin vs. time



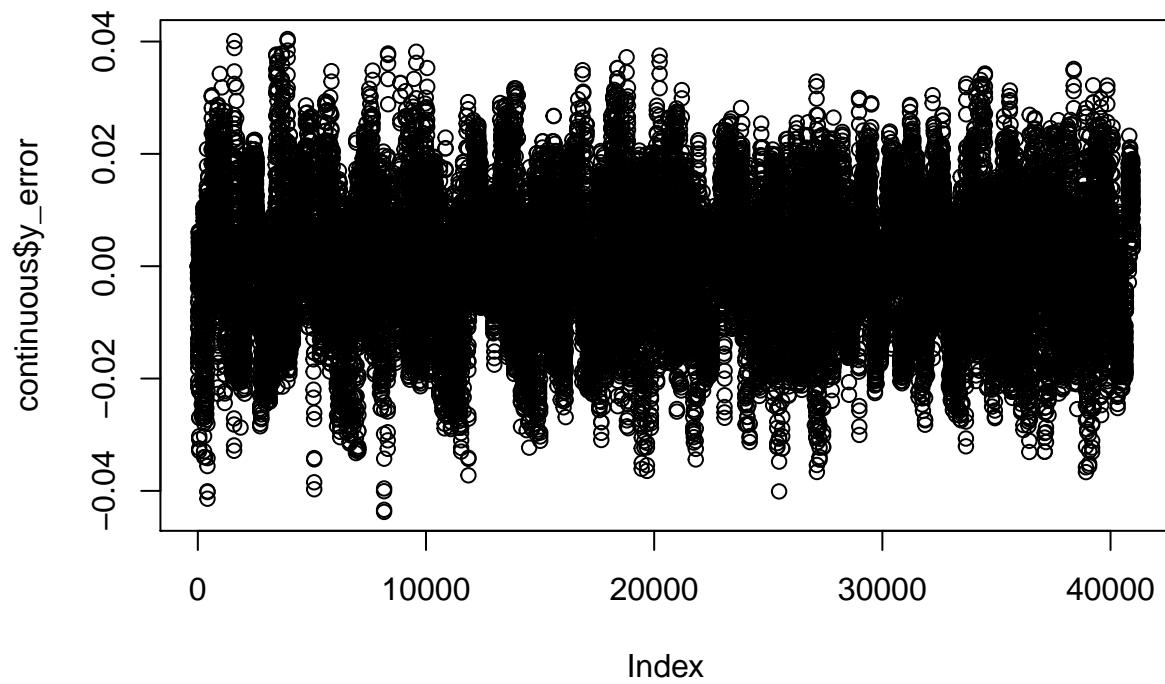
Continuous x_error over time



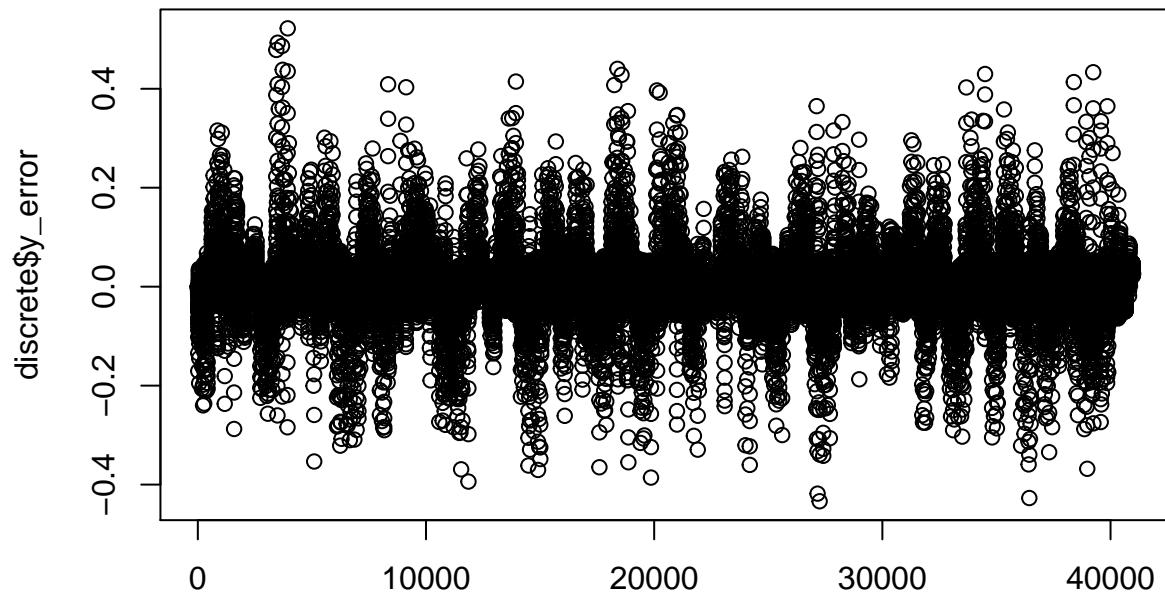
Discrete x_error over time



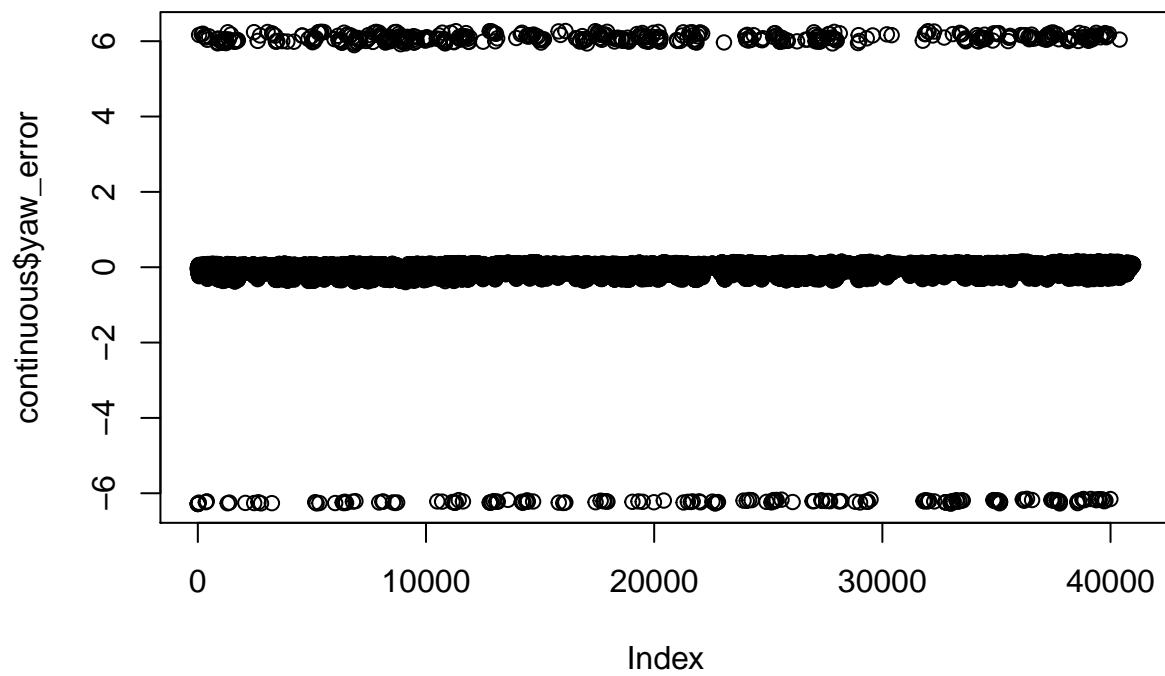
Continuous y_error over time



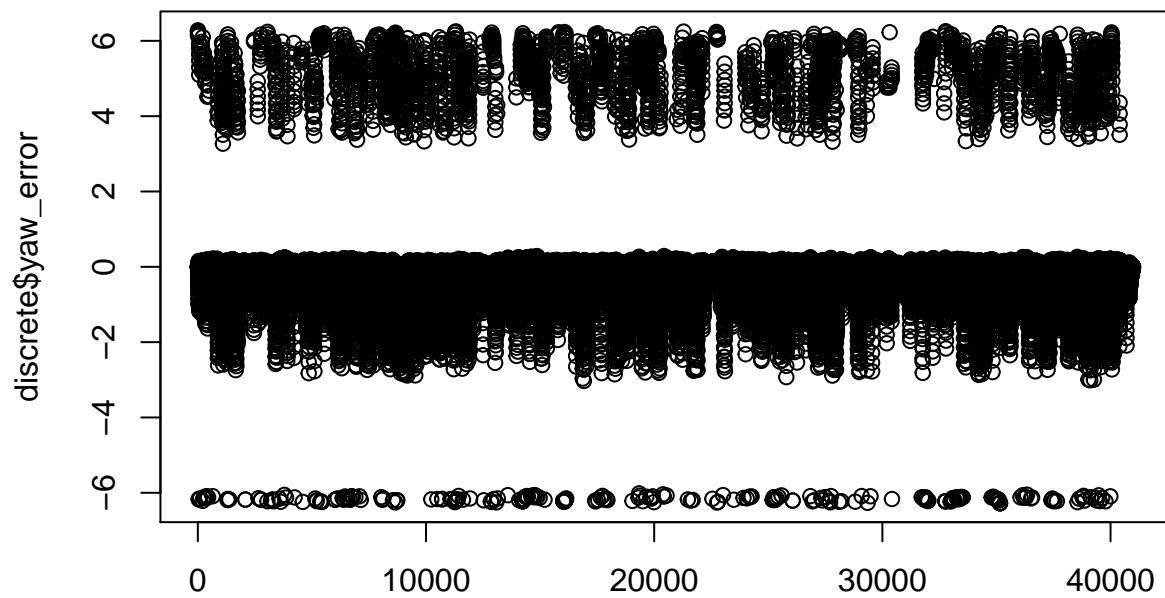
Discrete y_error over time



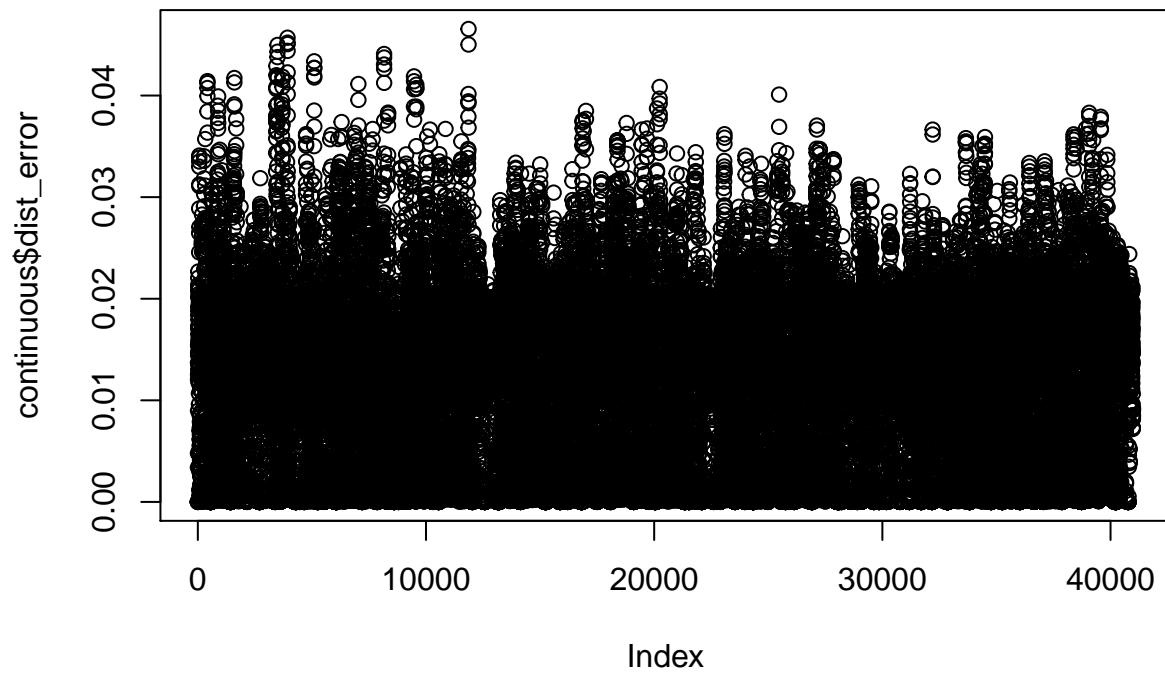
Continuous yaw error over time



Discrete yaw error over time



Continuous total distance error over time



Discrete total distance error over time

