

two_mobile Turtlebot 2 Report

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July 05, 2016

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

The runtime of this experiment was 0 hours, 3 minutes, and 59.7 seconds.

The total number of external pose measurements recieved 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.
## -0.98070 -0.44640 -0.32770 -0.31200 -0.06181  0.06123
```

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

```
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
## -0.54180 -0.38260 -0.25140 -0.24440 -0.11620  0.03897
```

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

```
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
## -6.278000 -0.035530 -0.003913 -0.010280  0.010580  6.277000
```

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

```
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
## 0.0000001 0.3901000 0.4403000 0.4366000 0.5582000 0.9857000
```

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

```
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##      1.055   1.585   1.660   1.692   1.923   2.017
```

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

```
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
## -0.49080 -0.39390 -0.22380 -0.22110 -0.05402  0.02823
```

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

```
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##     -3.139   3.116   3.138   3.127   3.145   9.402
```

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

```
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##      1.055   1.617   1.679   1.714   1.976   2.028
```

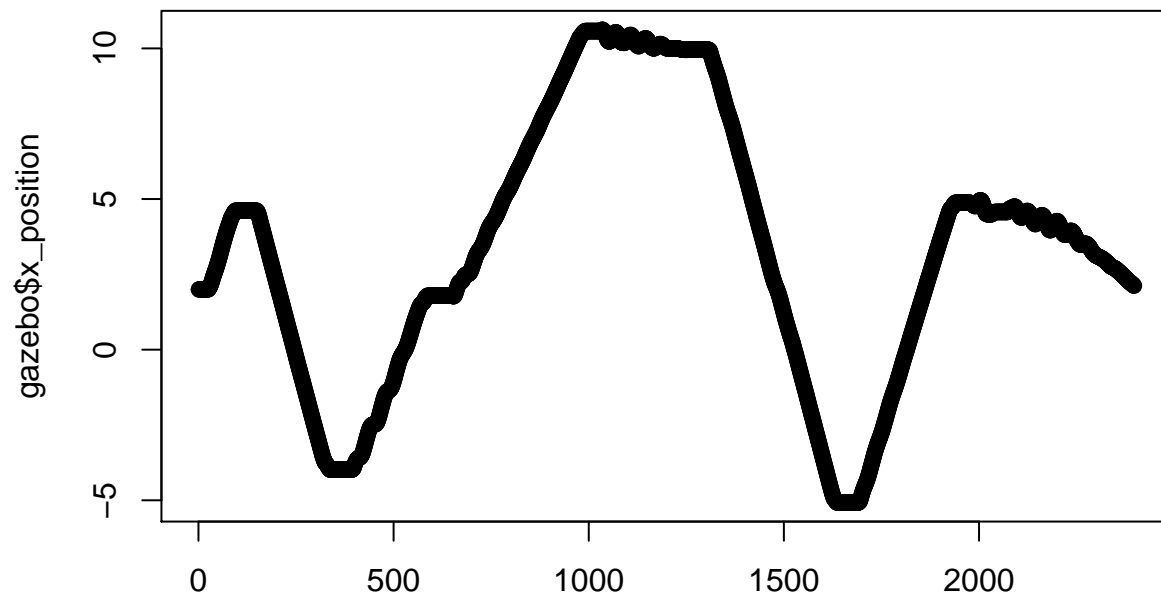
```
sum(continuous$dist_error <= 0.25) / length(continuous$dist_error)
```

```
## [1] 0.1952441
```

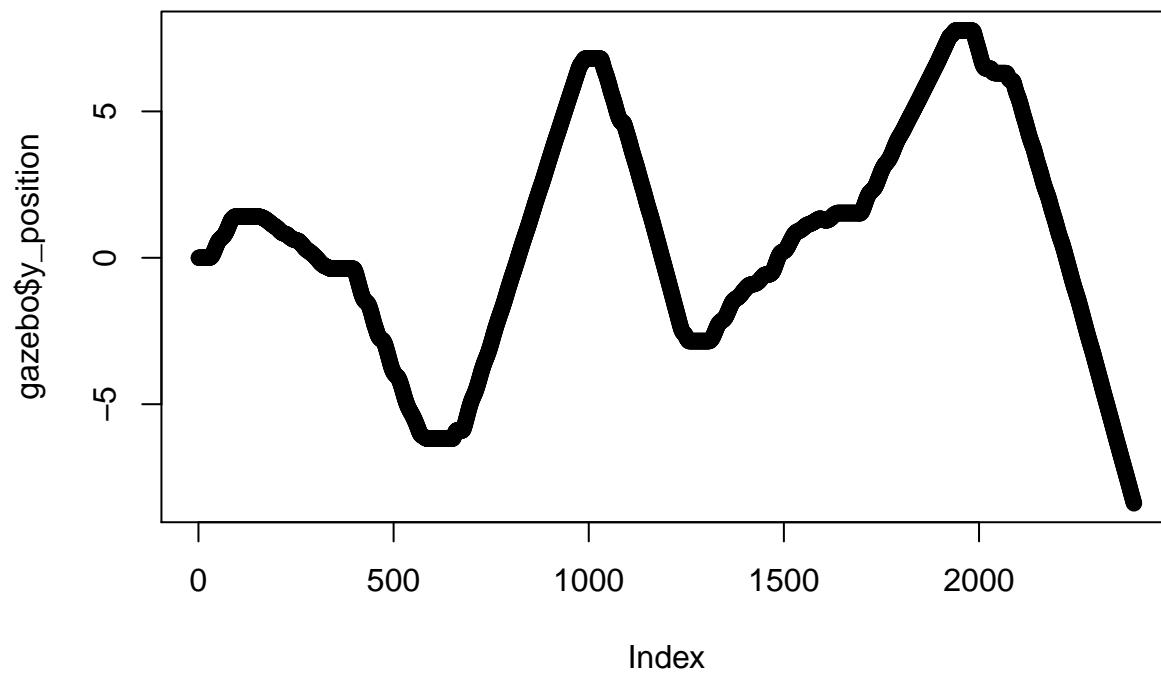
```
sum(discrete$dist_error <= 0.25) / length(discrete$dist_error)
```

```
## [1] 0
```

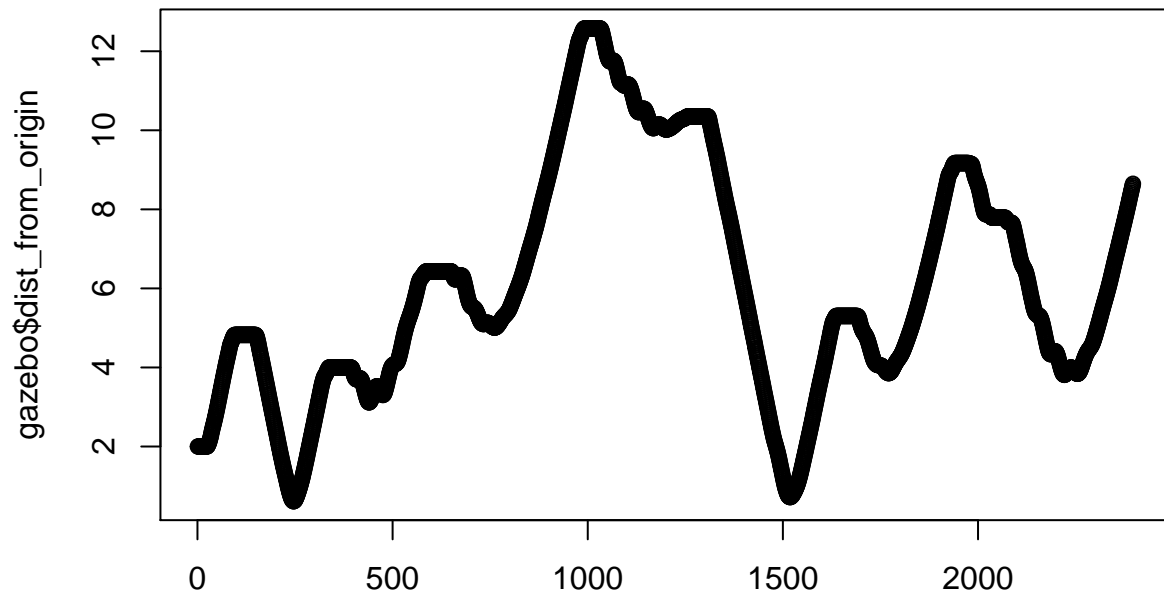
X coordinate of robot over time



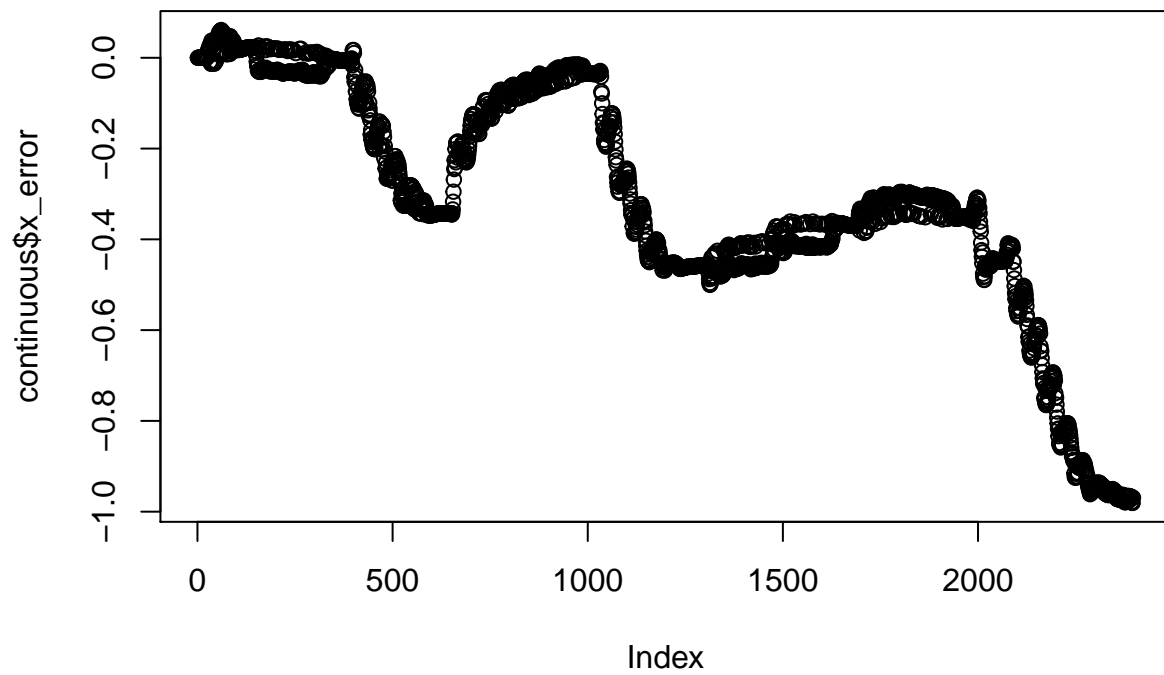
Y coordinate of robot over time



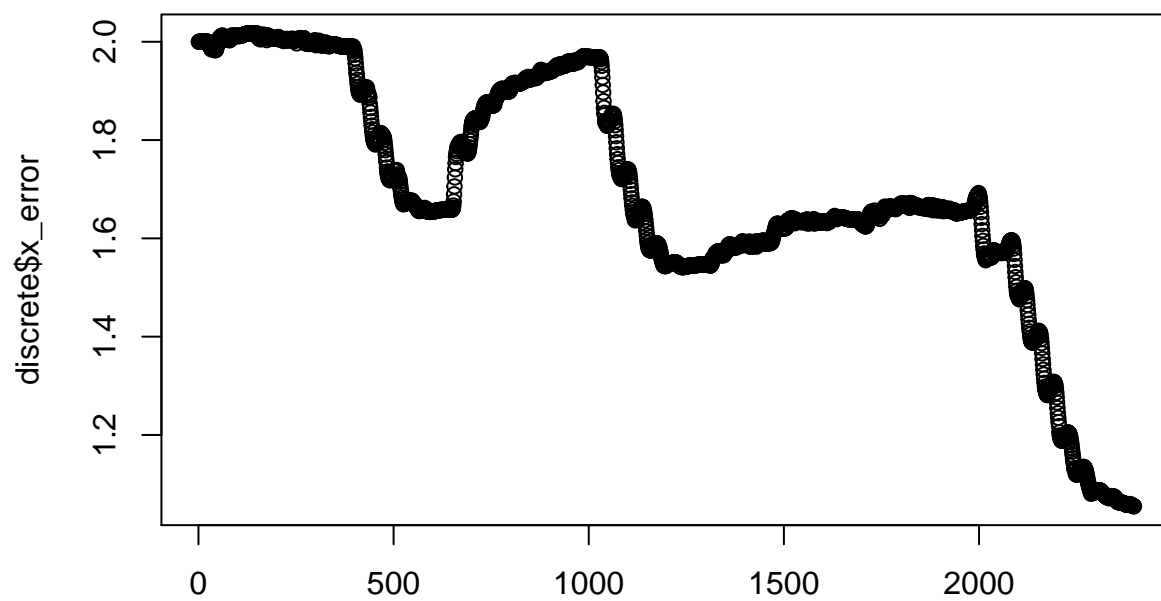
Distance from origin vs. time



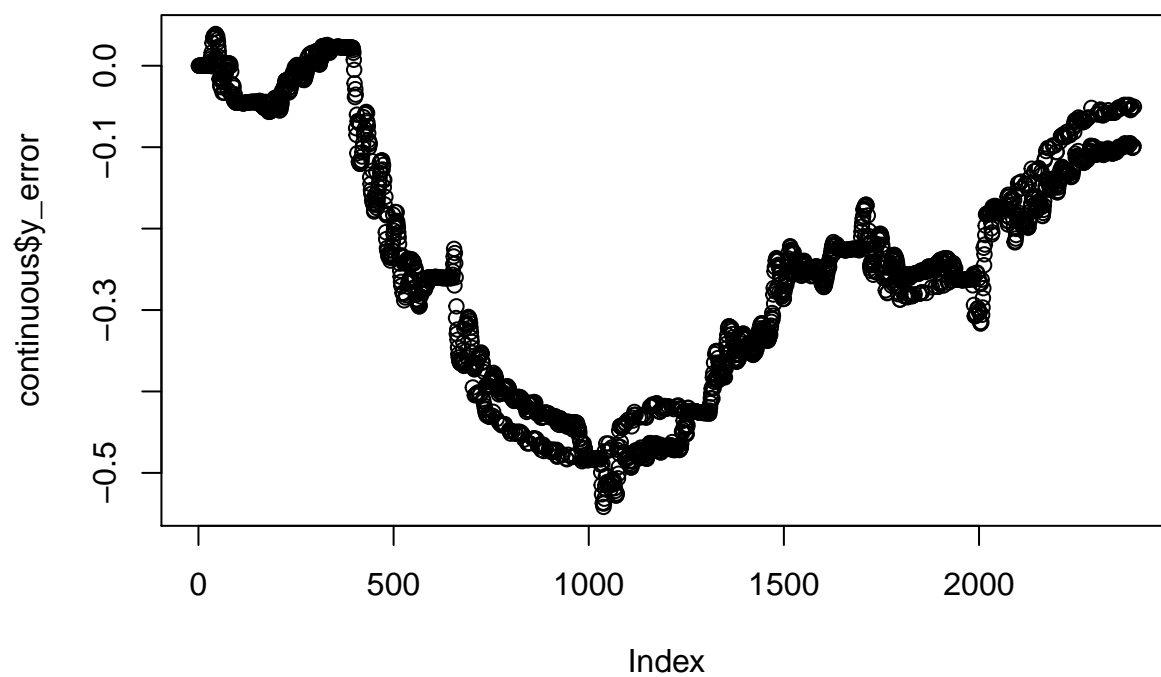
Continuous x_error over time



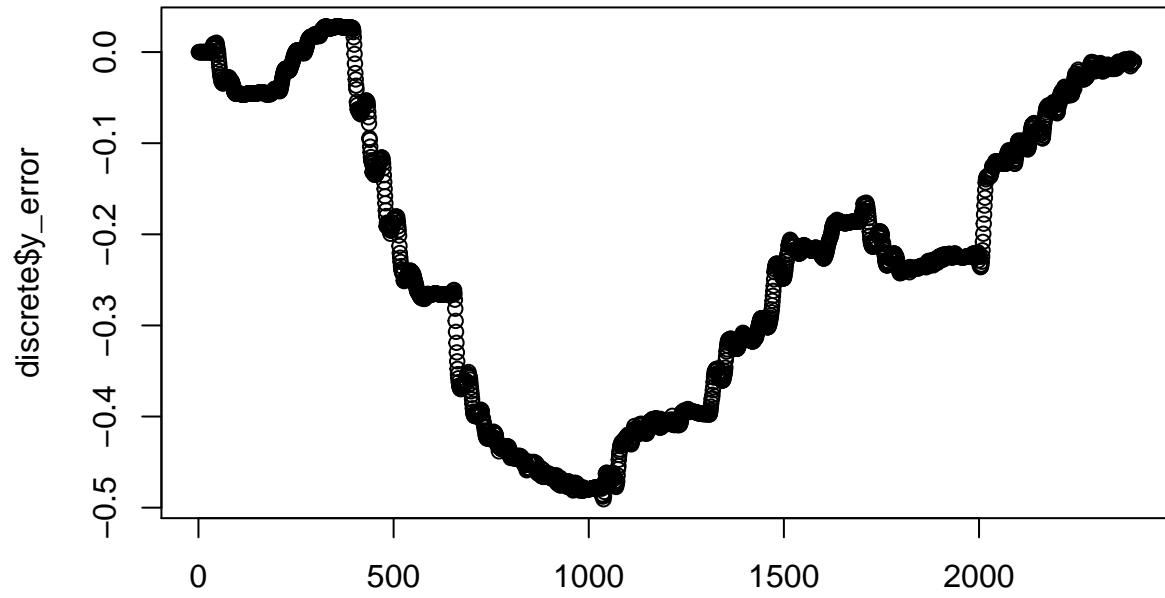
Discrete x_error over time



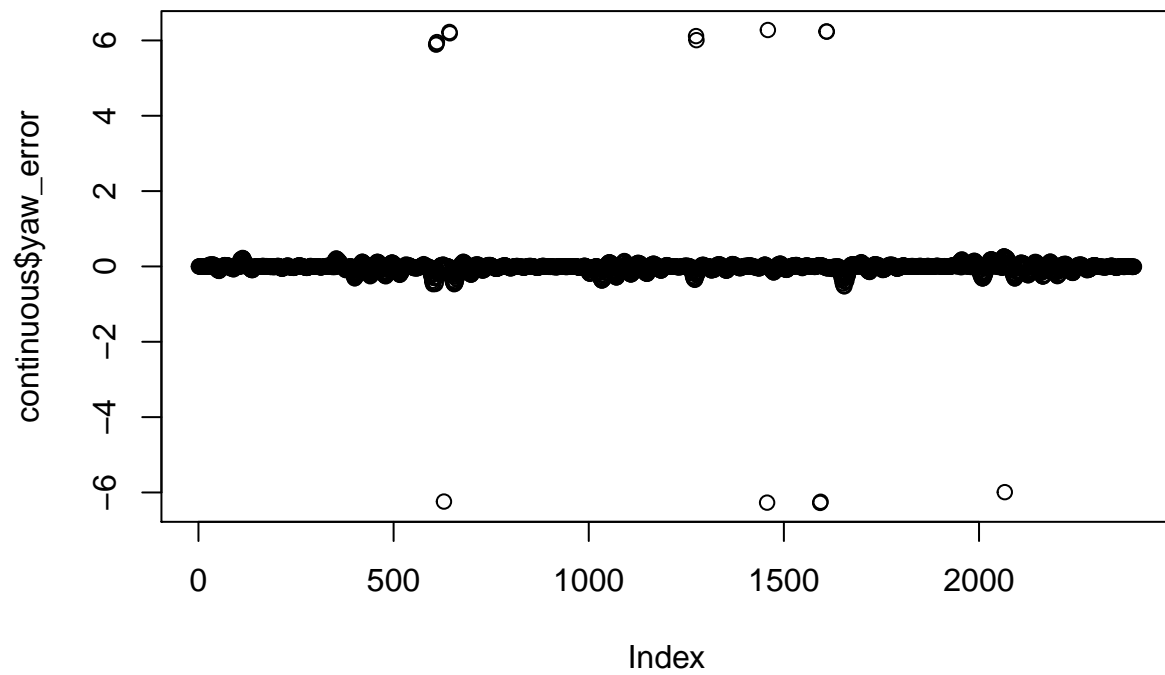
Continuous y_error over time



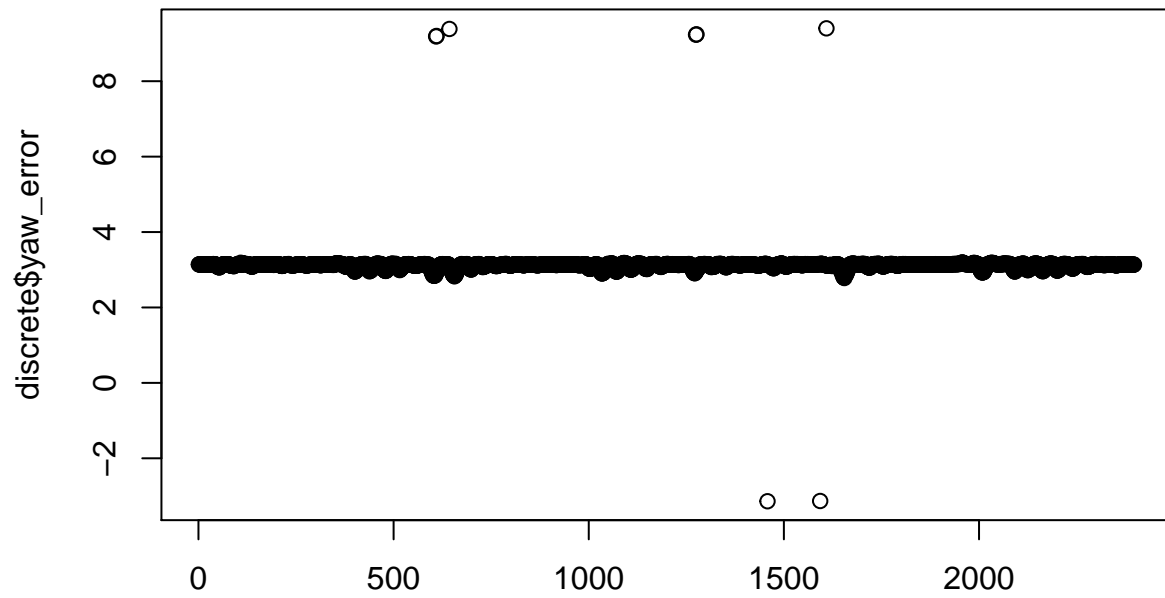
Discrete y_error over time



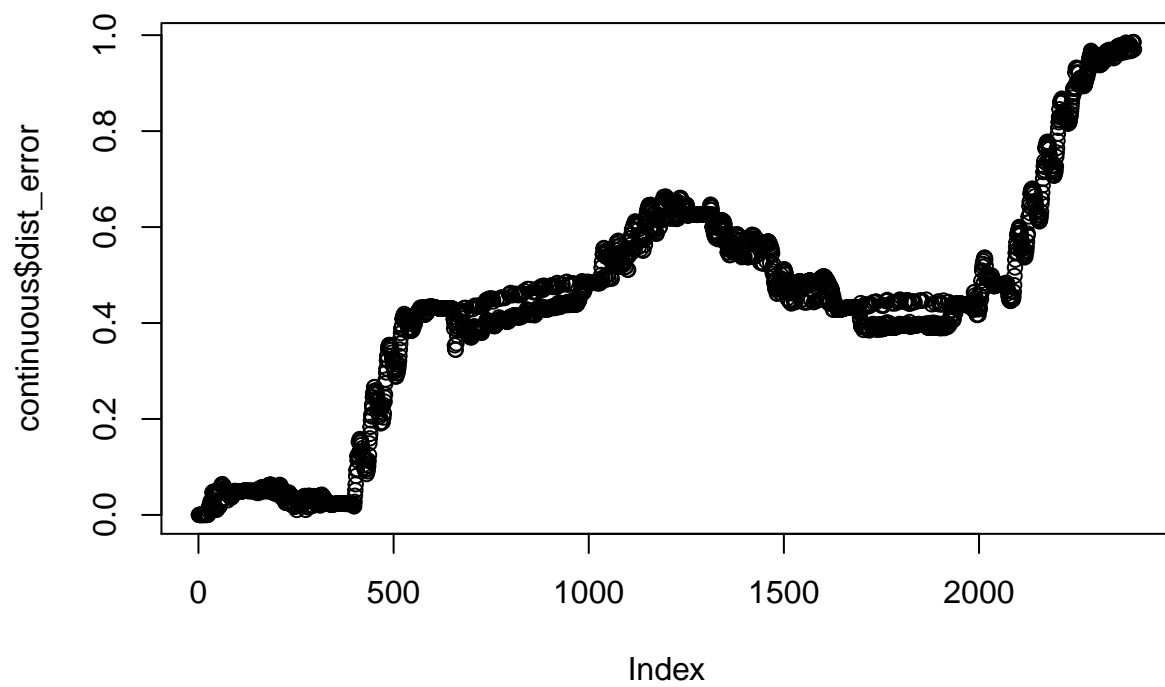
Continuous yaw error over time



Discrete yaw error over time



Continuous total distance error over time



Discrete total distance error over time

