

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 0 hours, 0 minutes, and 58.4 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.
## -0.0295900 -0.0048180 -0.0002738  0.0001320  0.0019760  0.0497700
```

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

```
##      Min.    1st Qu.    Median      Mean   3rd Qu.      Max.
## -0.054900 -0.002722  0.000000  0.002785  0.007264  0.073080
```

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

```
##      Min.    1st Qu.    Median      Mean   3rd Qu.      Max.
## -6.28300 -0.22500 -0.15540 -0.08195 -0.01544  6.18300
```

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

```
##      Min.    1st Qu.    Median      Mean   3rd Qu.      Max.
## 2.020e-06 2.396e-03 8.348e-03 1.037e-02 1.595e-02 7.312e-02
```

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

```
##      Min.    1st Qu.    Median      Mean   3rd Qu.      Max.
## -0.307600 -0.030220 -0.005019 -0.005127  0.003956  0.468900
```

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

```
##      Min.    1st Qu.    Median      Mean   3rd Qu.      Max.
## -0.0919300 -0.0116600  0.0000143  0.0228000  0.0384200  0.3728000
```

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

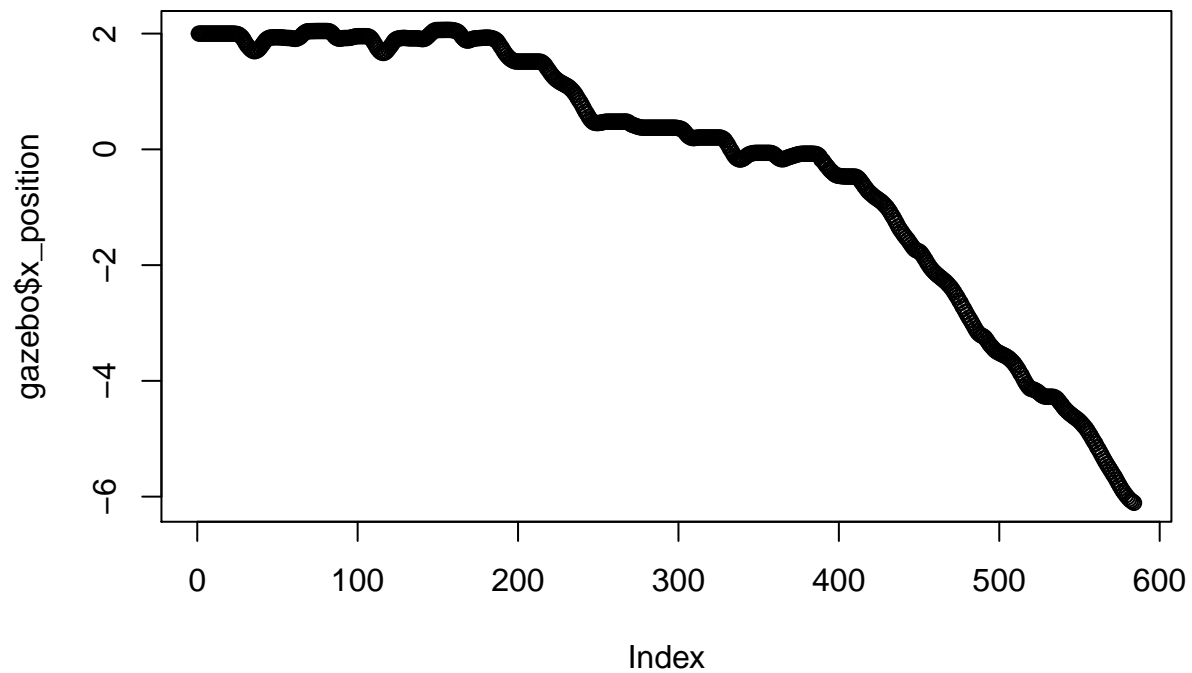
```
##      Min.    1st Qu.    Median      Mean   3rd Qu.      Max.
## -2.77500 -1.08200 -0.36620 -0.05406  0.05632  6.27800
```

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

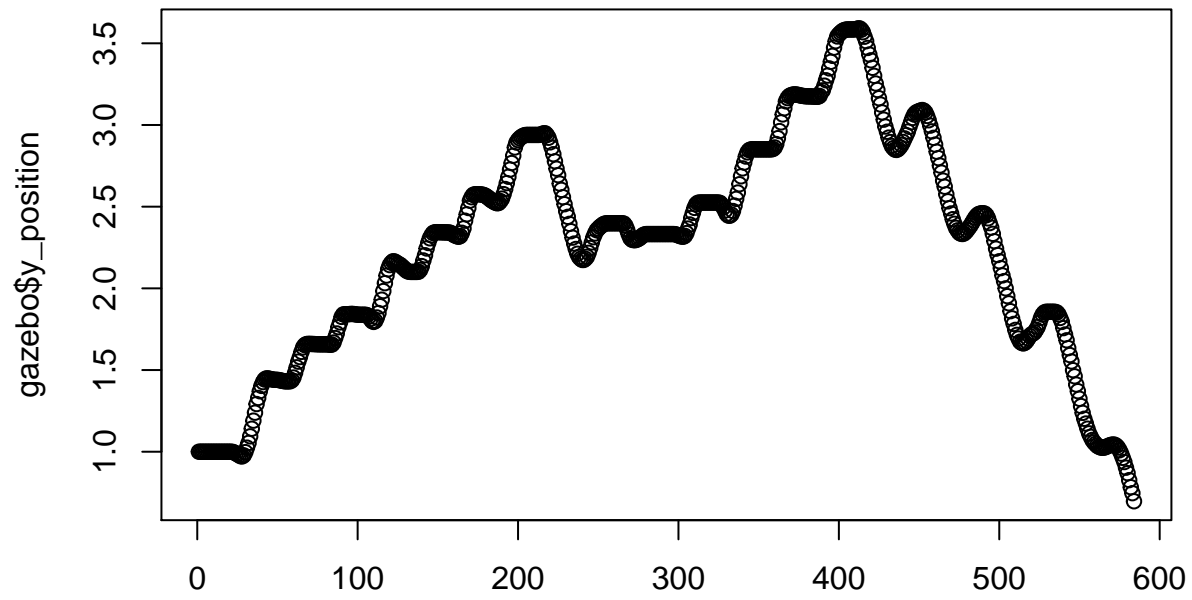
```
##      Min.   1st Qu.   Median     Mean   3rd Qu.     Max.
## 0.0000004 0.0098960 0.0444200 0.0647500 0.0711000 0.4706000
```

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

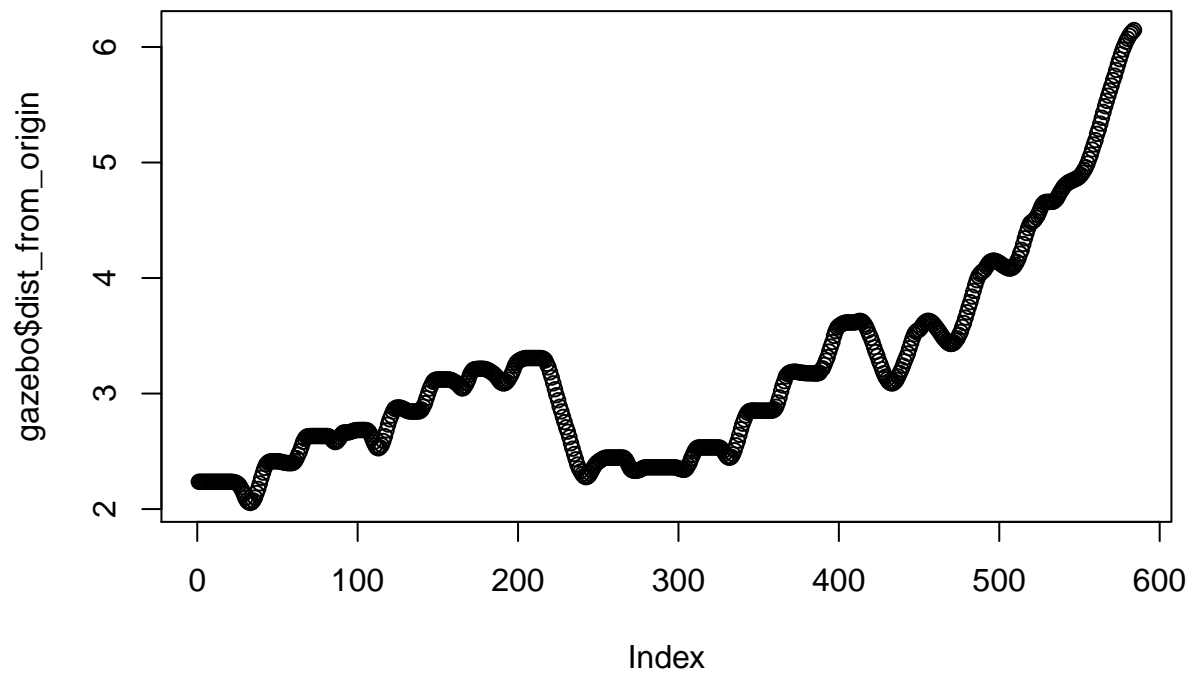
X coordinate of robot over time



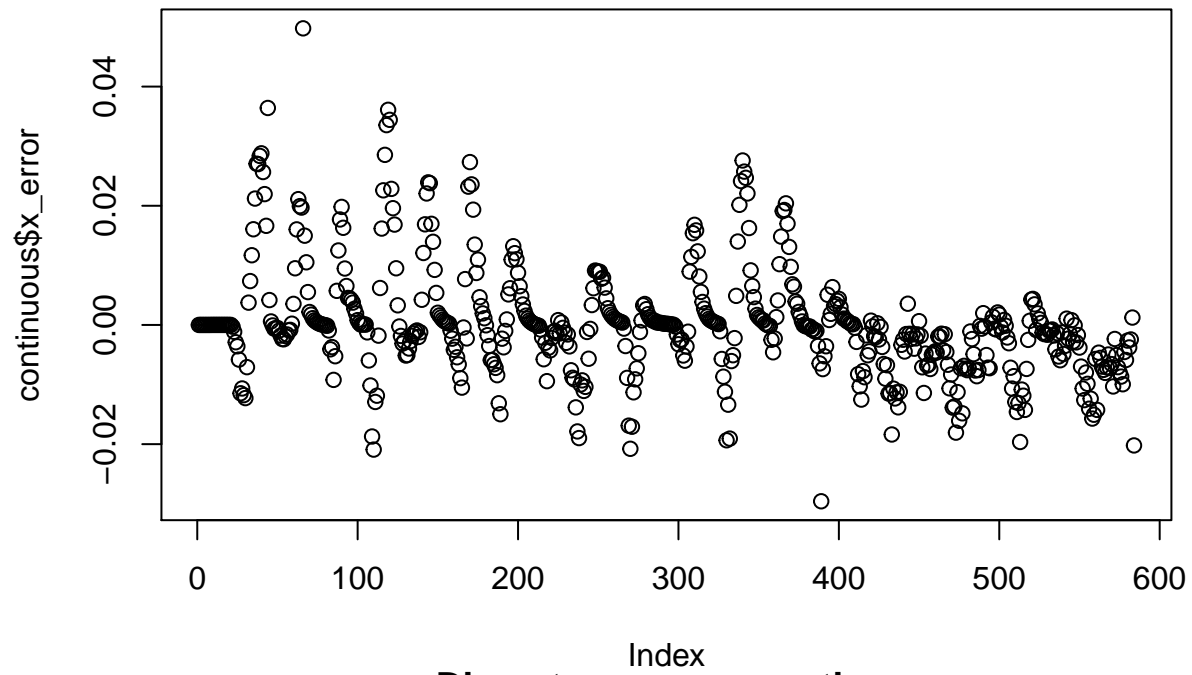
Y coordinate of robot over time



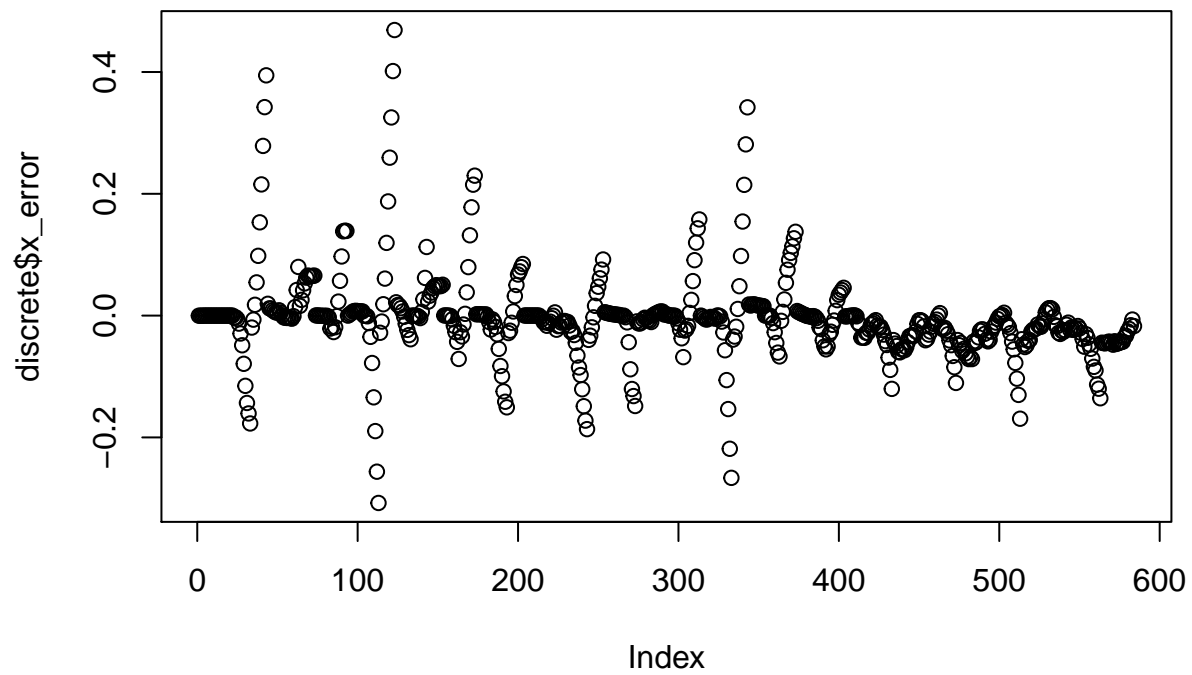
Distance from origin vs. time



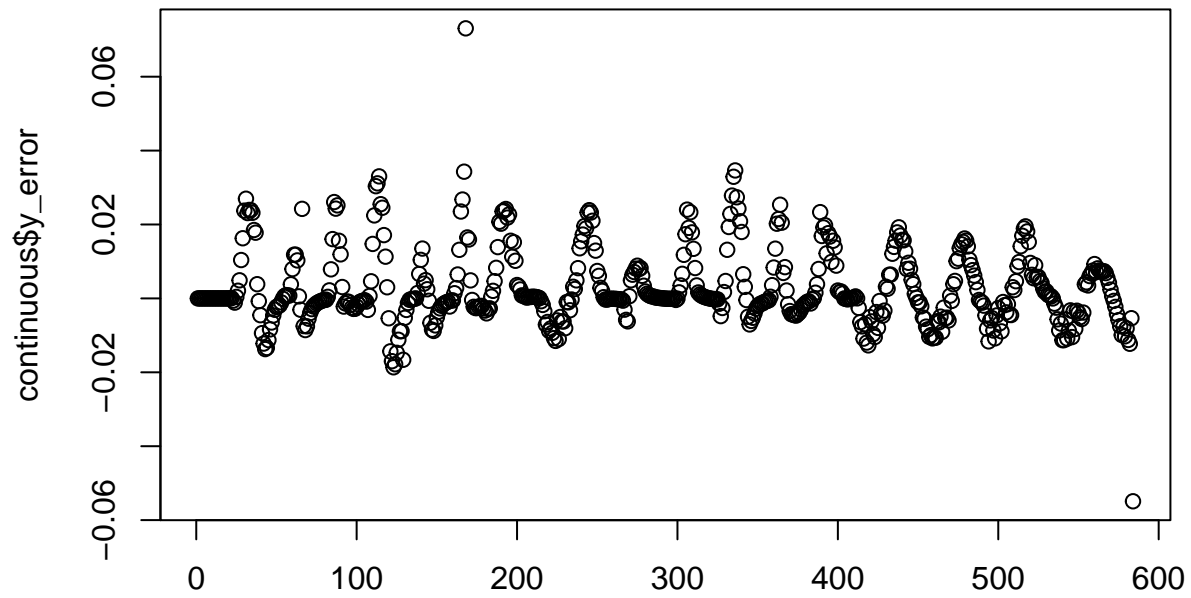
Continuous x_{error} over time



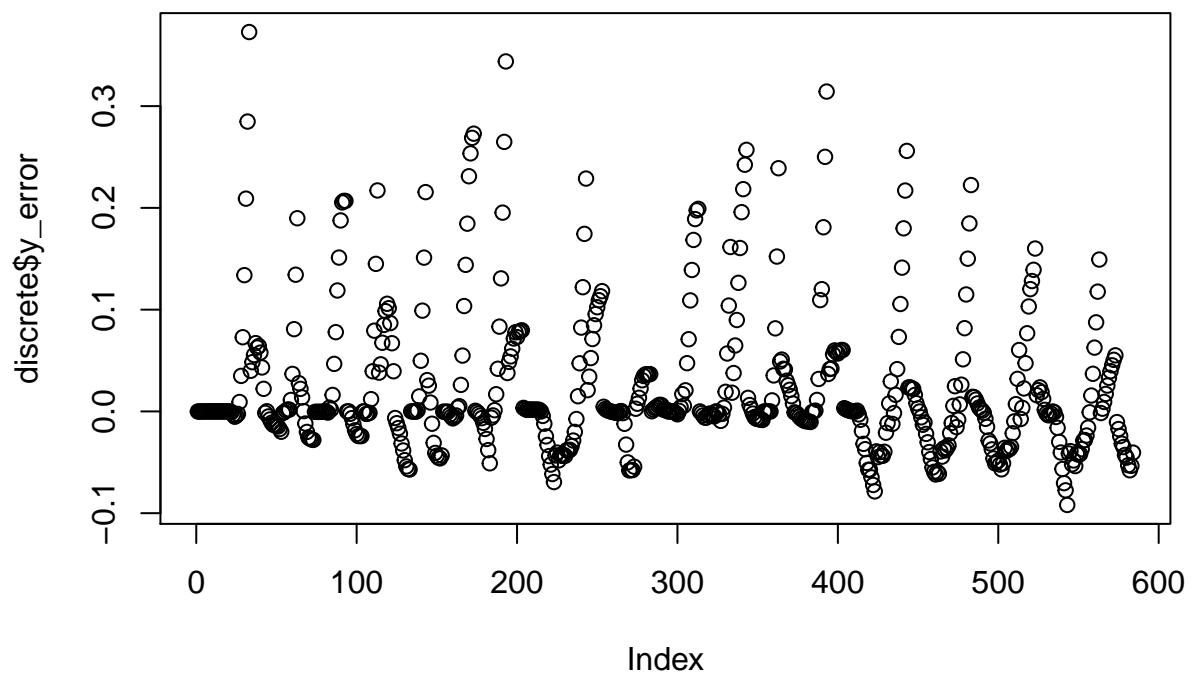
Discrete x_{error} over time



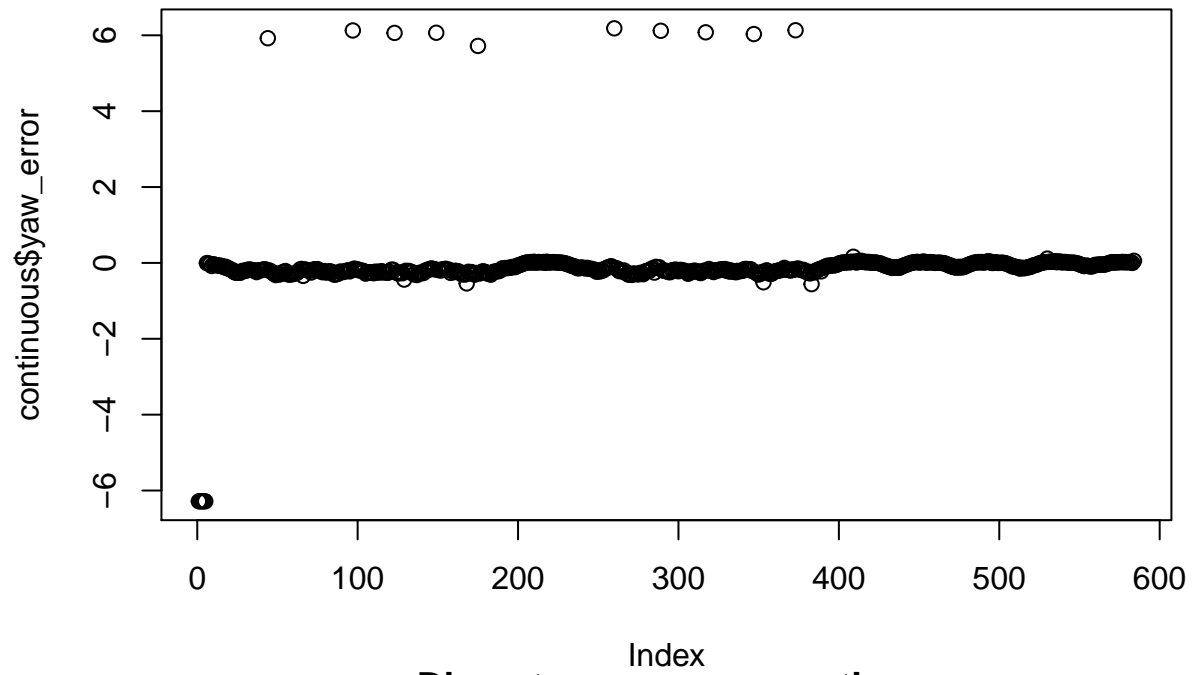
Continuous y_error over time



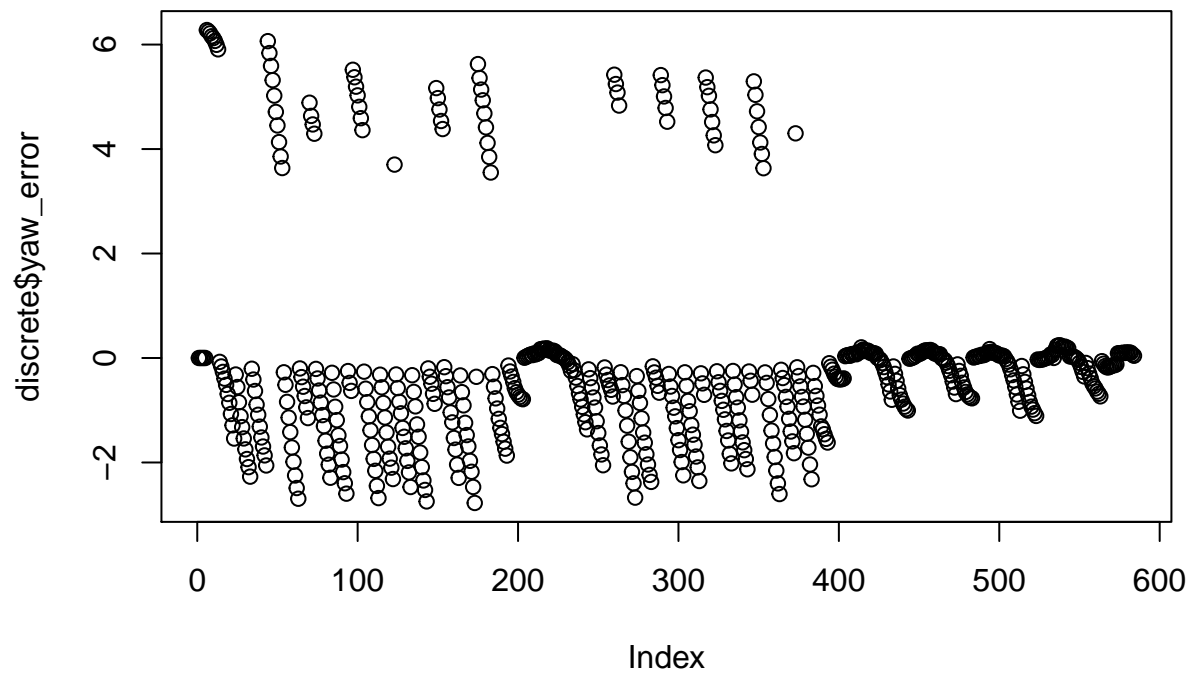
Discrete y_error over time



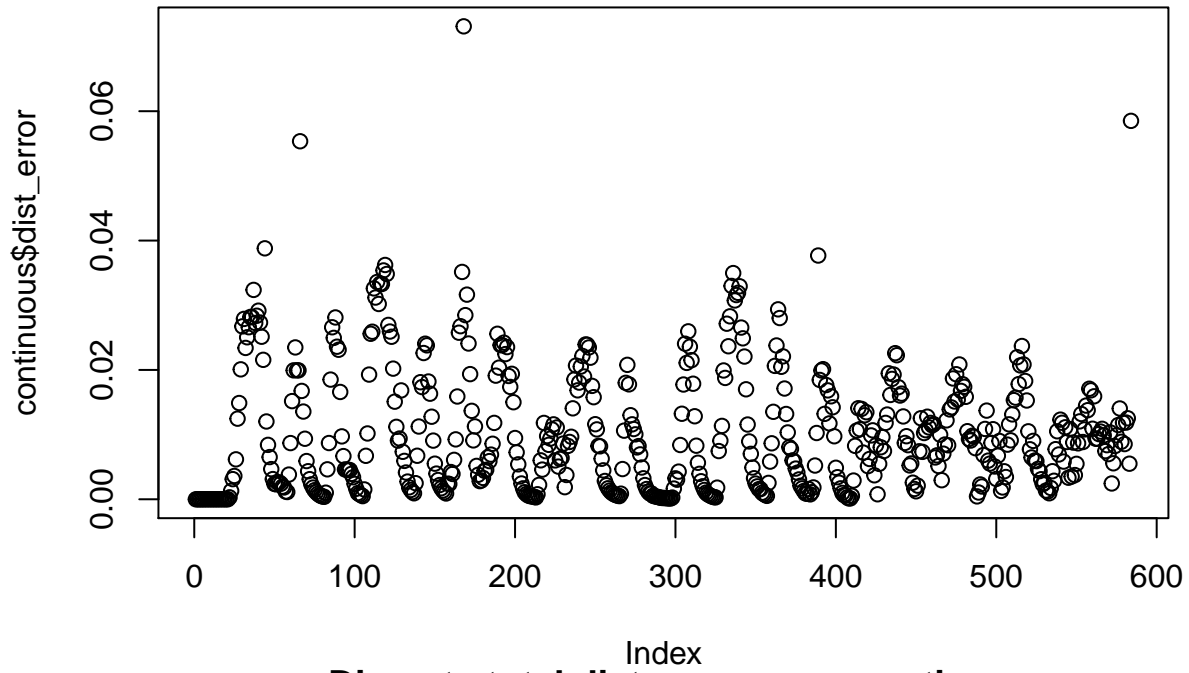
Continuous yaw error over time



Discrete yaw error over time



Continuous total distance error over time



Discrete total distance error over time

