

two__mobile Turtlebot 1 Report

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```
## Loading required package: data.table
```

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

The runtime of this experiment was 0 hours, 0 minutes, and 59.1 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.
##	-4.205e-02	-2.584e-04	4.560e-06	1.173e-03	1.799e-03	5.341e-02

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

##	Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
##	-5.618e-02	-2.355e-03	-1.260e-05	-1.990e-03	1.918e-05	2.905e-02

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

##	Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
##	-6.283000	-0.133400	-0.041150	-0.071500	-0.000242	6.177000

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

##	Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
##	2.800e-07	4.121e-05	2.048e-03	5.783e-03	7.610e-03	5.830e-02

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

##	Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
##	-0.1707000	-0.0000243	0.0000102	0.0063130	0.0185300	0.3377000

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

##	Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
##	-0.2849000	-0.0163000	-0.0000047	-0.0115900	0.0012420	0.2129000

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

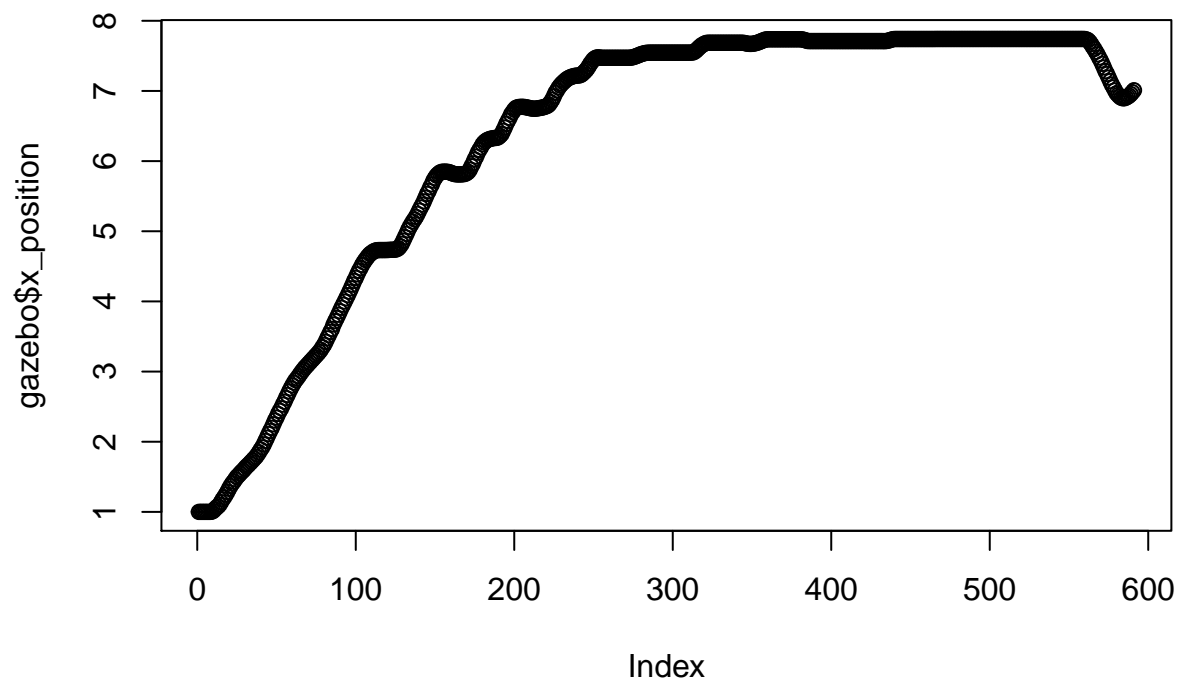
```
##      Min.   1st Qu.   Median     Mean  3rd Qu.     Max.
## -6.25600 -0.54260 -0.10660 -0.00706  0.03019  6.28200
```

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

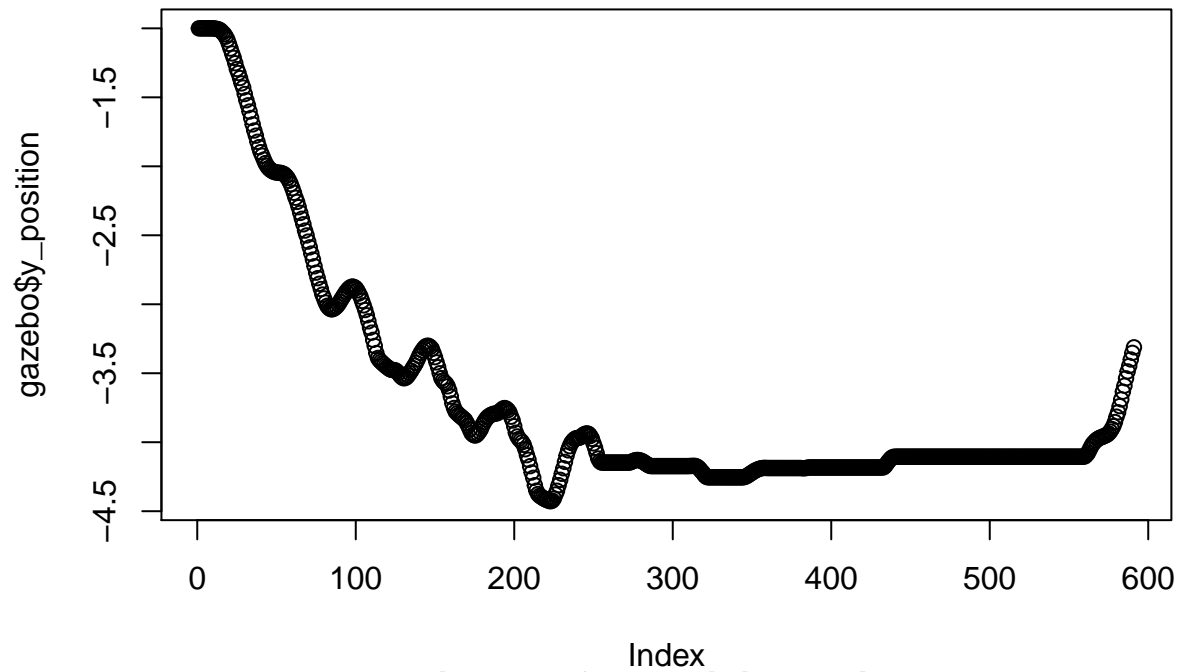
```
##      Min.   1st Qu.   Median     Mean  3rd Qu.     Max.
## 0.0000002 0.0000192 0.0145200 0.0361200 0.0518400 0.3992000
```

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

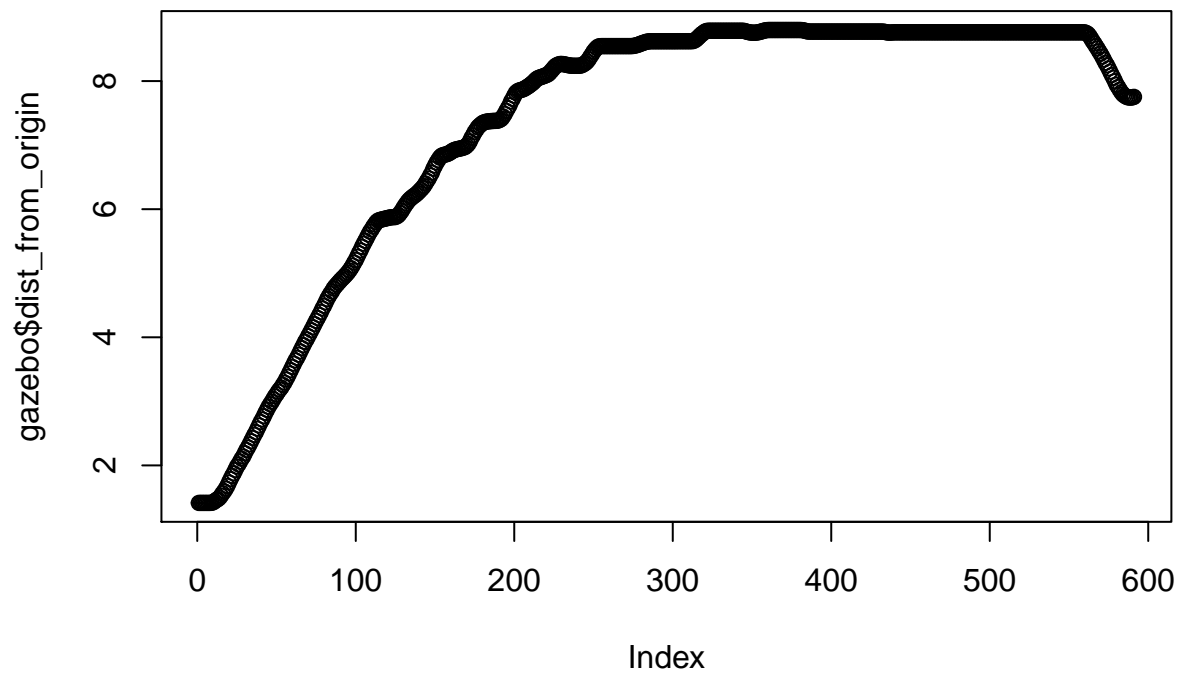
X coordinate of robot over time



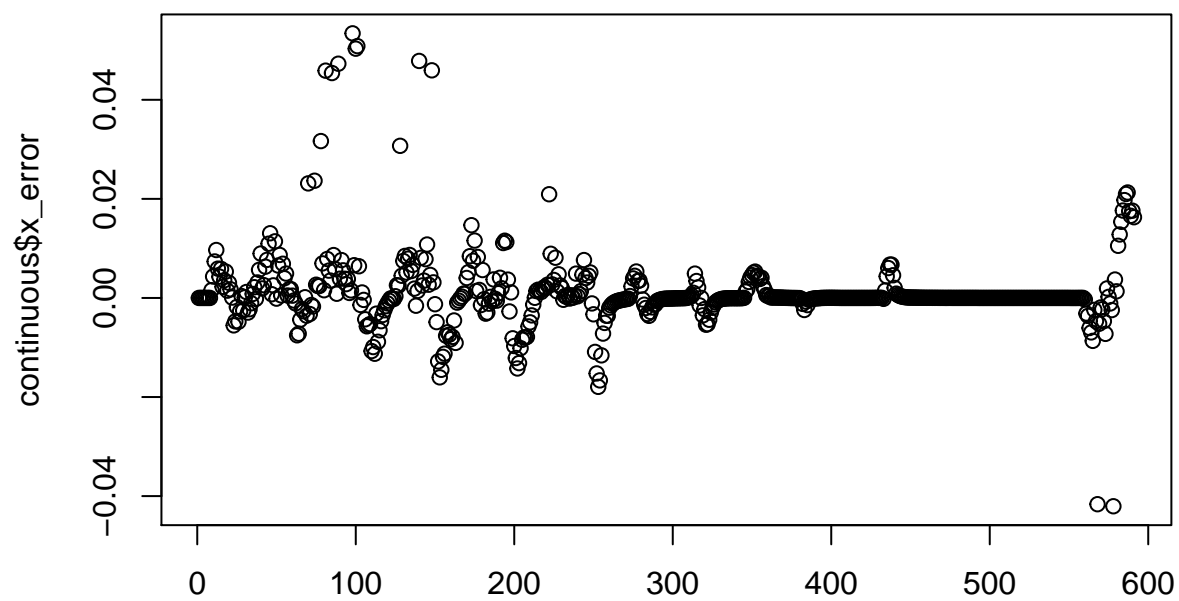
Y coordinate of robot over time



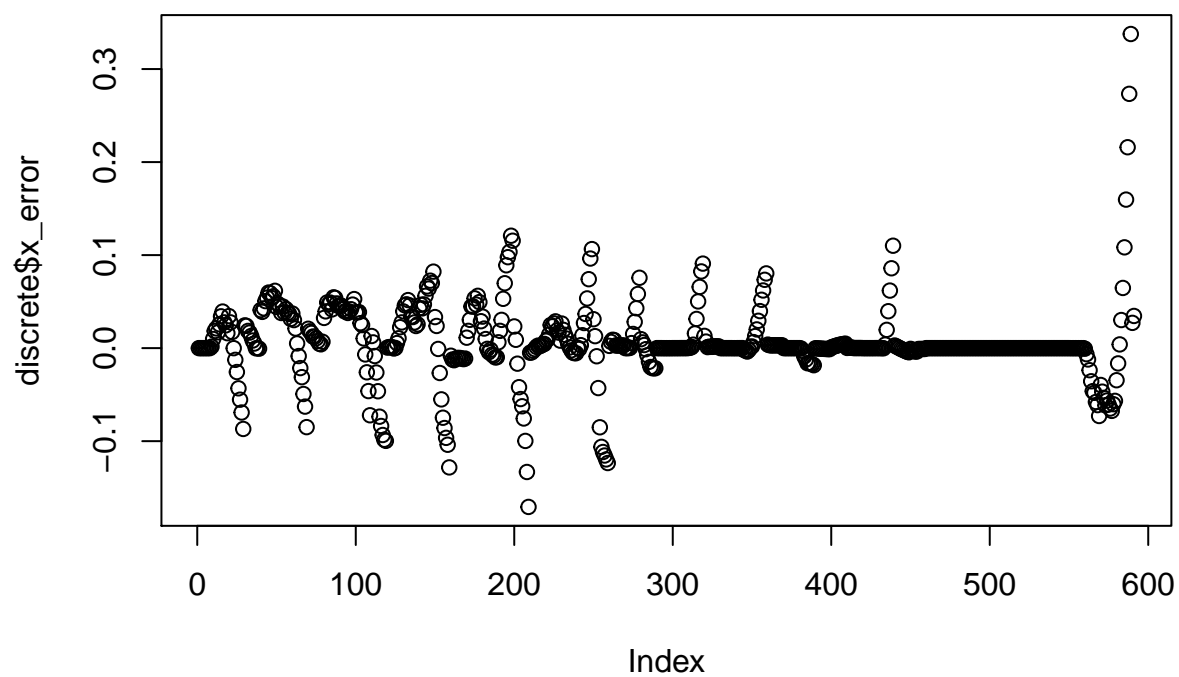
Distance from origin vs. time



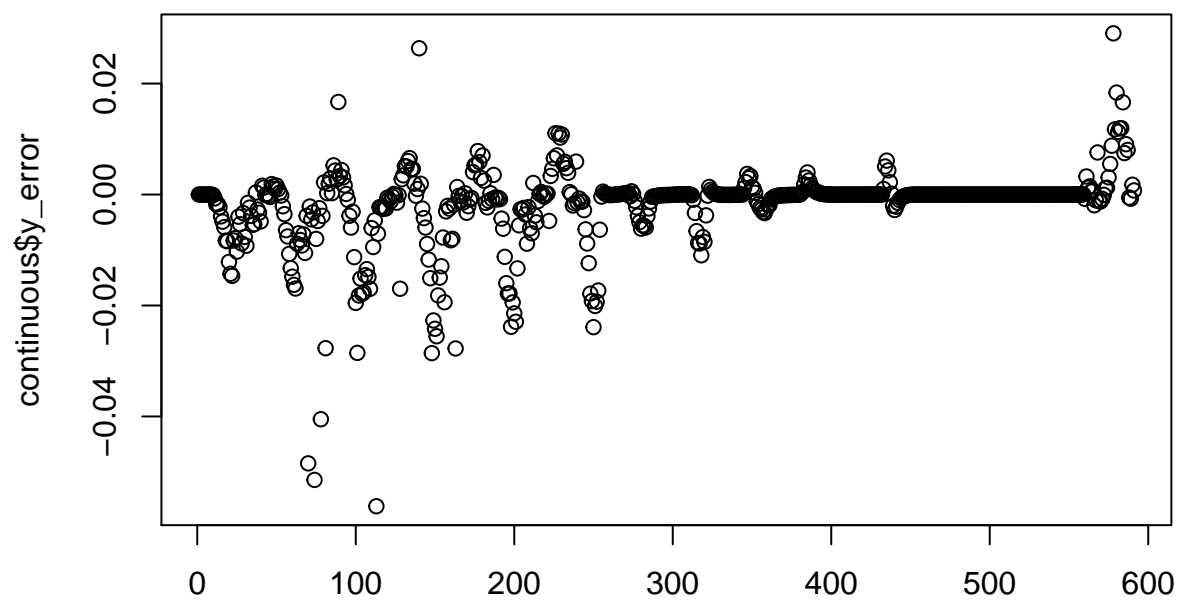
Continuous x_{error} over time



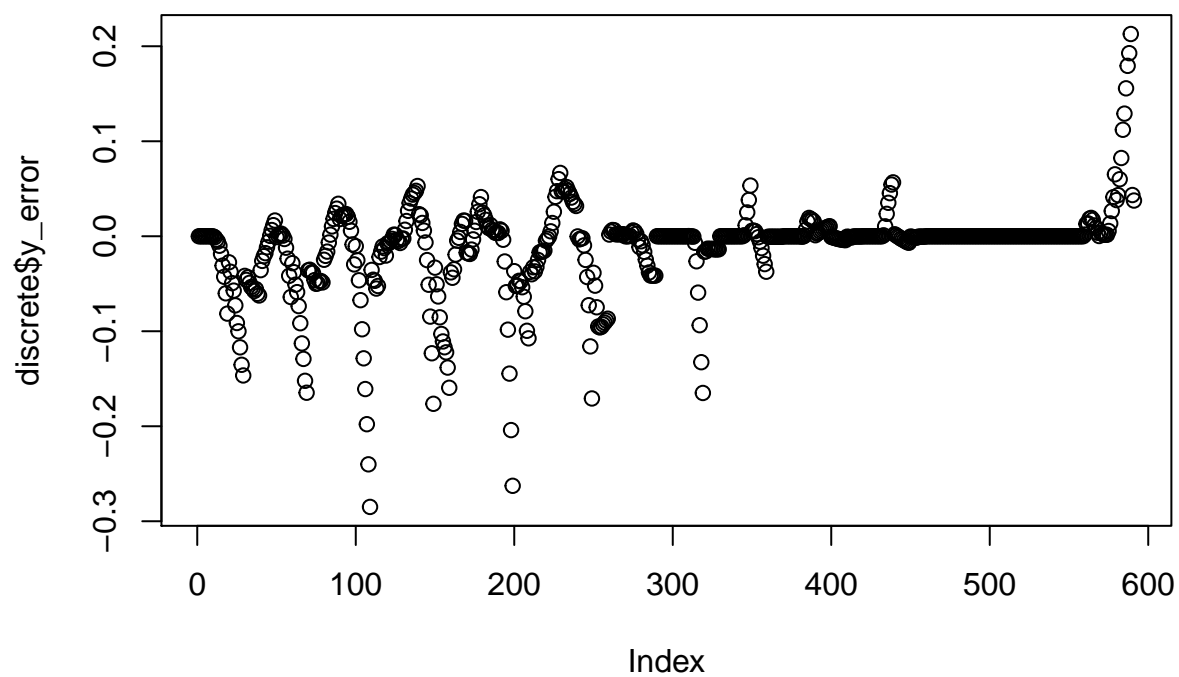
Discrete x_{error} over time



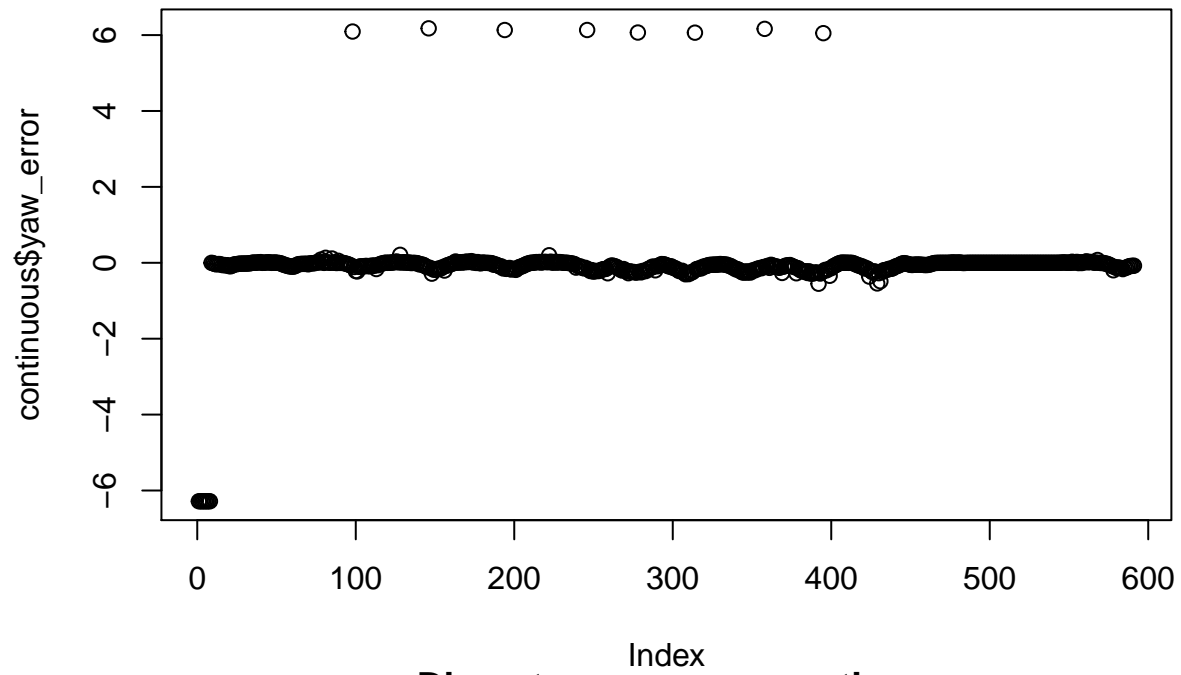
Continuous y_error over time



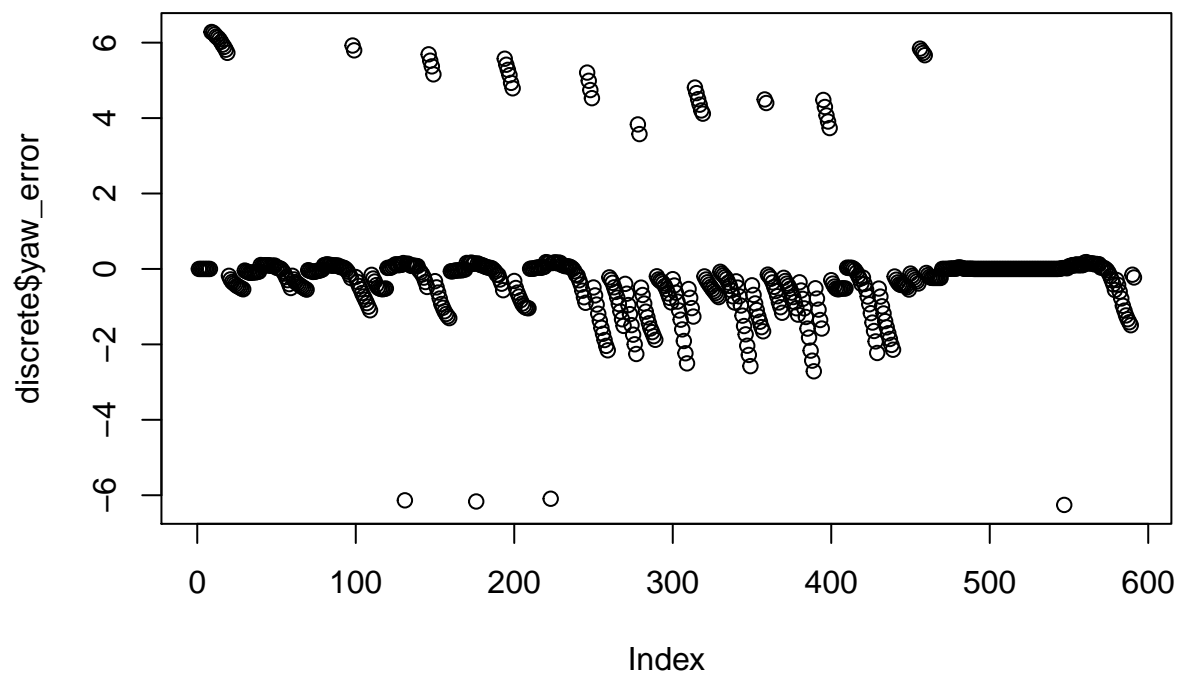
Discrete y_error over time



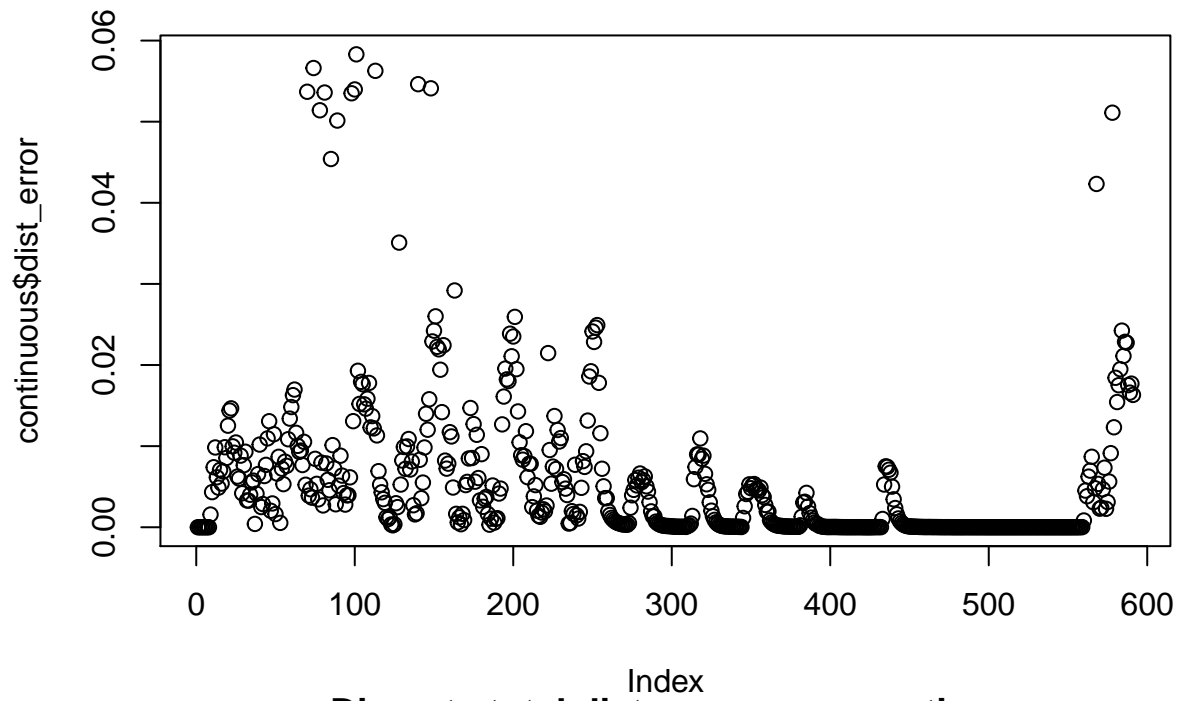
Continuous yaw error over time



Discrete yaw error over time



Continuous total distance error over time



Discrete total distance error over time

