

two_stationary Turtlebot 1 Report

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

The runtime of this experiment was 0 hours, 0 minutes, and 58.6 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.
## 2.592e-06 2.763e-06 2.812e-06 2.806e-06 2.855e-06 2.994e-06
```

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

```
##      Min.   1st Qu.   Median     Mean   3rd Qu.     Max.
## 2.129e-10 4.011e-10 5.910e-10 7.252e-10 1.038e-09 1.443e-09
```

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

```
##      Min.   1st Qu.   Median     Mean   3rd Qu.     Max.
## -6.283000 -4.712000  0.000160 -1.576000  0.000224  0.000287
```

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

```
##      Min.   1st Qu.   Median     Mean   3rd Qu.     Max.
## 2.592e-06 2.763e-06 2.812e-06 2.806e-06 2.855e-06 2.994e-06
```

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

```
##      Min.   1st Qu.   Median     Mean   3rd Qu.     Max.
## 1.063e-06 2.900e-06 4.772e-06 5.043e-06 7.180e-06 9.066e-06
```

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

```
##      Min.   1st Qu.   Median     Mean   3rd Qu.     Max.
## 8.831e-11 5.726e-10 1.003e-09 1.300e-09 1.758e-09 4.411e-09
```

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

```
##      Min.   1st Qu.   Median     Mean   3rd Qu.     Max.
## -3.340e-05 -4.485e-06 3.168e-06 3.482e-06 1.144e-05 5.044e-05
```

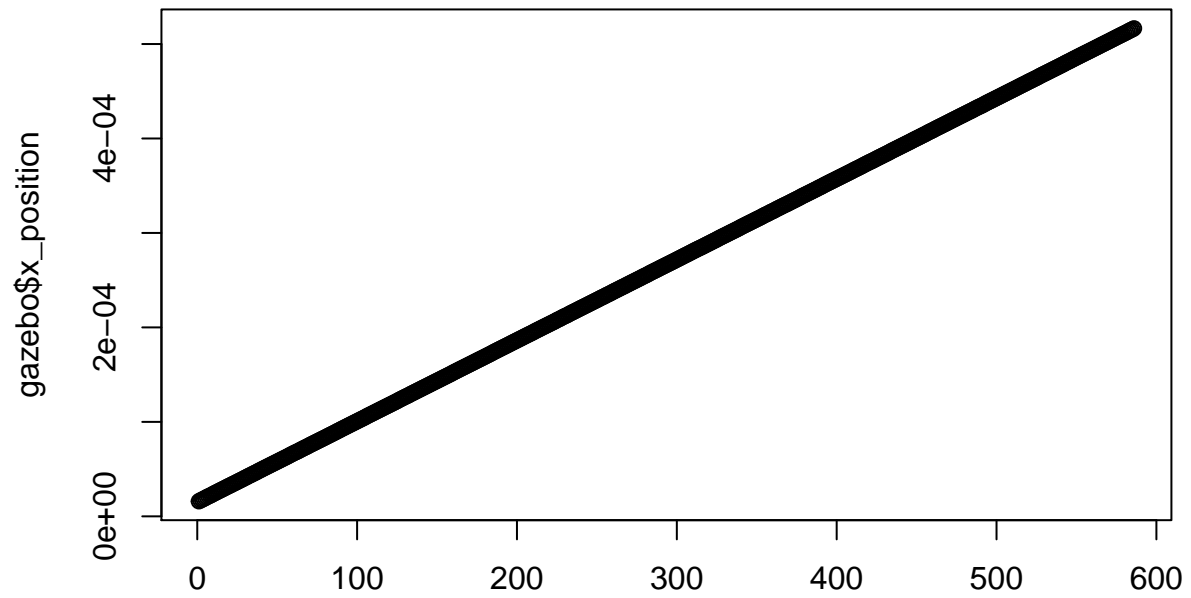
```
summary(discrete$dist_error)
```

```
##      Min.   1st Qu.   Median     Mean   3rd Qu.     Max.
## 1.063e-06 2.900e-06 4.772e-06 5.043e-06 7.180e-06 9.066e-06
```

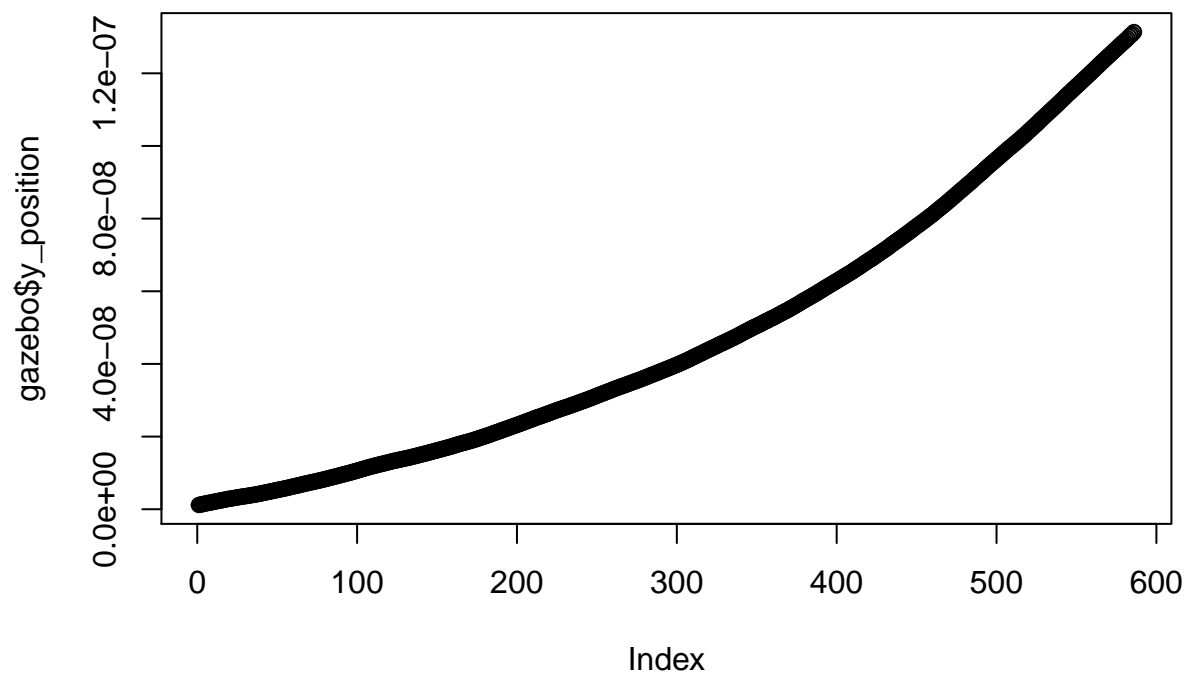
```
#sum(continuous$dist_error <= 0.25) / length(continuous$dist_error)
```

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

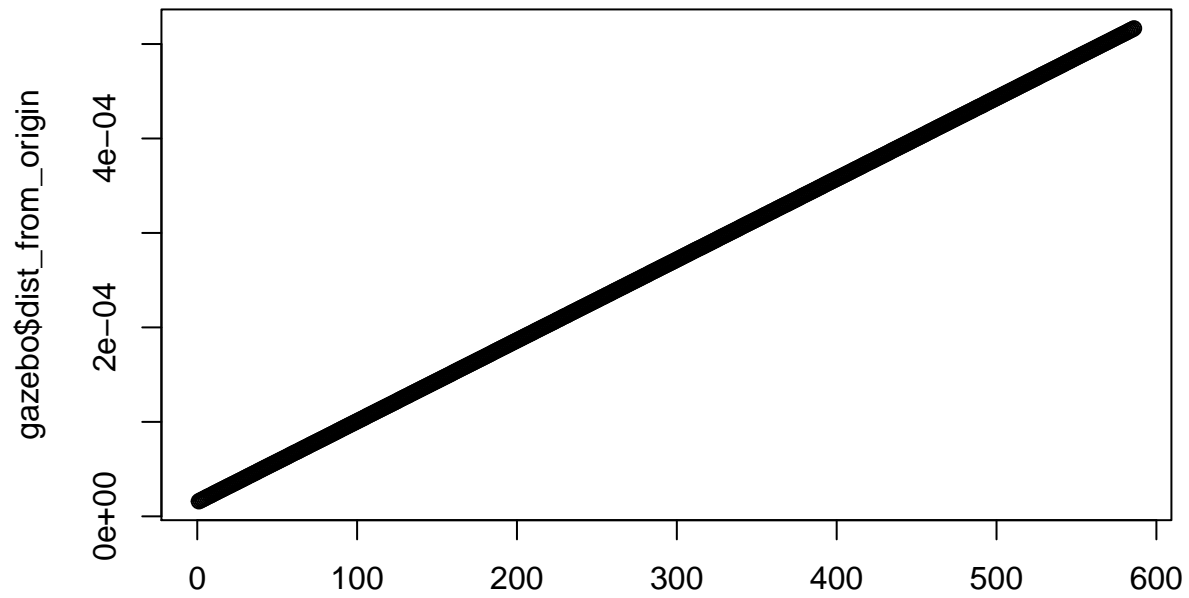
X coordinate of robot over time



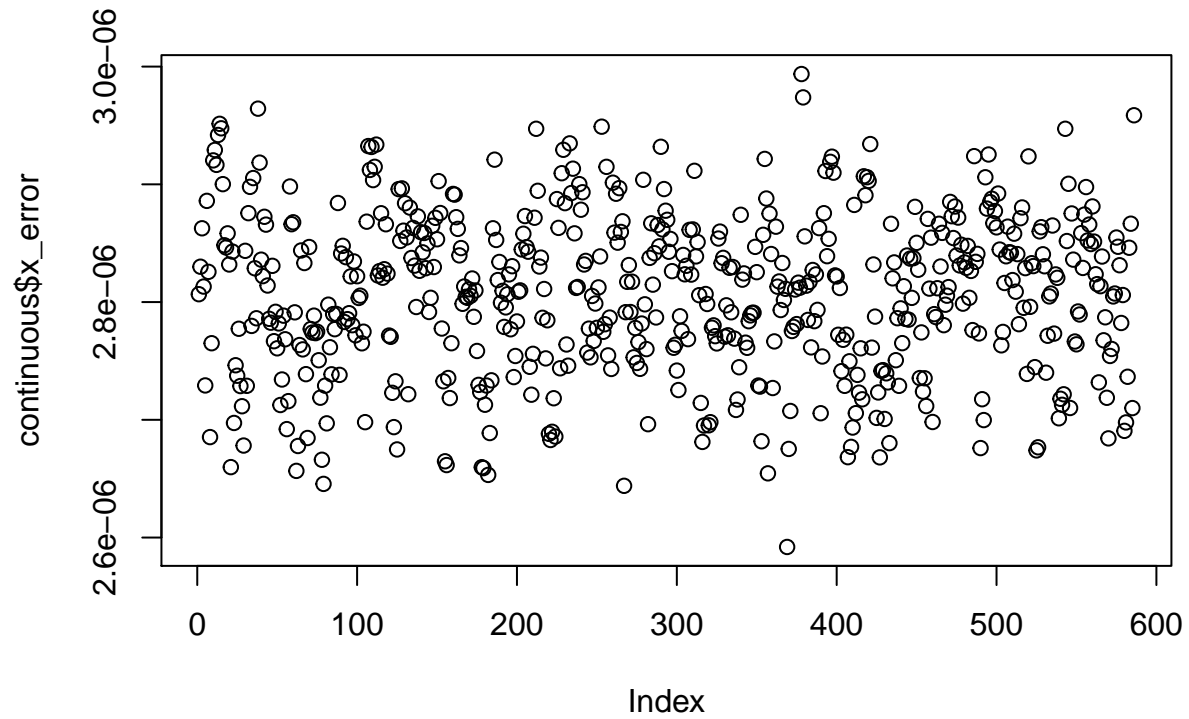
Y coordinate of robot over time



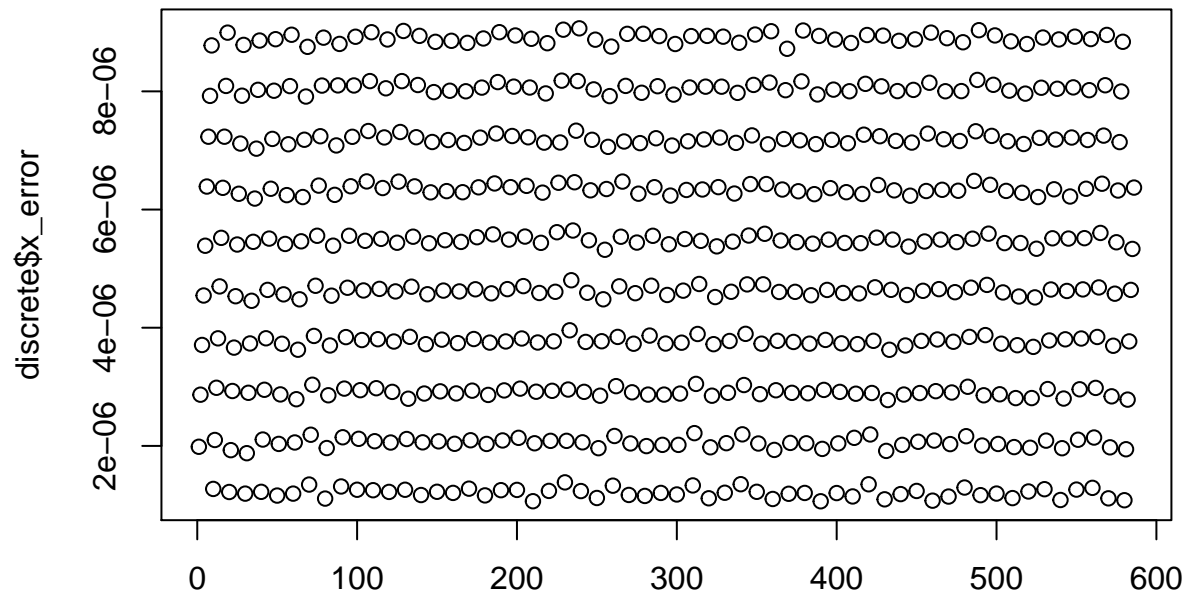
Distance from origin vs. time



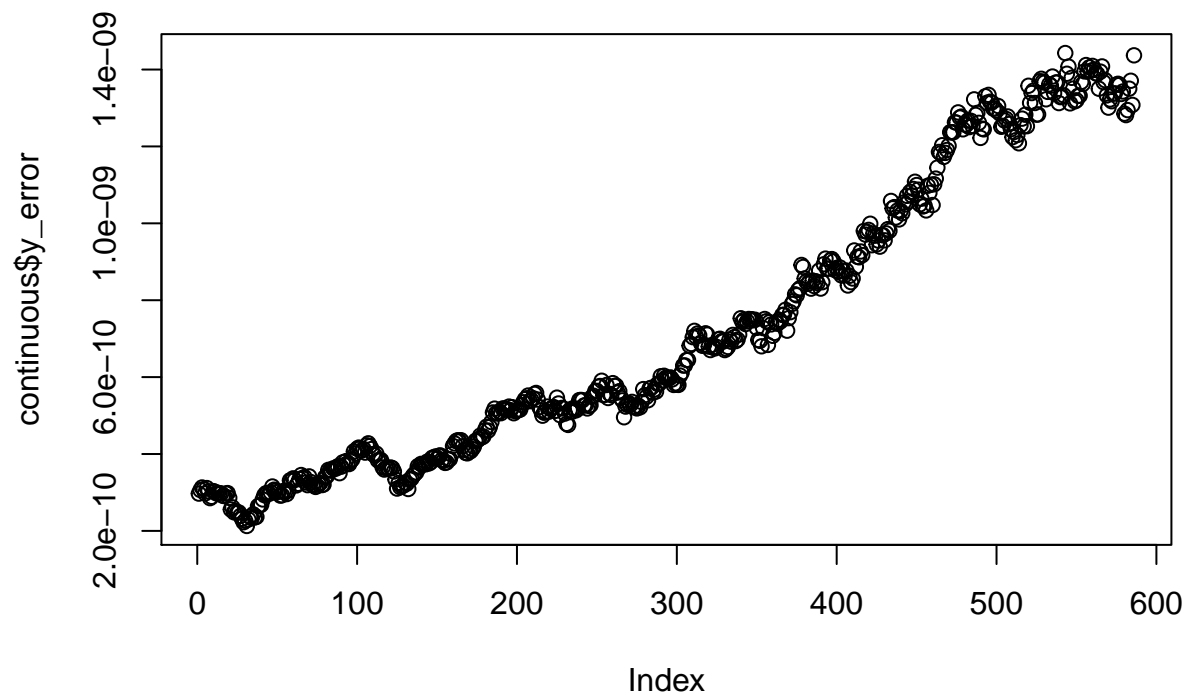
Continuous x_error over time



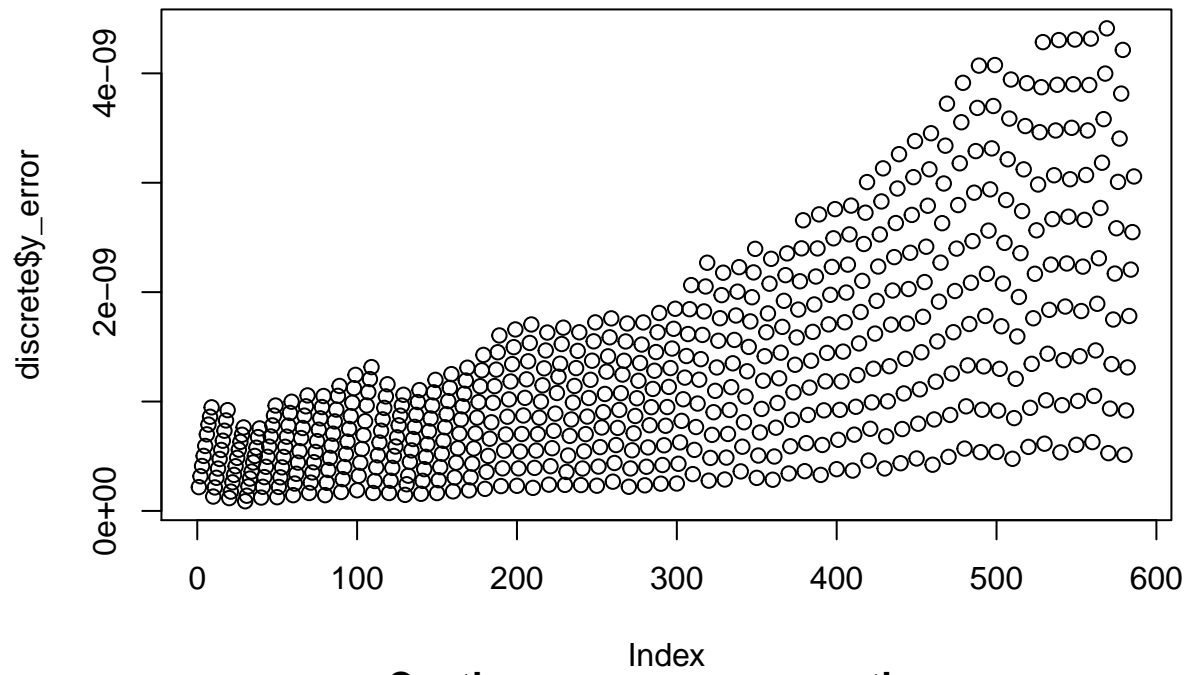
Discrete x_error over time



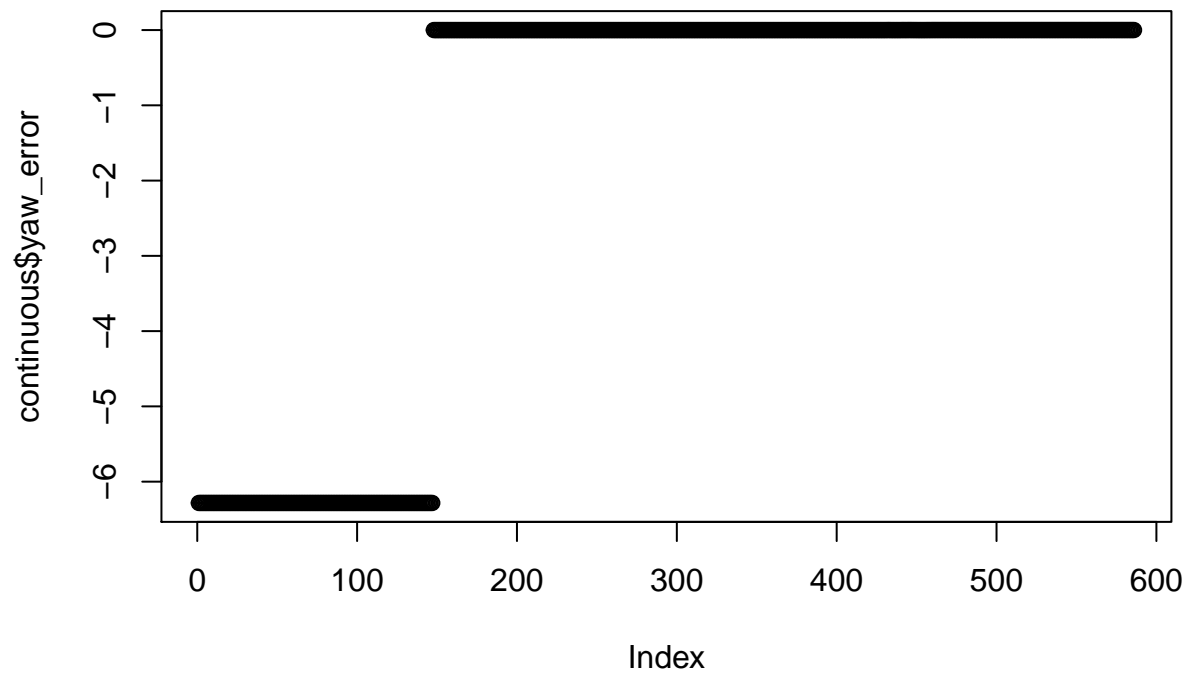
Continuous y_error over time



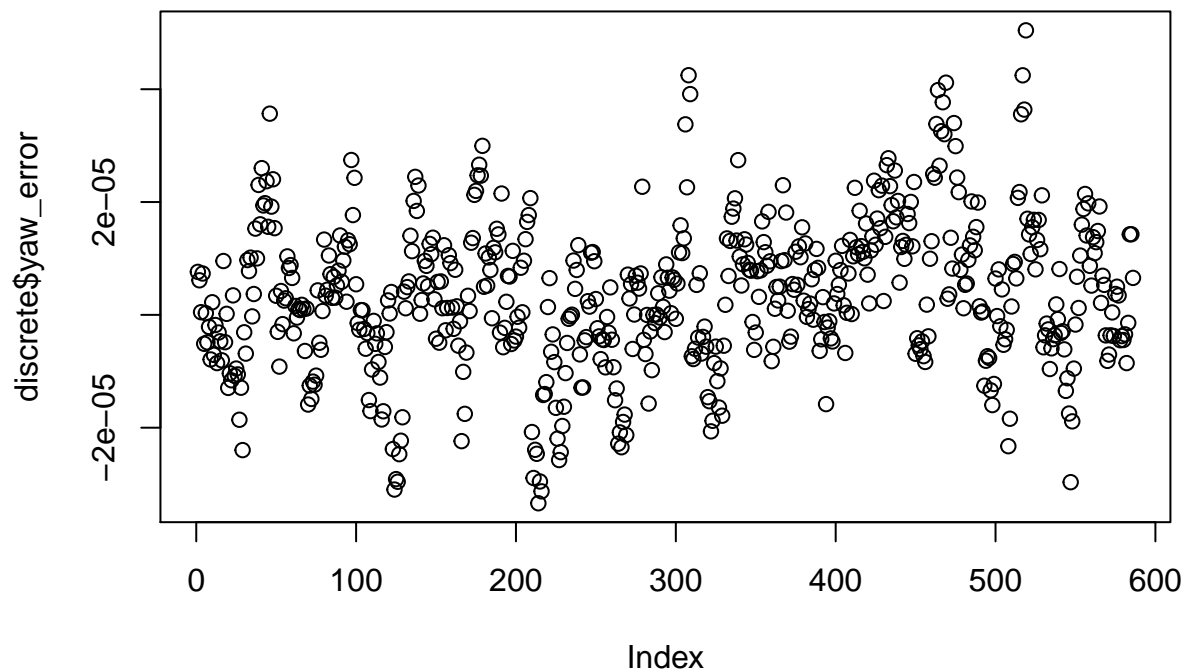
Discrete y_error over time



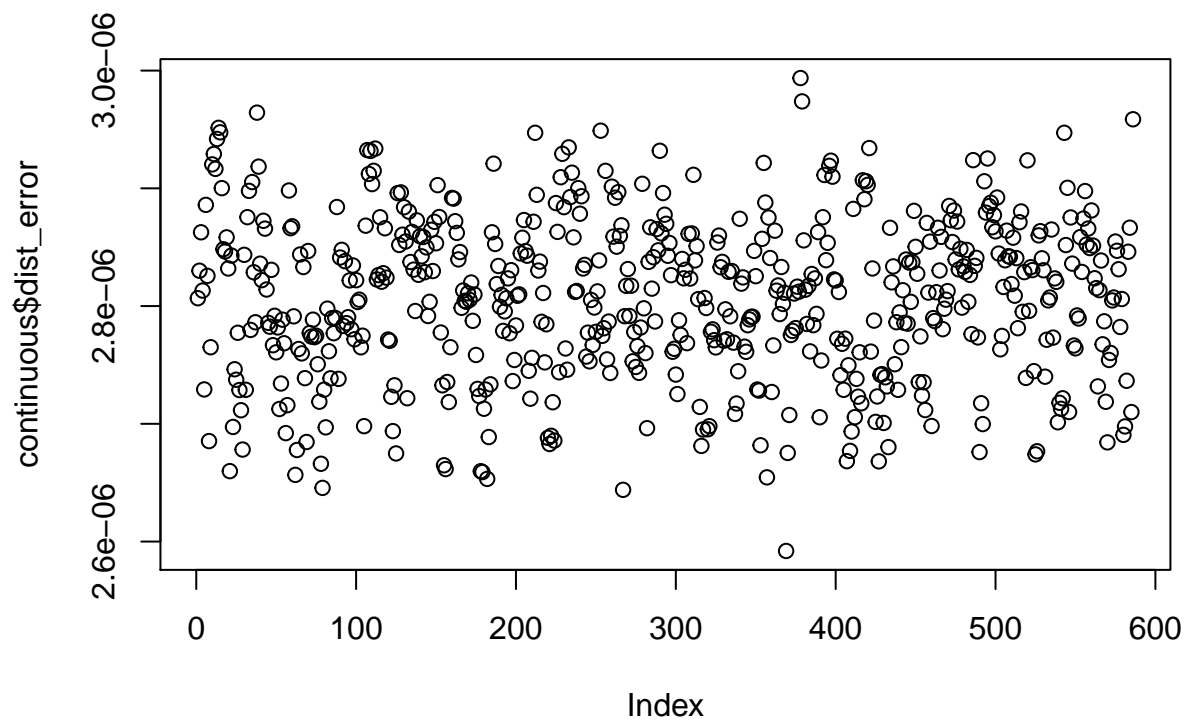
Continuous yaw error over time



Discrete yaw error over time



Continuous total distance error over time



Discrete total distance error over time

