

one_stationary Turtlebot 1 Report

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

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.
## 2.362e-06 2.499e-06 2.553e-06 2.552e-06 2.602e-06 2.730e-06
```

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

```
##      Min.   1st Qu.   Median     Mean   3rd Qu.     Max.
## 2.416e-10 4.190e-10 5.631e-10 6.346e-10 8.412e-10 1.090e-09
```

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

```
##      Min.   1st Qu.   Median     Mean   3rd Qu.     Max.
## -6.283000 0.000148 0.000164 -1.151000 0.000197 0.000243
```

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

```
##      Min.   1st Qu.   Median     Mean   3rd Qu.     Max.
## 2.362e-06 2.499e-06 2.553e-06 2.552e-06 2.602e-06 2.730e-06
```

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

```
##      Min.   1st Qu.   Median     Mean   3rd Qu.     Max.
## 6.793e-07 2.564e-06 4.425e-06 4.697e-06 6.828e-06 8.694e-06
```

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

```
##      Min.   1st Qu.   Median     Mean   3rd Qu.     Max.
## 8.187e-11 5.509e-10 1.002e-09 1.166e-09 1.601e-09 3.539e-09
```

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

```
##      Min.   1st Qu.   Median     Mean   3rd Qu.     Max.
## -3.371e-05 -4.784e-06 3.366e-06 3.426e-06 1.119e-05 3.758e-05
```

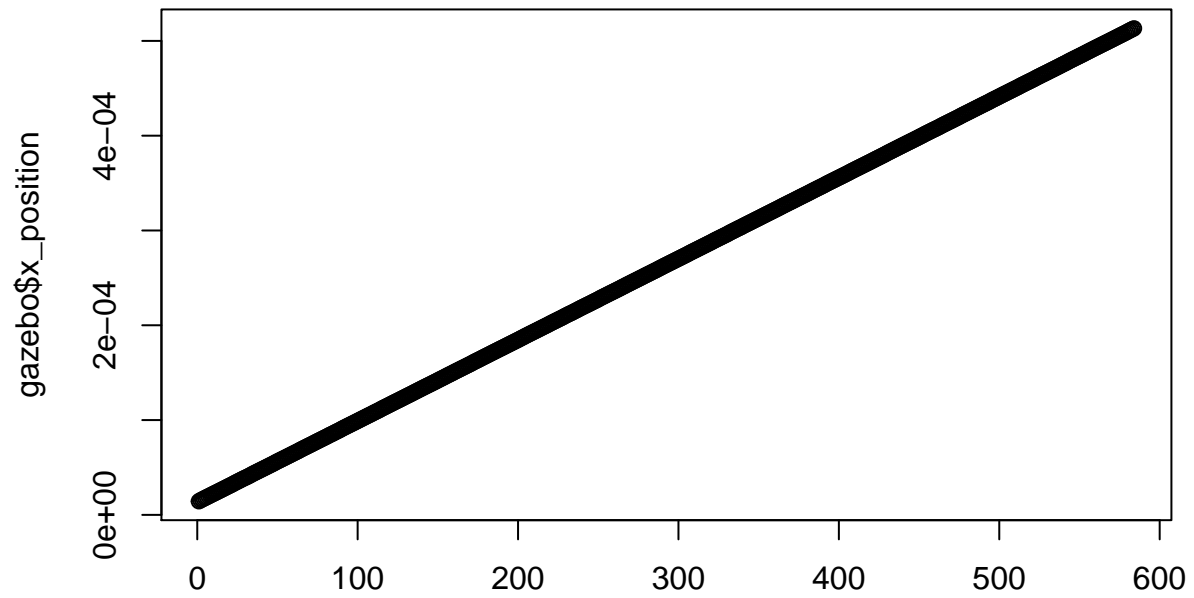
```
summary(discrete$dist_error)
```

```
##      Min.   1st Qu.   Median     Mean   3rd Qu.     Max.
## 6.793e-07 2.564e-06 4.425e-06 4.697e-06 6.828e-06 8.694e-06
```

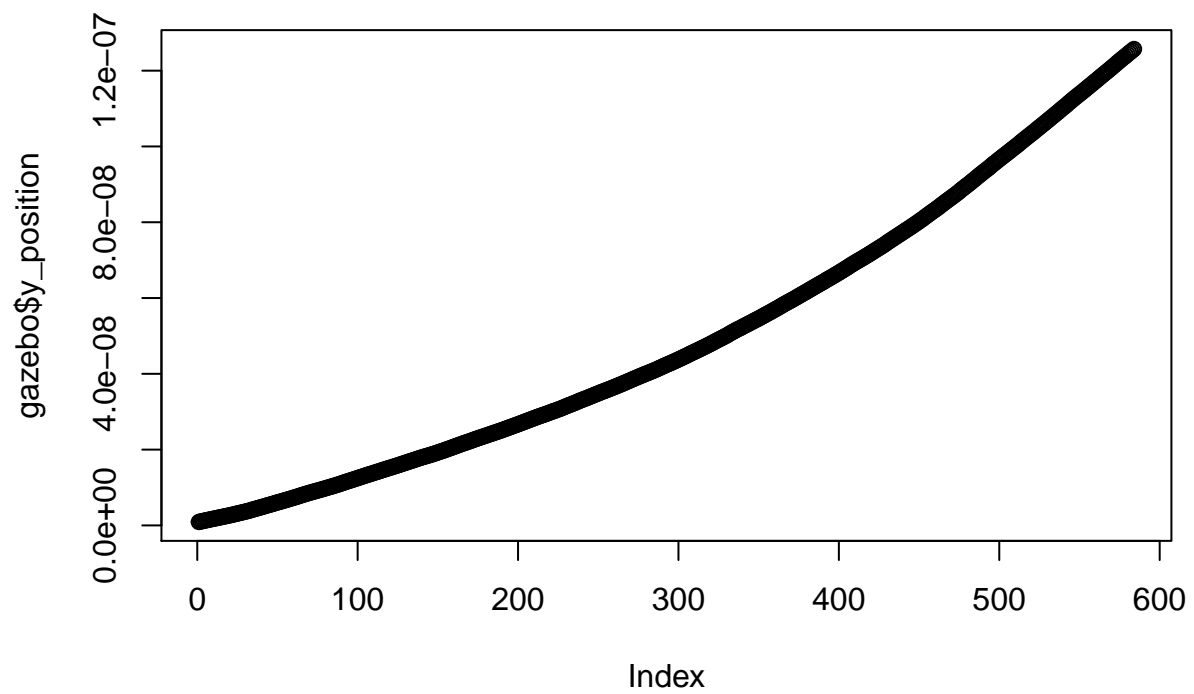
```
#sum(continuous$dist_error <= 0.25) / length(continuous$dist_error)
```

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

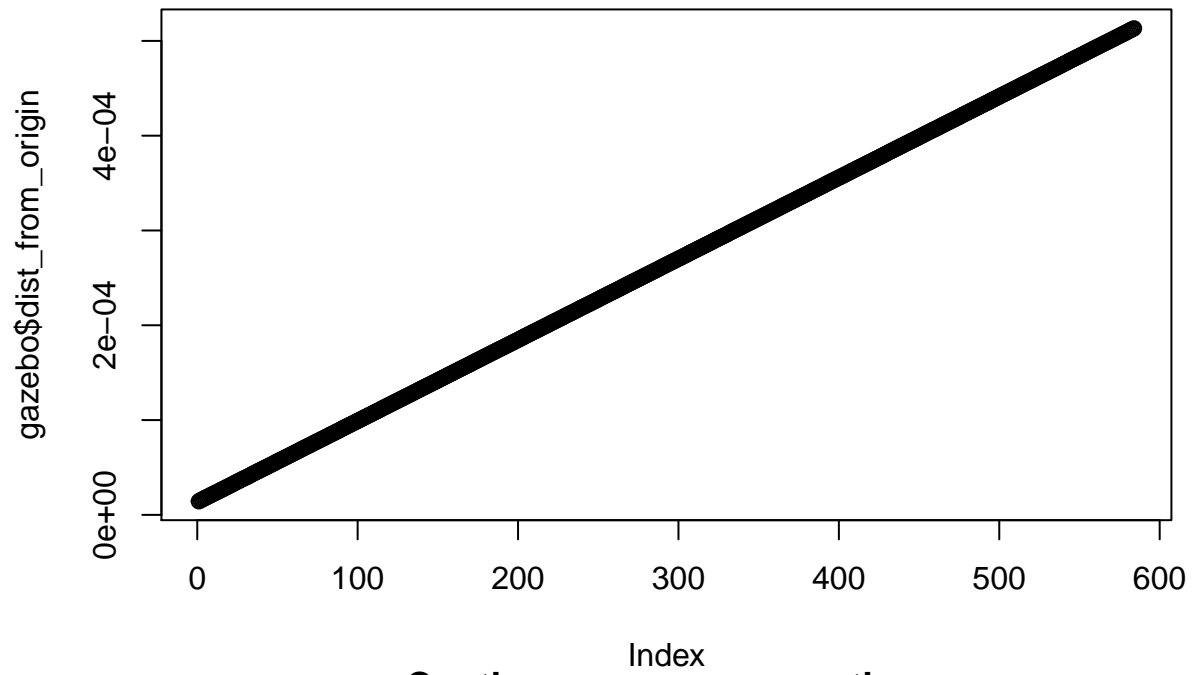
X coordinate of robot over time



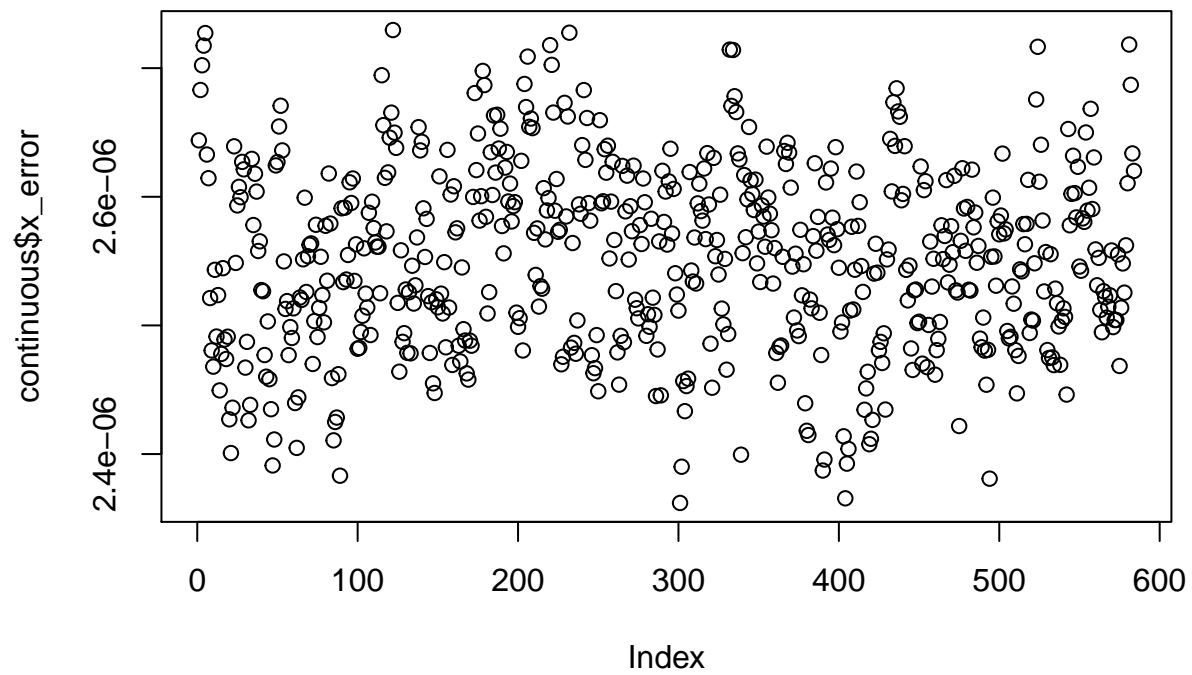
Y coordinate of robot over time



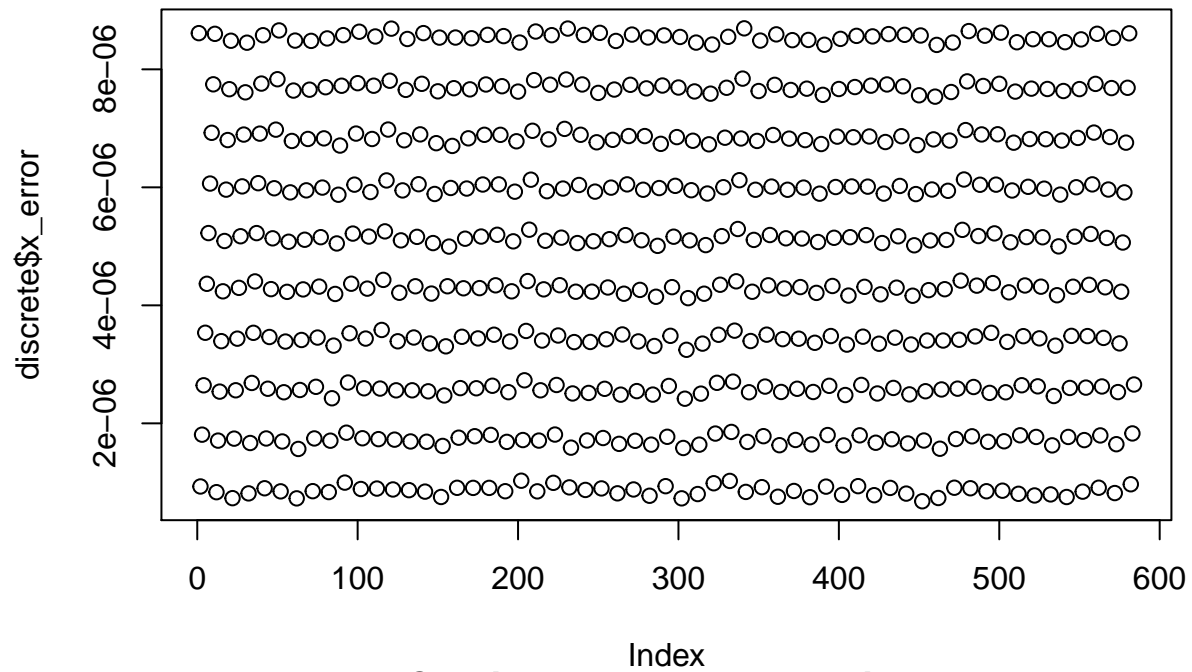
Distance from origin vs. time



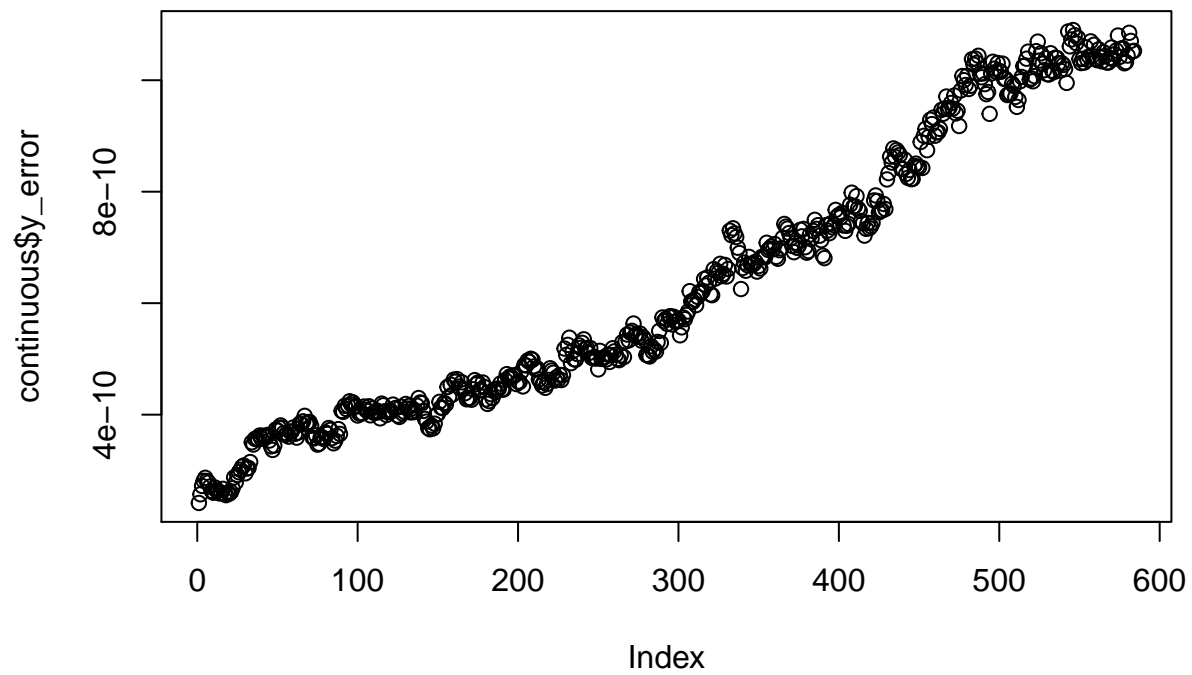
Continuous x_error over time



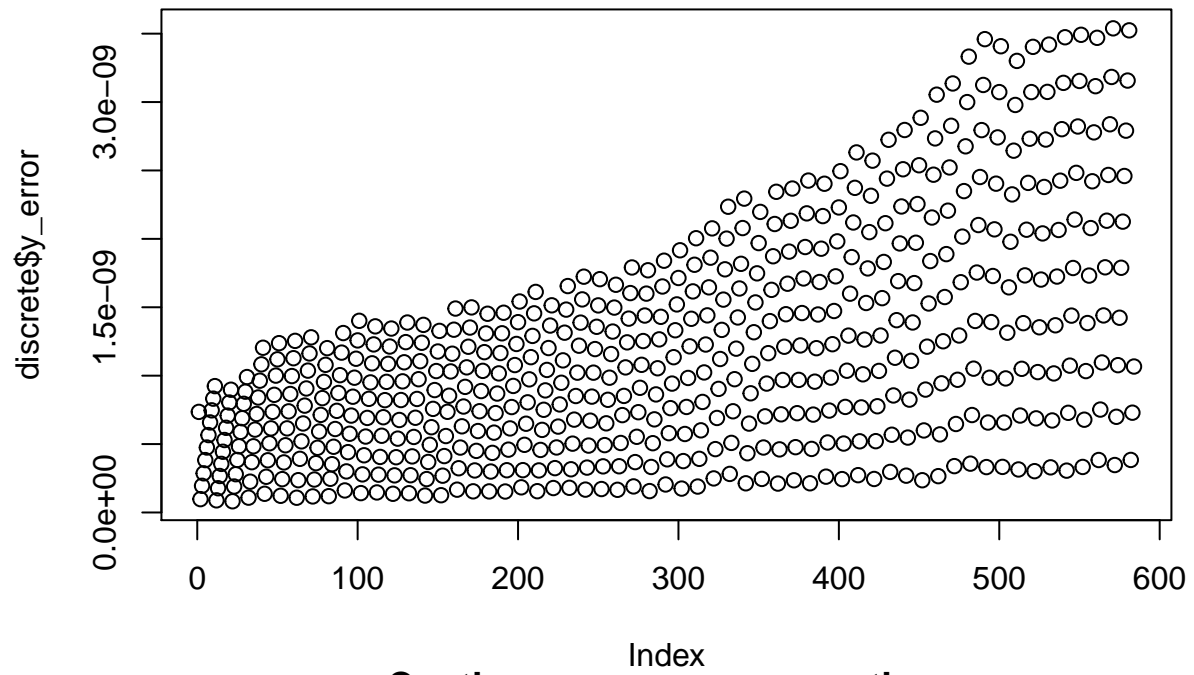
Discrete x_error over time



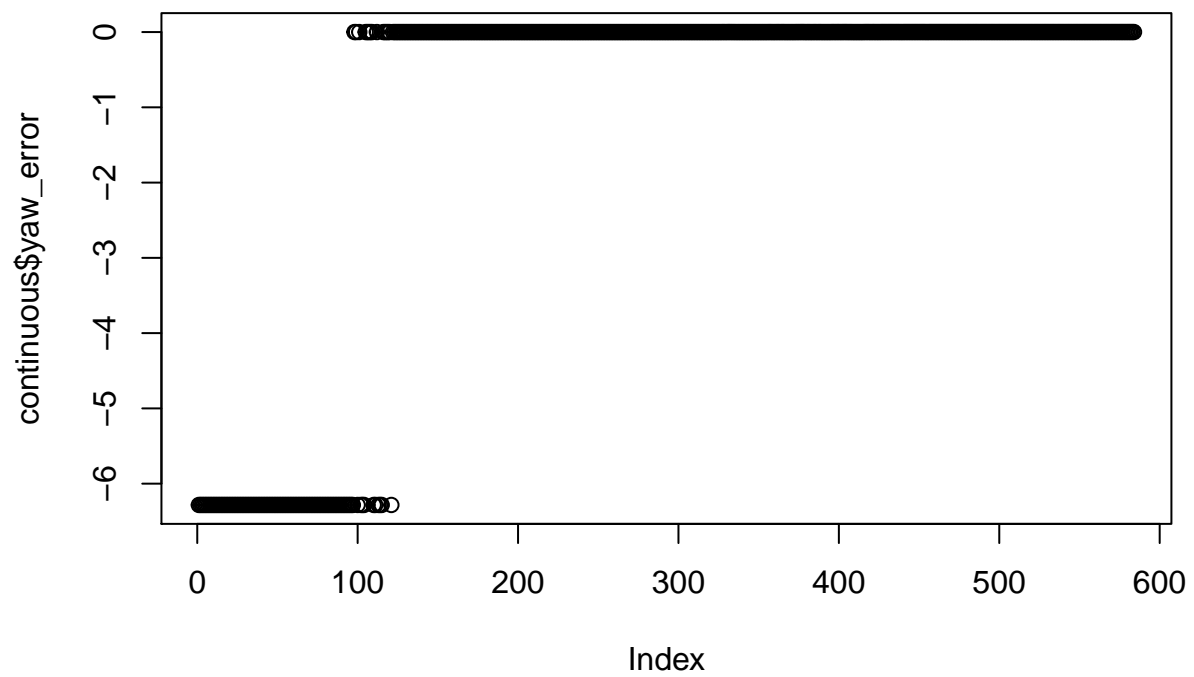
Continuous y_error over time

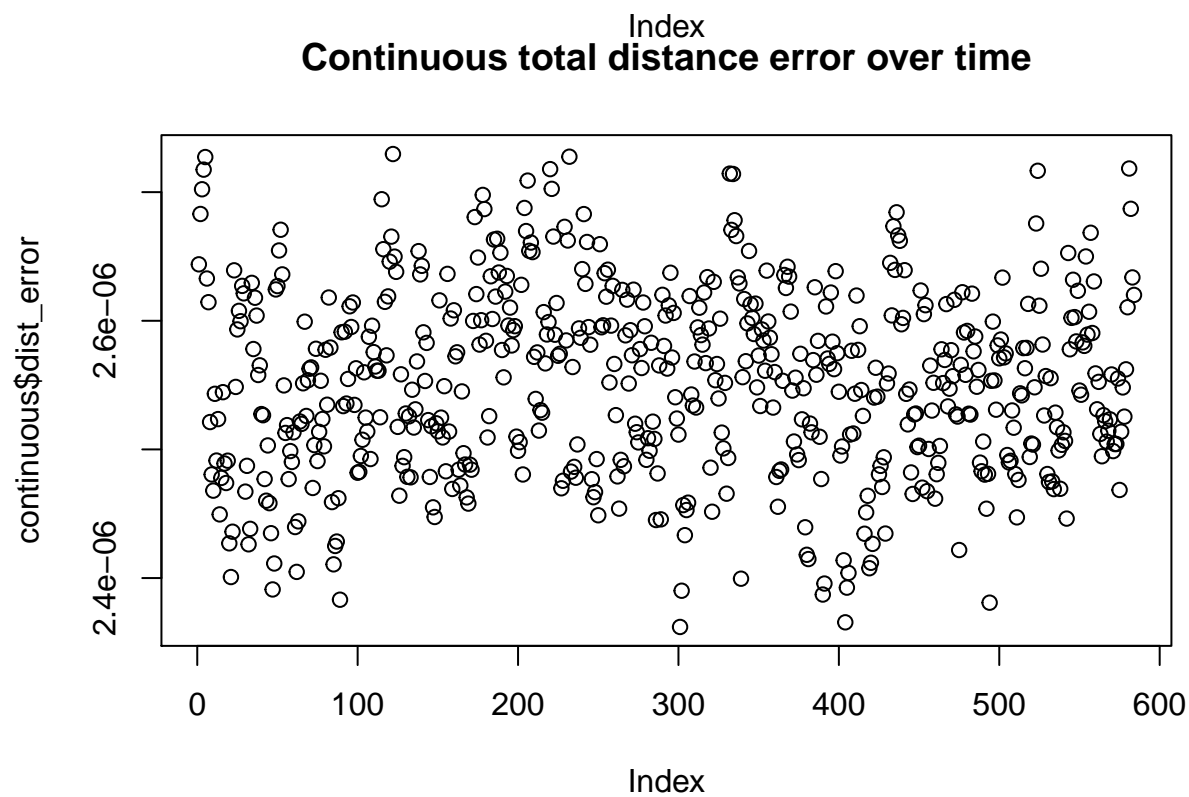
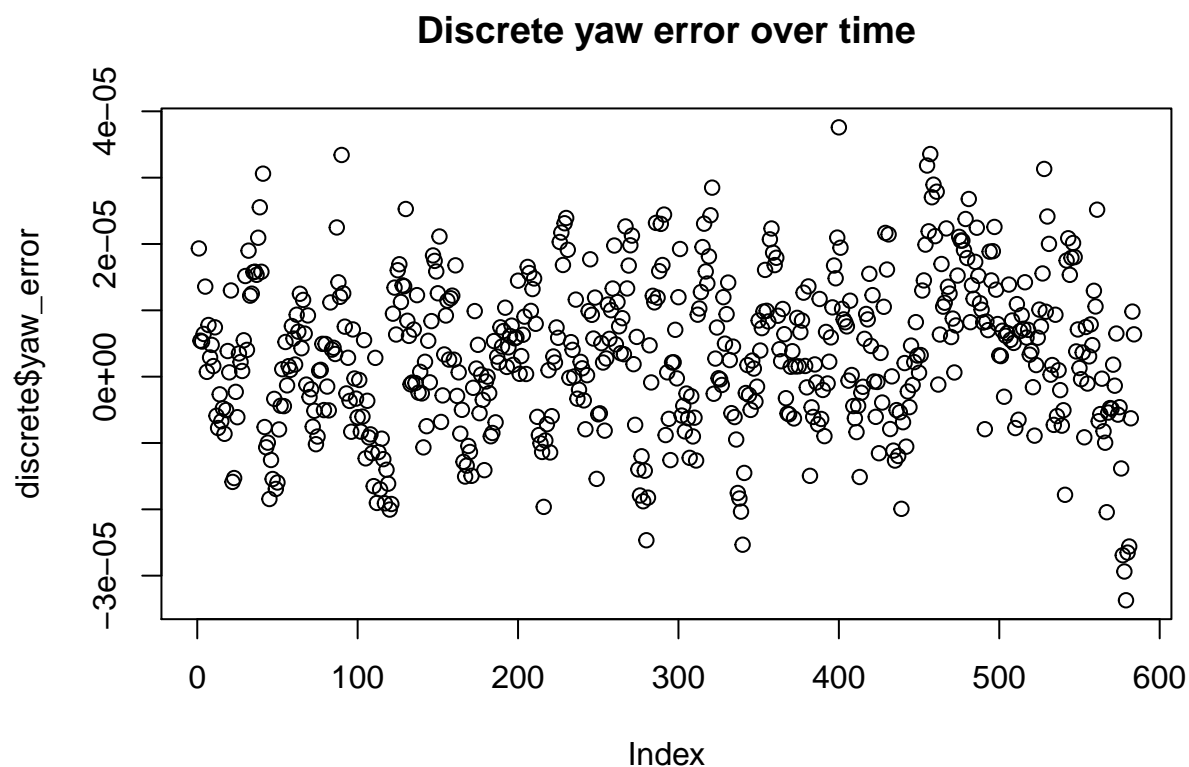


Discrete y_error over time



Continuous yaw error over time





Discrete total distance error over time

