two_stationary_noisy_false Experiment Report

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This is a summary of the data from the two_stationary_noisy_false experiment.

Shown below is the summary of the error of all robots combined 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.
## 1.978e-06 2.207e-06 2.415e-06 2.527e-06 2.848e-06 3.110e-06
```

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

```
##        Min.    1st Qu.     Median       Mean    3rd Qu.       Max.
## -4.921e-11  1.532e-08  3.087e-08  3.105e-08  4.533e-08  7.417e-08
```

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

```
##      Min.   1st Qu.    Median      Mean   3rd Qu.      Max.
## 1.978e-06 2.207e-06 2.415e-06 2.527e-06 2.848e-06 3.110e-06
```

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

```
##        Min.    1st Qu.     Median       Mean    3rd Qu.       Max.
## -2.321e-05  4.624e-06  8.895e-06  1.321e-02  3.019e-02  3.053e-02
```

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

```
##        Min.    1st Qu.     Median       Mean    3rd Qu.       Max.
## -2.382e-02 -1.196e-02  5.000e-09 -5.779e-03  5.400e-08  1.155e-05
```

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

```
##      Min.   1st Qu.    Median      Mean   3rd Qu.      Max.
## 1.100e-07 4.630e-06 8.900e-06 1.458e-02 3.196e-02 3.867e-02
```

```
if (params$robot >= 2) {
    summary(external_data_averages)
}
```

```
##      Length Class  Mode
## [1,] 1      -none- numeric
## [2,] 1      -none- numeric
```

Shown below are plots representing the robot's motion and error over time.

```
plot(gazebo$x_position, gazebo$y_position,
     main = "Ground truth visited locations of robots")
```
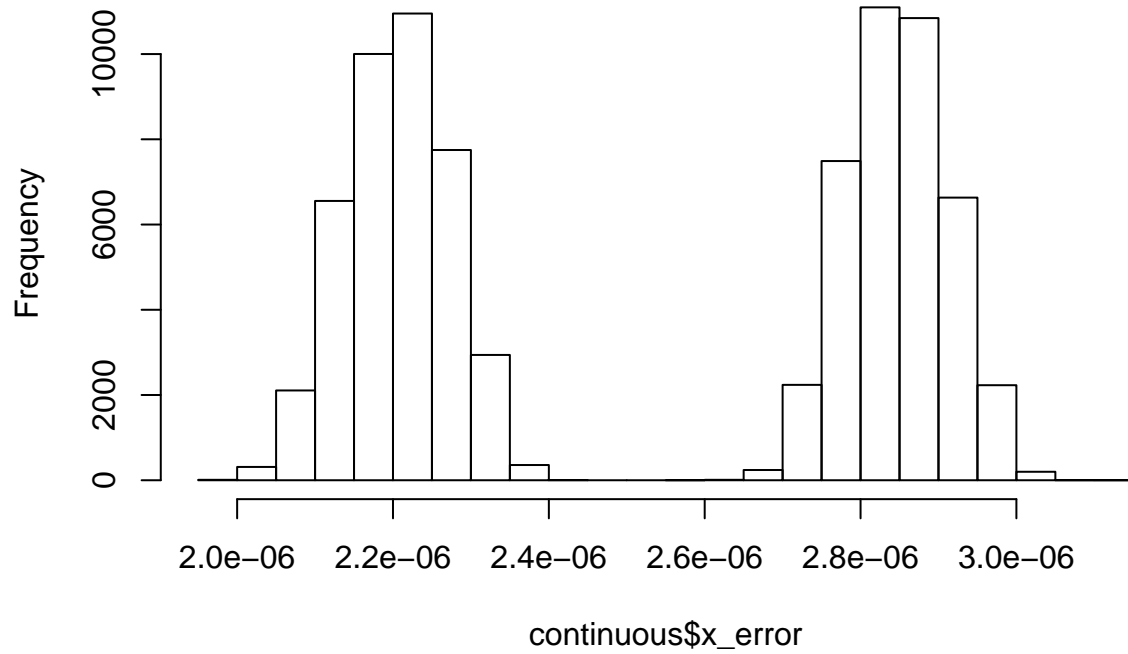
Ground truth visited locations of robots


```
hist(gazebo$dist_from_origin,
     main = "Distance from origin vs. time")
```
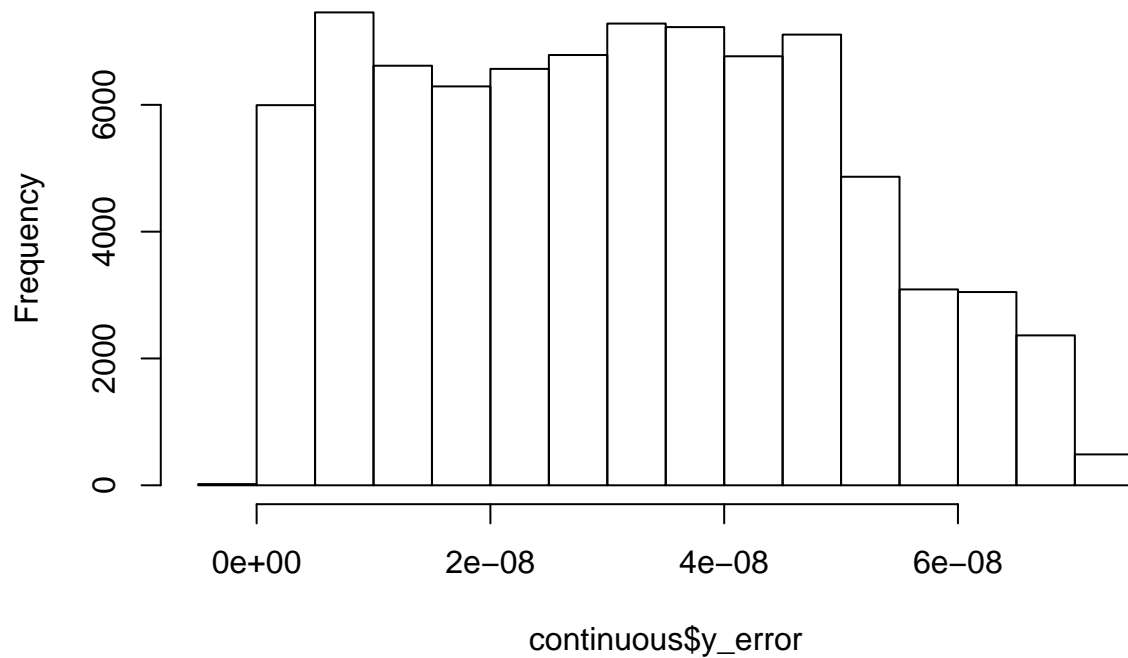
Distance from origin vs. time


```
hist(continuous$x_error,
     main = "Continuous x_error")
```
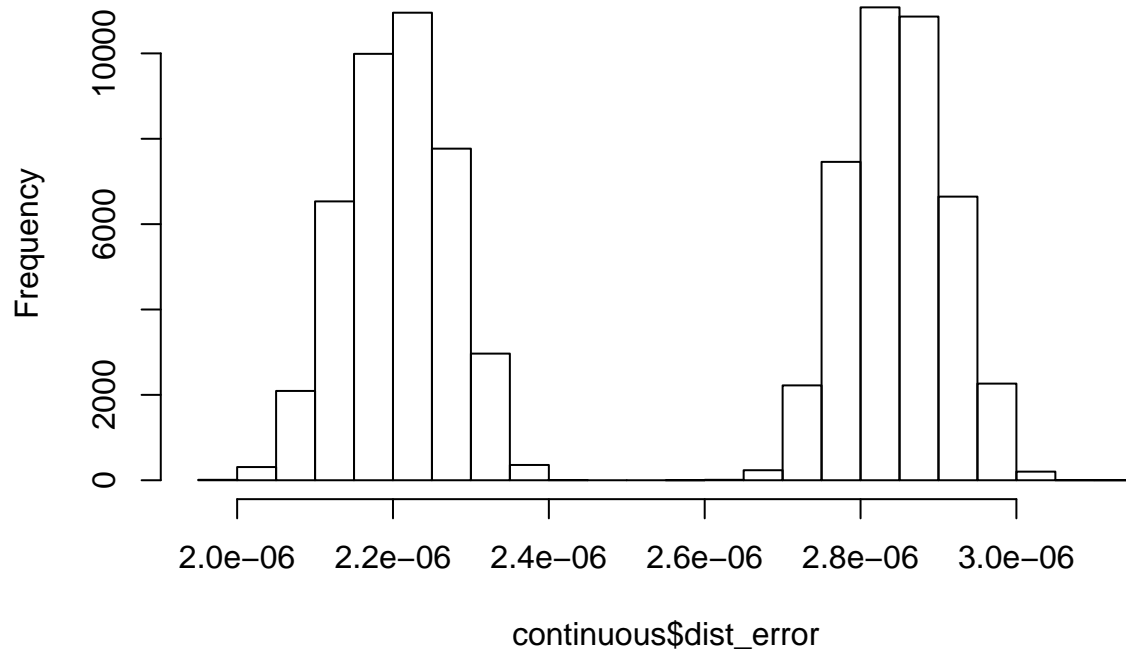
Continuous x_error

continuous$x_error

```r
hist(continuous$y_error,
     main = "Continuous y_error")
```
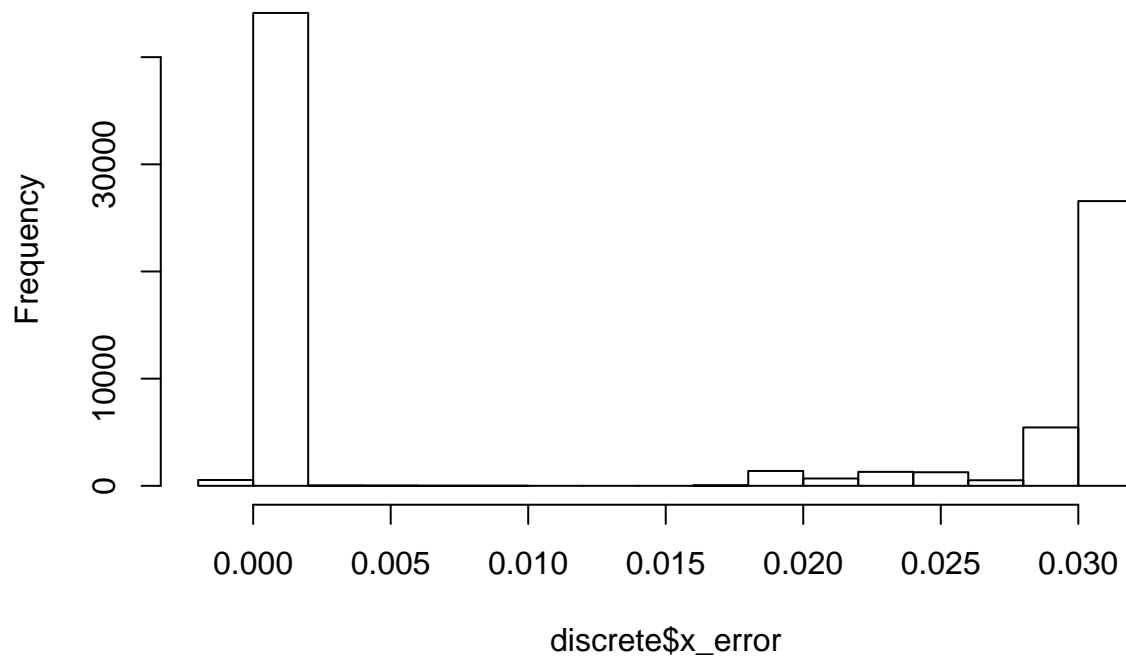
Continuous y_error

continuous$y_error

```r
hist(continuous$dist_error,
     main = "Continuous total distance error")
```
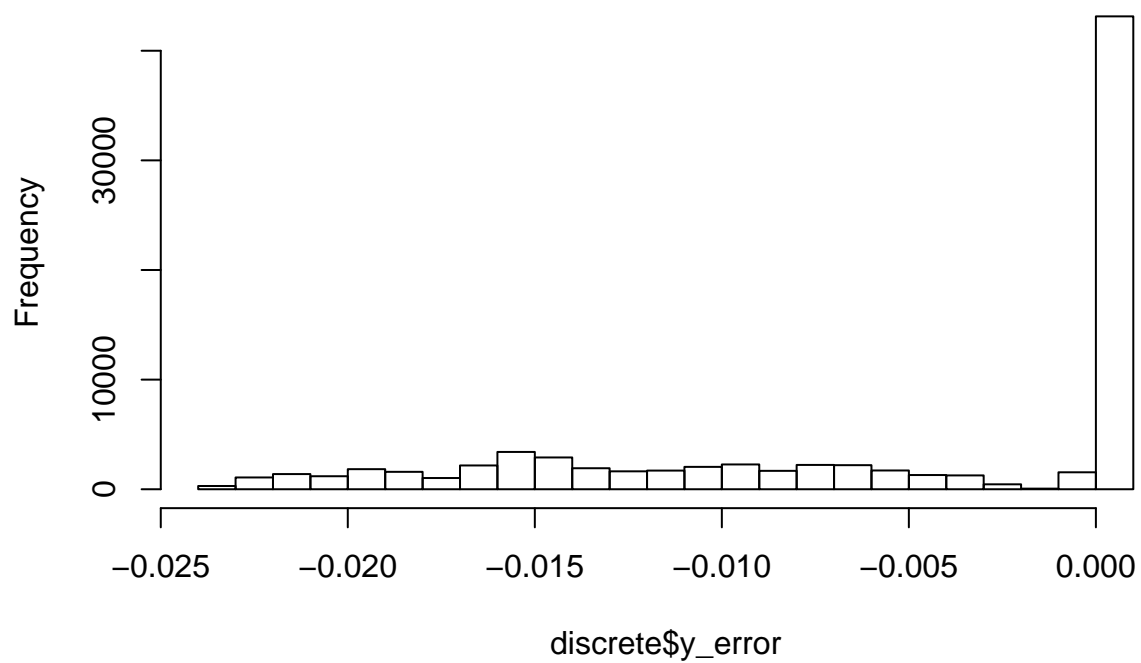
Continuous total distance error

continuous$dist_error

```
hist(discrete$x_error,
     main = "Discrete x_error")
```

Discrete x_error

discrete$x_error

```
hist(discrete$y_error,
     main = "Discrete y_error")
```

Discrete y_error


```
hist (discrete$dist_error,
      main = "Discrete total distance error")
```

Discrete total distance error