one_mobile_imu_yaw_vel Experiment Report

Matthew Swartwout

June 23, 2016

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

The runtime of this experiment was 0 hours, 3 minutes, and 59.4 seconds.

The filter configuration for this experiment was as follows:

- Continuous filter:
  - odom: x_vel, y_vel, yaw, yaw_vel
  - imu: yaw_vel
- Discrete filter:
  - odom: x_vel, y_vel, yaw_vel
  - imu: yaw_vel

Shown below is the summary of each filter's error for both x and y coordinates, and also the error in total distance.

```
summary(t1_continuous$x_error)
```

```
##       Min.    1st Qu.     Median       Mean    3rd Qu.       Max.
## -1.511e-02  1.404e-05  5.855e-03  6.201e-03  1.267e-02  3.291e-02
```

```
summary(t1_continuous$y_error)
```

```
##      Min.  1st Qu.   Median     Mean  3rd Qu.     Max.
## -0.09723 -0.06197 -0.03752 -0.04228 -0.01944  0.01923
```

```
summary(t1_continuous$dist_error)
```

```
##       Min.    1st Qu.     Median       Mean    3rd Qu.       Max.
## 8.000e-08  1.966e-02  4.108e-02  4.436e-02  6.383e-02  1.011e-01
```

```
summary(t1_discrete$x_error)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
## -3.2670 -1.2980  0.7949  0.2594  1.1330  3.8400
```

```
summary(t1_discrete$y_error)
```

```
##       Min.    1st Qu.     Median       Mean    3rd Qu.       Max.
## -4.917000 -2.410000  0.000005 -0.101500  1.761000  4.373000
```

```
summary(t1_discrete$dist_error)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   0.000   2.297   2.777   3.046   4.130   5.183
```