SE(2) Filter Comparisons (a) EKF: x (b) EKF: y (c) EKF: θ (g) Example Trajectory 7.5 0.5 0.6 0.0 5.0 2.5 0.0 0.4 -0.5 0.0 -0.5 0.2 **-**2.5 -1.0 0 0 0 0.0 (f) IEKF: θ (d) IEKF: X (e) IEKF: y 0.50 -0.2 0.0 0.25 -0.2 0.00 -0.4 -0.4 **Actual Location** -0.25 Measurements -0.6 -0.6 **EKF Results** -0.50 -2 iEKF Results -0.8

Seconds

-0.8

-0.6

0.0

-0.2

0.2

0

0

Seconds

0

Seconds