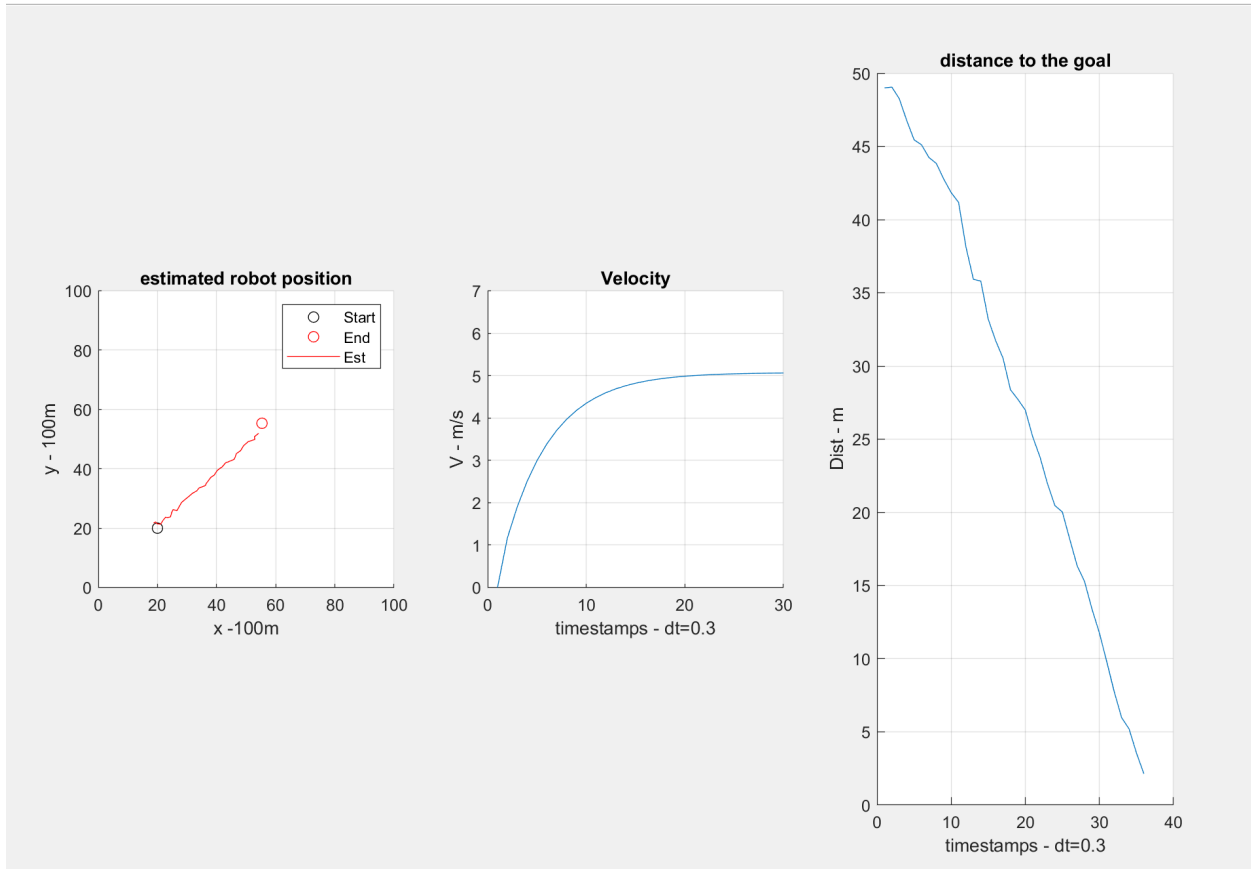


HW3

Zice Wei

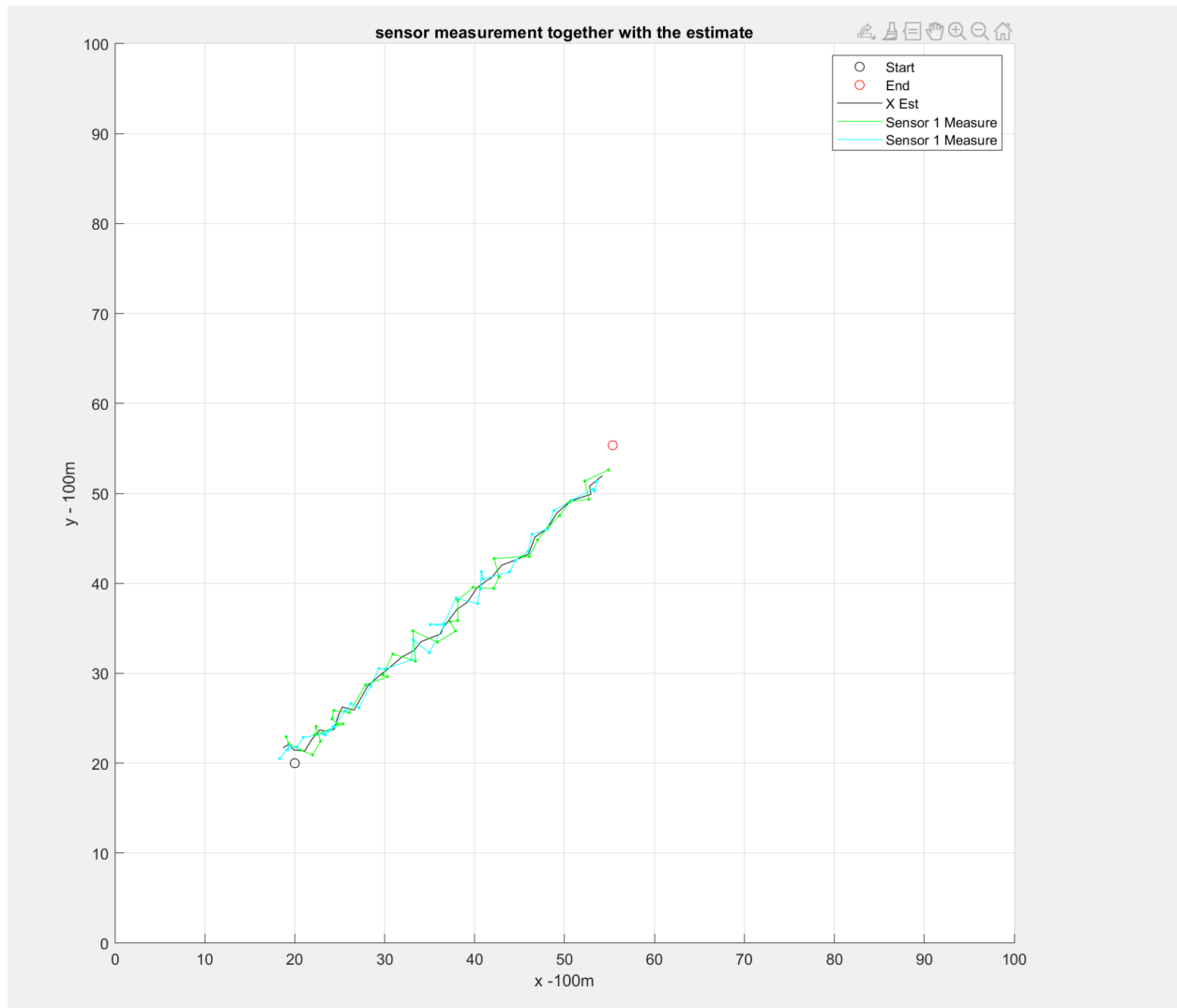
Part 1: Kalman Filter

Set threshold to 2.5m.



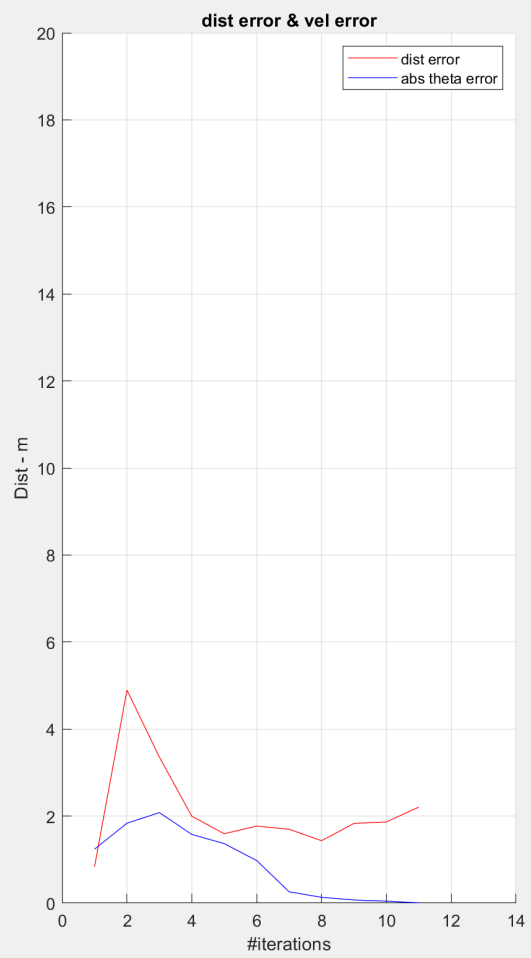
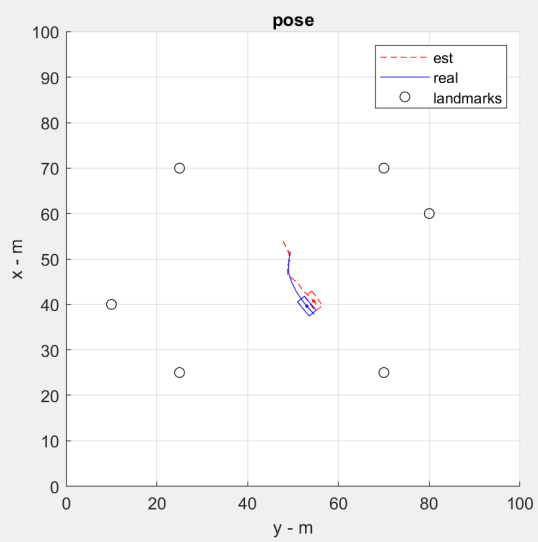
Each sensor measurement together with the estimate from the filter.

Estimate is better than the measurements



Part 2 : Particle Filter

10 Poses of the robot and the error (distance and theta) between the actual pose and each estimate.



Command Window

```
#inter1
dist error 4.8941
abs theta error 1.8359
pose (x,y,theta) 47.6175    54.2704    2.71397
#inter2
dist error 3.3531
abs theta error 2.0794
pose (x,y,theta) 49.0708    51.3075    2.62749
#inter3
dist error 1.9952
abs theta error 1.5782
pose (x,y,theta) 49.2872    49.6926    3.02674
#inter4
dist error 1.5948
abs theta error 1.3669
pose (x,y,theta) 48.7121    48.4117    3.41323
#inter5
dist error 1.7694
abs theta error 0.9779
pose (x,y,theta) 48.8362    46.4995    4.04356
#inter6
dist error 1.6968
abs theta error 0.2603
pose (x,y,theta) 51.1325    44.6221    4.9055
#inter7
dist error 1.4343
abs theta error 0.13234
pose (x,y,theta) 51.8531    43.472    5.09863
#inter8
dist error 1.8313
abs theta error 0.071668
pose (x,y,theta) 53.2091    42.0846    5.25953
#inter9
dist error 1.8655
abs theta error 0.044139
pose (x,y,theta) 54.5209    40.749    5.35982
#inter10
dist error 2.2069
abs theta error 0.0063862
pose (x,y,theta) 55.6939    39.7285    5.44379
```

fx>>