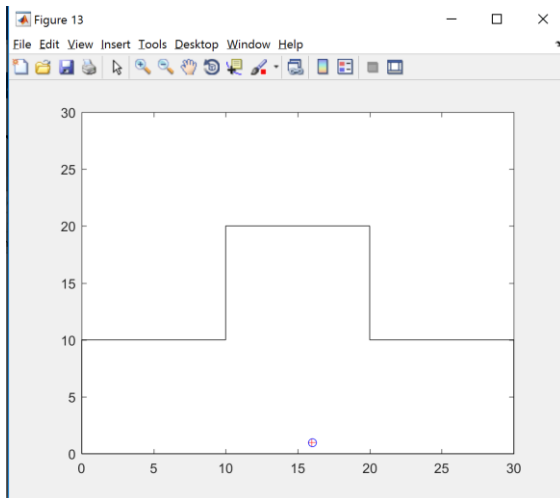
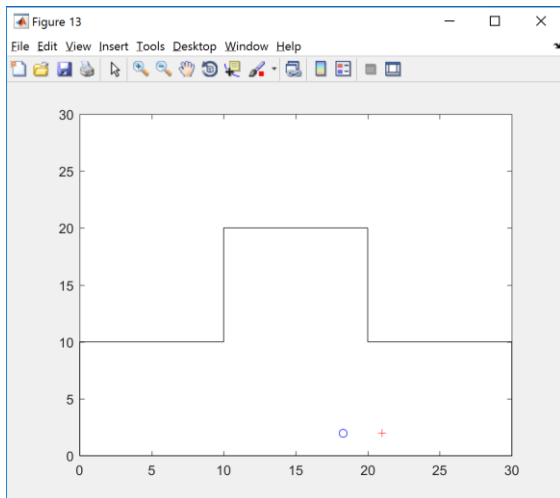


1.Path 1

Firstly, we use the true initial position, $(25, 9, \pi/2)$ the result is shown below

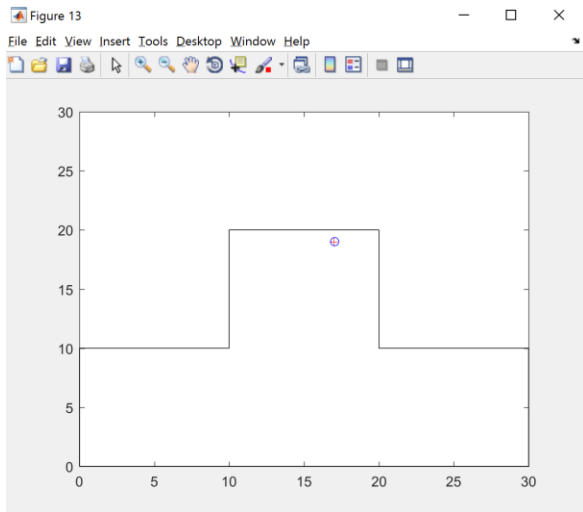


Then we try the initial position with $(30, 10, \pi/2)$



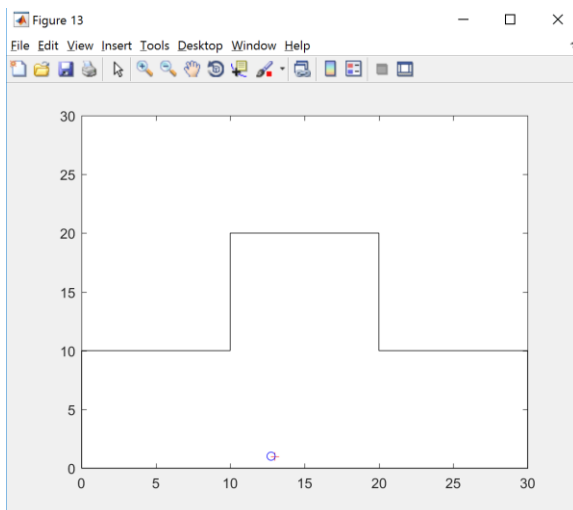
Obviously, there is a little bit deviation between the real position of robot and the estimation. And the whole path of the robot, sometimes the positions of robot cannot tracked by ekf.

Try (25, 10, 0)



The extended Kalman filter perform well in this case.

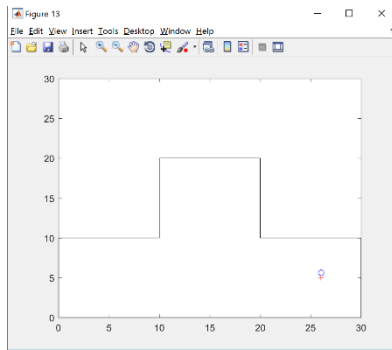
Try (5,10,pi)



Although the final position can be tracked by ekf, in the path of the robot cannot tracked by few steps.

2. For Path 2





As shown above, the extended kalman filter performed well in path 2.

3. Path 3

