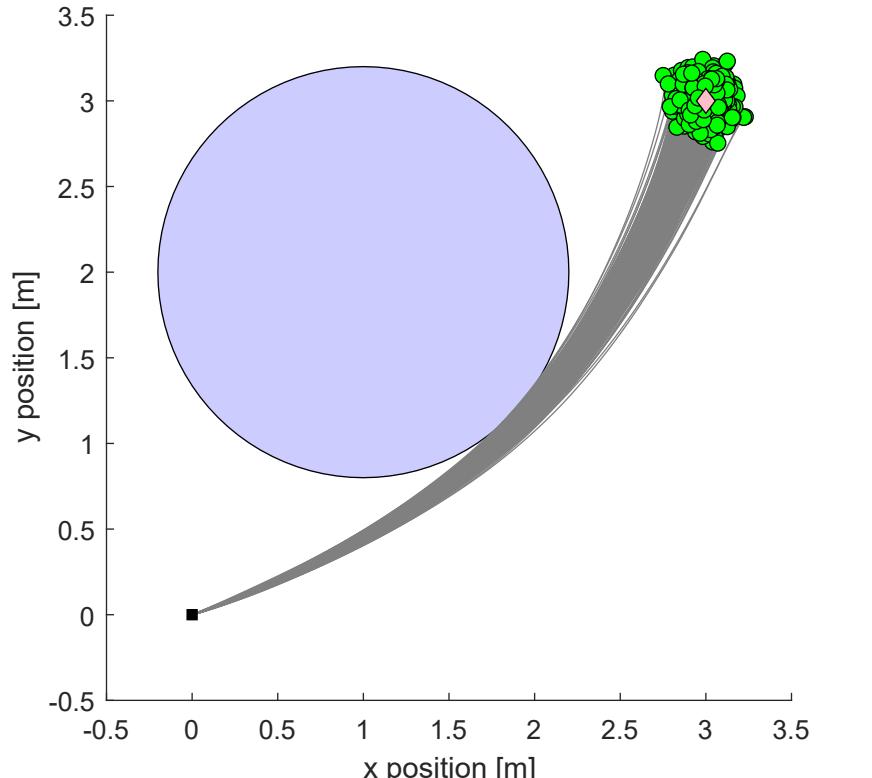
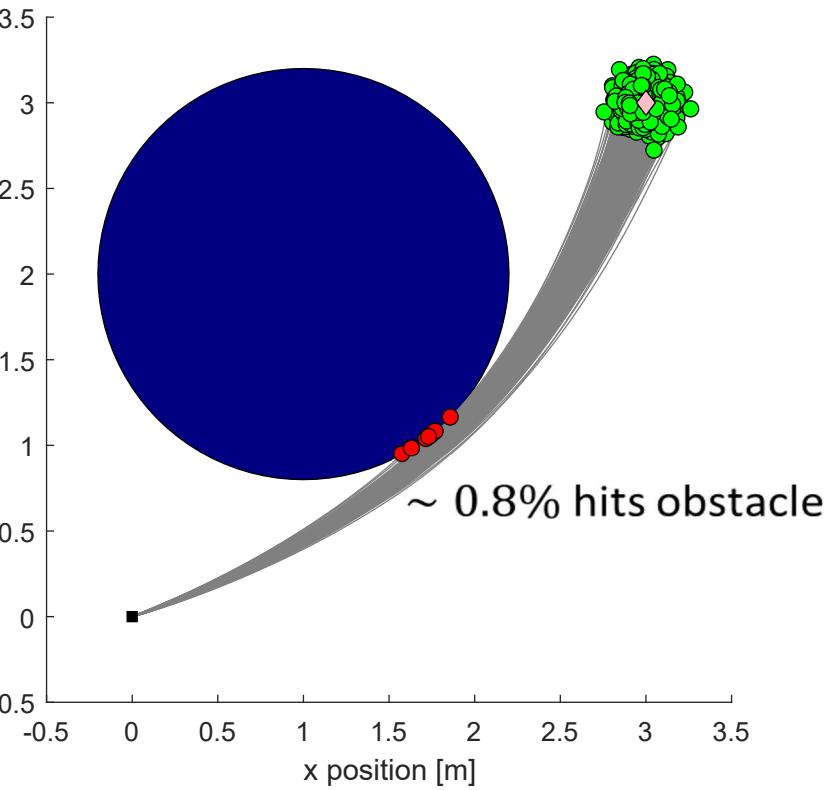
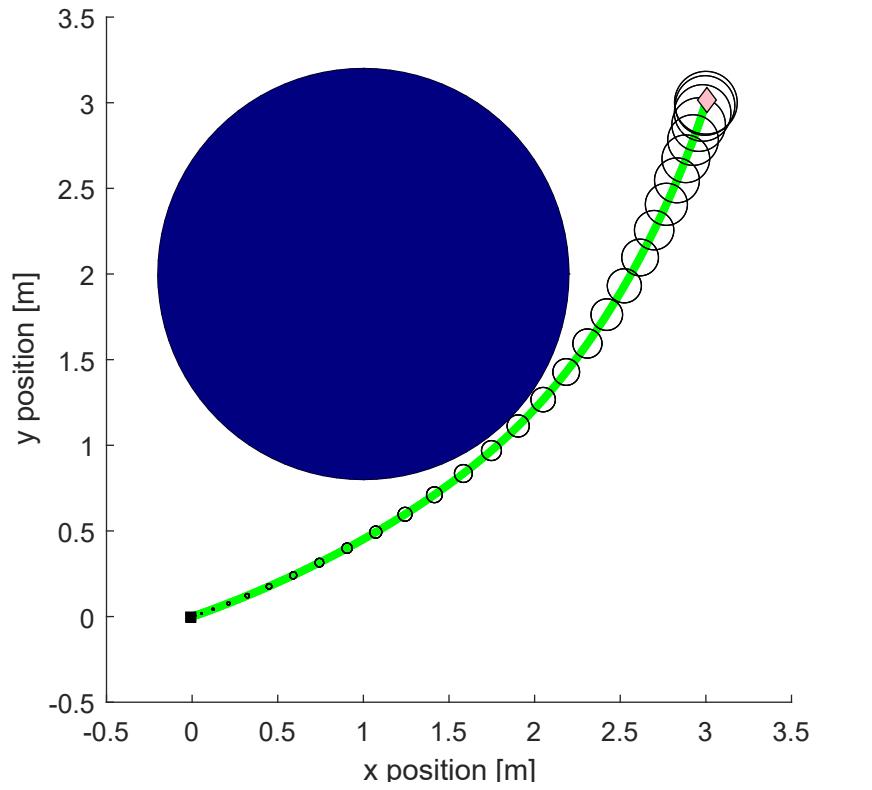


Robust open loop



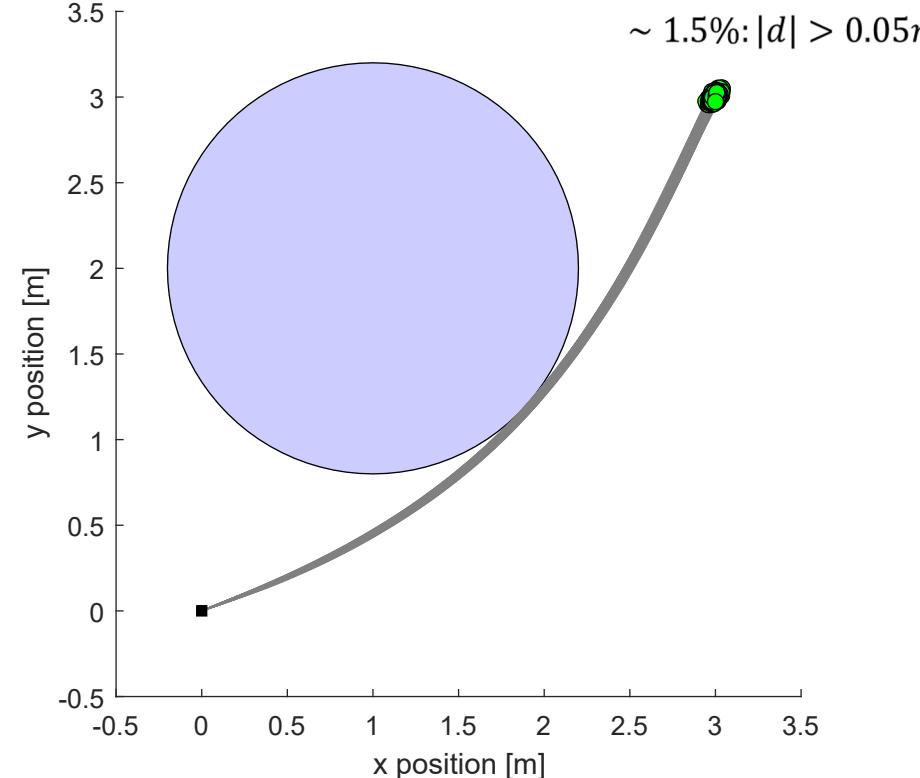
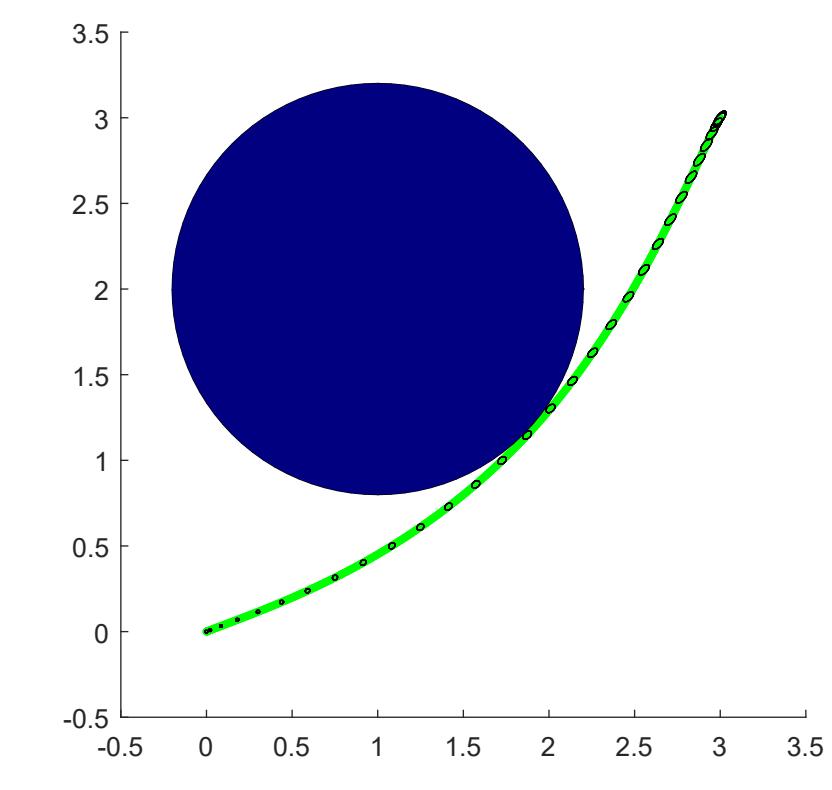
Predicted co-variance matrix

$$\begin{bmatrix} 0.0056 & 0 \\ 0 & 0.0056 \end{bmatrix}$$

Estimated co-variance matrix

$$\begin{bmatrix} 0.0054 & -3e-5 \\ -3e-5 & 0.0056 \end{bmatrix}$$

Robust closed loop



Predicted co-variance matrix

$$\begin{bmatrix} 1.95e-4 & 1.56e-4 \\ 1.56e-4 & 2.63e-4 \end{bmatrix}$$

Estimated co-variance matrix

$$\begin{bmatrix} 1.98e-4 & 1.57e-4 \\ 1.57e-4 & 2.65e-4 \end{bmatrix}$$

$\sim 0.9\% \text{ hits obstacle}$