Meeting

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Progress report

- Change to continue action space

$$\mathcal{A} \in \left\{ [u_a \; u_e \; u_T \; u_r]^T \middle| \, u_a, u_e, u_r \in \mathcal{N}(\mu, \sigma^2), u_T = 0.7 \right\} \tag{1}$$

The neural network will output the μ and σ for each control surface.

- But the continuous action space may not converge.
- Change the discrete action space.

$$\mathcal{A} \in \left\{ [u_a \; u_e \; u_T \; u_r]^T \middle| \, u_a, u_e, u_r \in \{-20°, -10°, -5°, 0°, 5°, 10°, 20°\}, u_T = 0.7 \right\} \tag{2}$$

Progress report

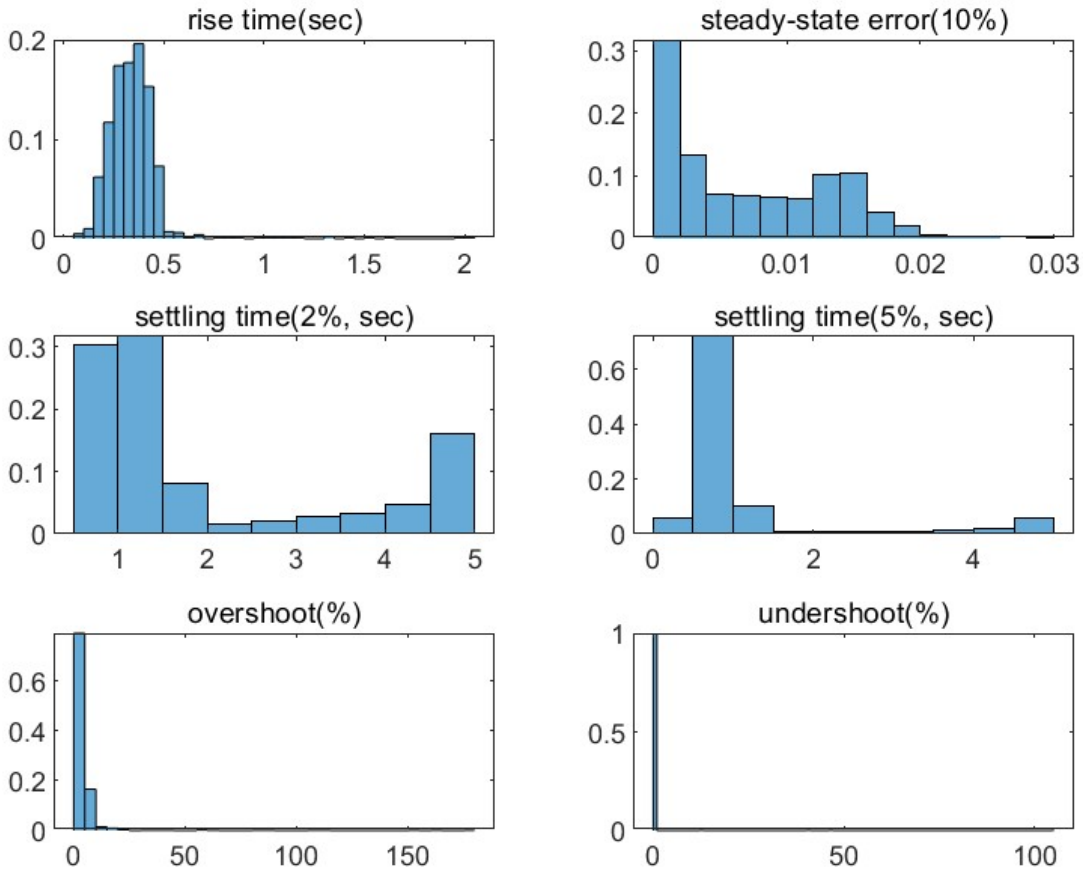

Figure 1: Step performance of β

Progress report

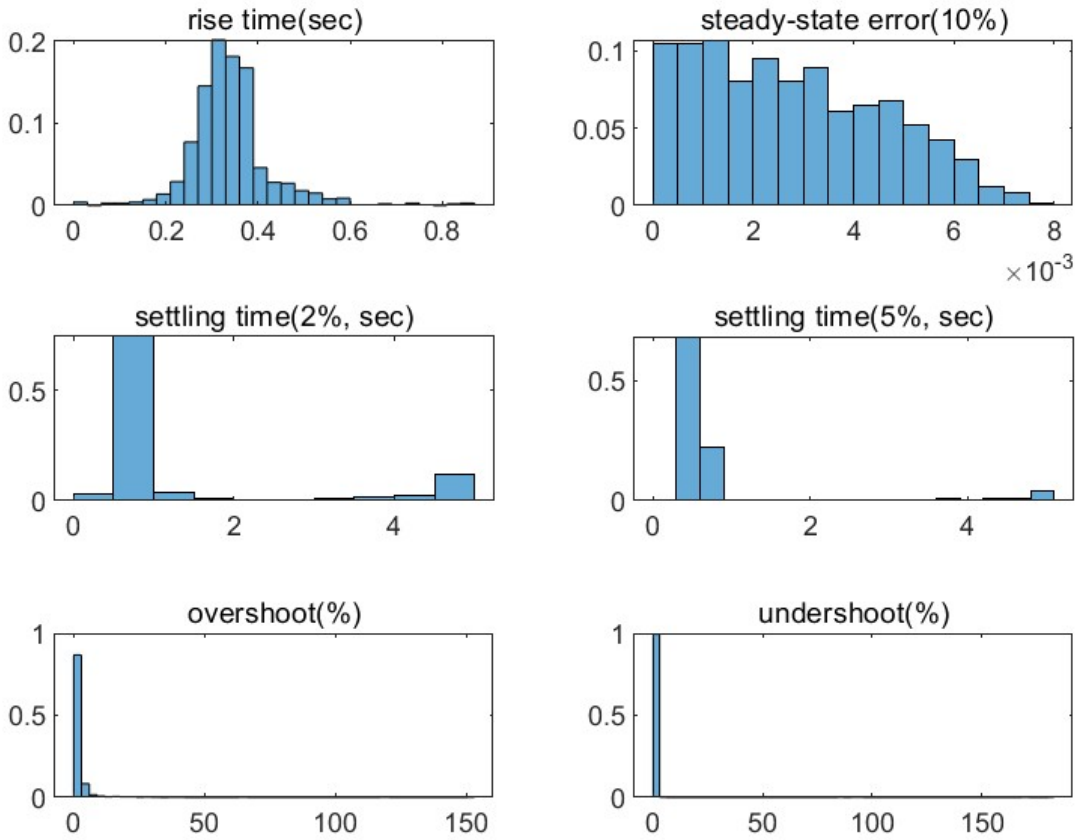

Figure 2: Step performance of ϕ

Progress report

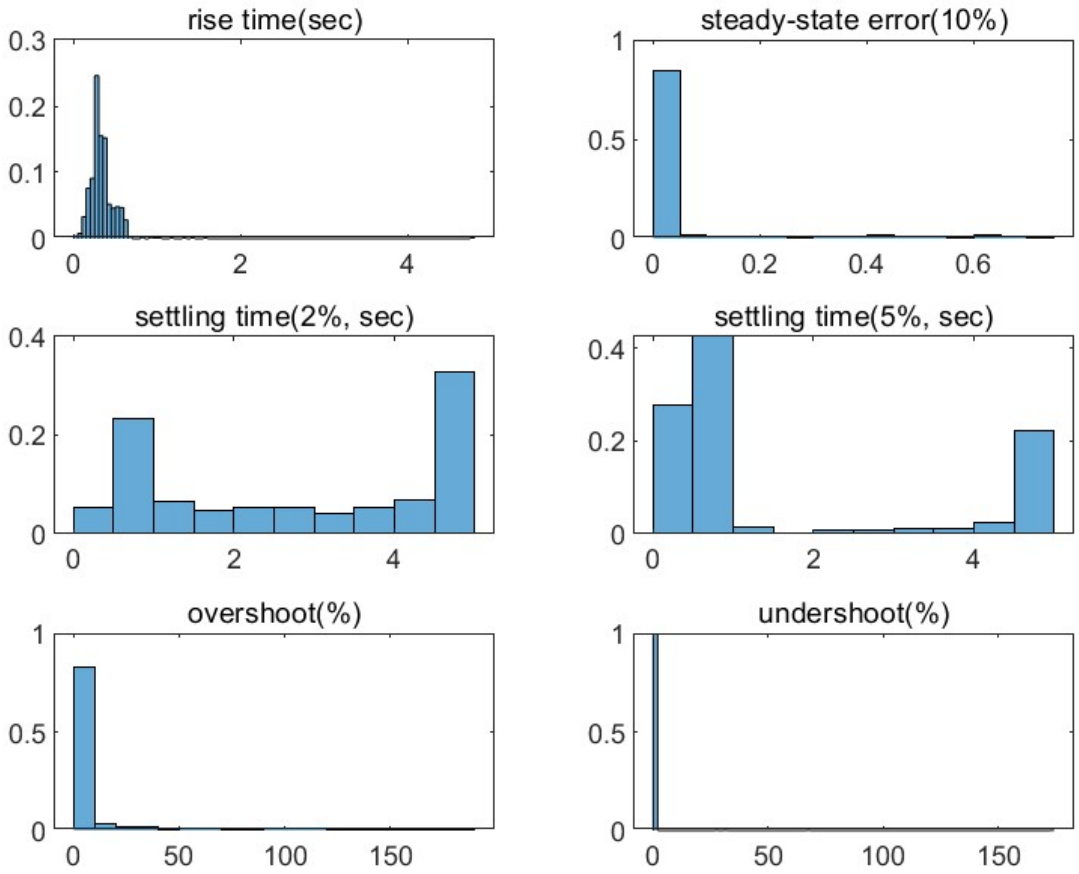

Figure 3: Step performance of θ

Progress report

Table 1: Fixed step Performance of the Controller

	β	ϕ	θ
Rise time(sec)	0.3468	0.3410	0.3460
2% Settling time(sec)	2.0260	1.3975	2.8571
5% Settling time(sec)	1.1261	0.8661	1.6930
Overshoot(%)	4.4914	2.1506	13.6721
Undershoot(%)	0.20350	0.63190	0.29890
Steady-state error(%)	0.71	0.28	6.04