

Lab 2 Report

EEET-427-01: Control Systems

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1 Section 1

$$\begin{aligned}\omega_{mtr} &= 750 \text{ rad/s} \\ \frac{\omega_{mtr}}{V_{arm}} &= 299 \frac{\text{rad}}{\text{sV}}\end{aligned}\tag{1}$$

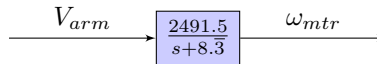
2 Section 2

$$\tau = 0.12 \text{ s}\tag{2}$$

3 Section 3

$$\frac{\omega_{mtr}}{V_{arm}} = \frac{a}{s+b} = \frac{2491.5 \frac{\text{rad}}{\text{s}^2 \text{V}}}{(s+8.3) \text{ Hz}}\tag{3}$$

4 Section 4



5 Section 5

$$\begin{aligned}\omega_{mtr} &= 750 \text{ rad/s} \\ \frac{\omega_{mtr}}{\omega_{ref}} &= 0.8399 = 83.99\% \\ \tau &= 0.12 \text{ s} \\ \frac{\omega_{mtr}}{\omega_{ref}} &= \frac{a}{s+b} = \frac{6.999 \text{ rad/s}}{(s+8.3) \text{ rad/s}}\end{aligned}\tag{4}$$

A block diagram showing the transfer function from ω_{ref} to ω_{mtr} . An arrow labeled ω_{ref} enters a blue rectangular block containing the expression $\frac{6.999 \text{ rad/s}}{(s+8.3) \text{ rad/s}}$. An arrow labeled ω_{mtr} exits the block to the right.

6 Section 6

DCgain=1.24