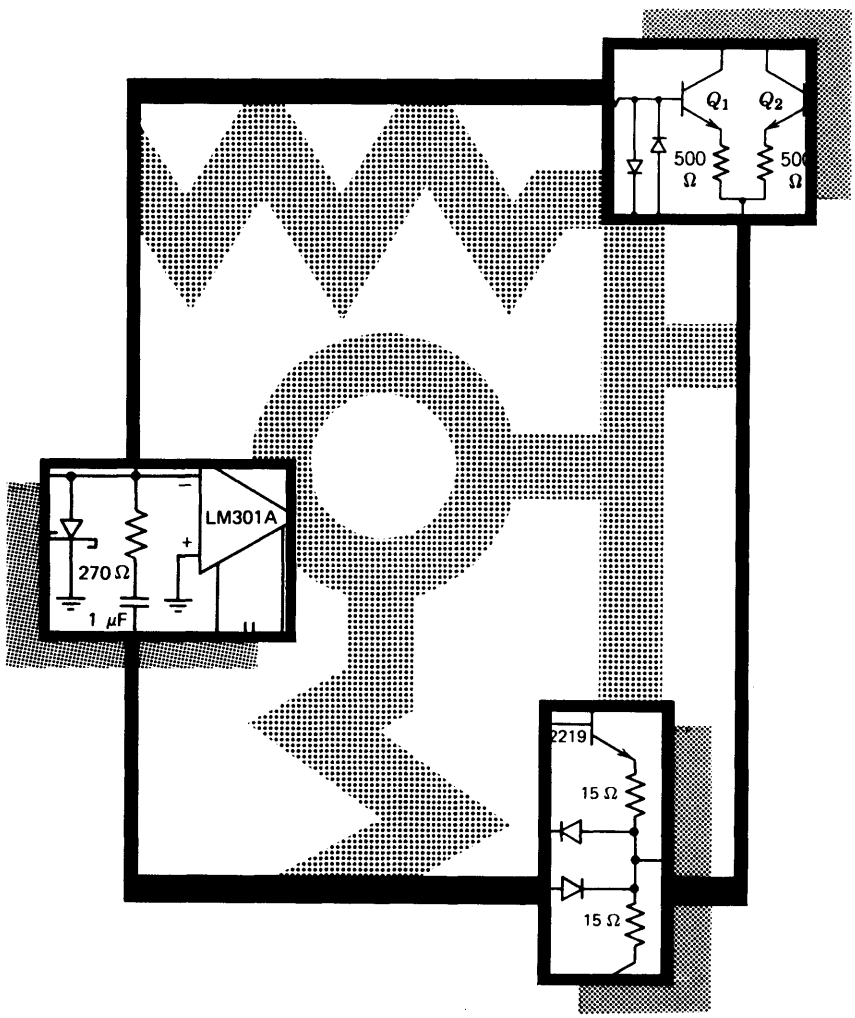
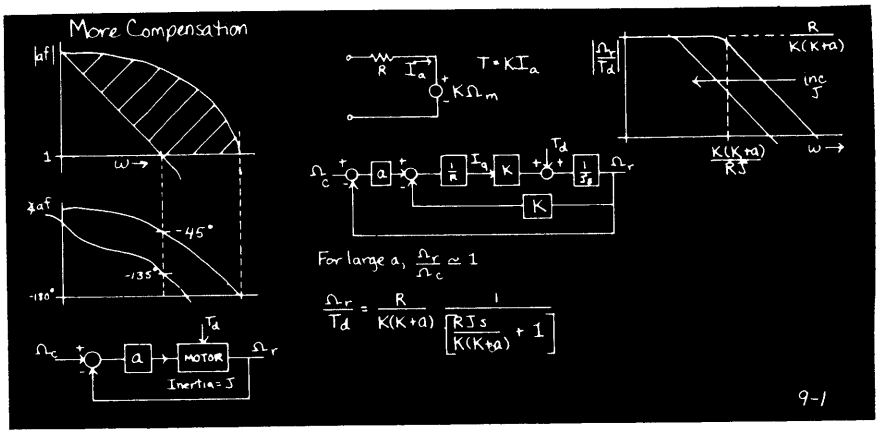
VIDEO COURSE MANUAL

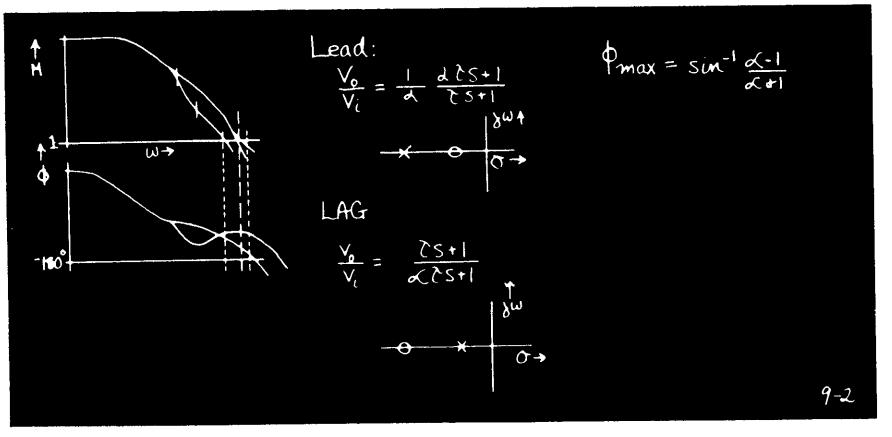
More Compensation 9



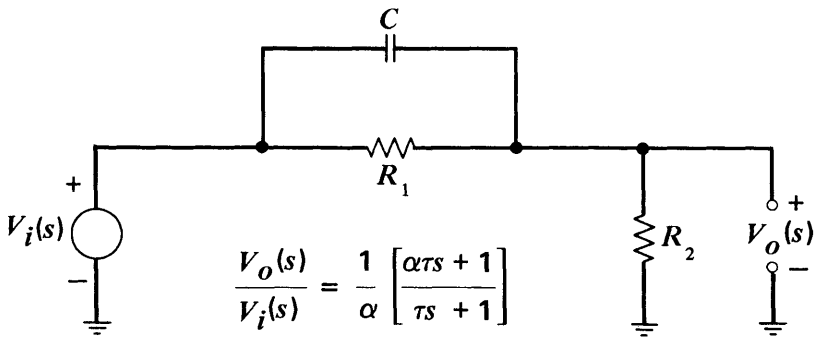
Blackboard 9.1



Blackboard 9.2



Viewgraph 9.1



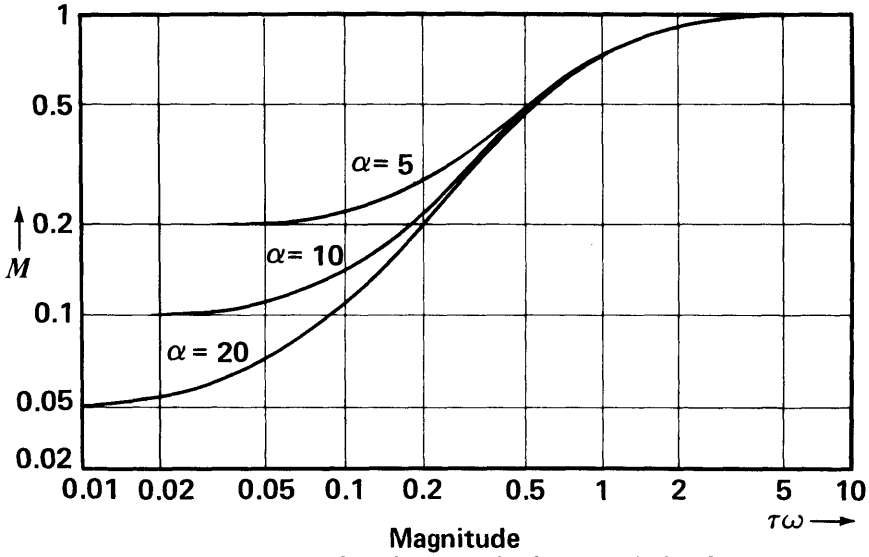
$$\frac{V_o(s)}{V_i(s)} = \frac{1}{\alpha}\left[\frac{\alpha\tau s + 1}{\tau s + 1}\right]$$

where

$$\alpha = \frac{R_1 + R_2}{R_2}$$

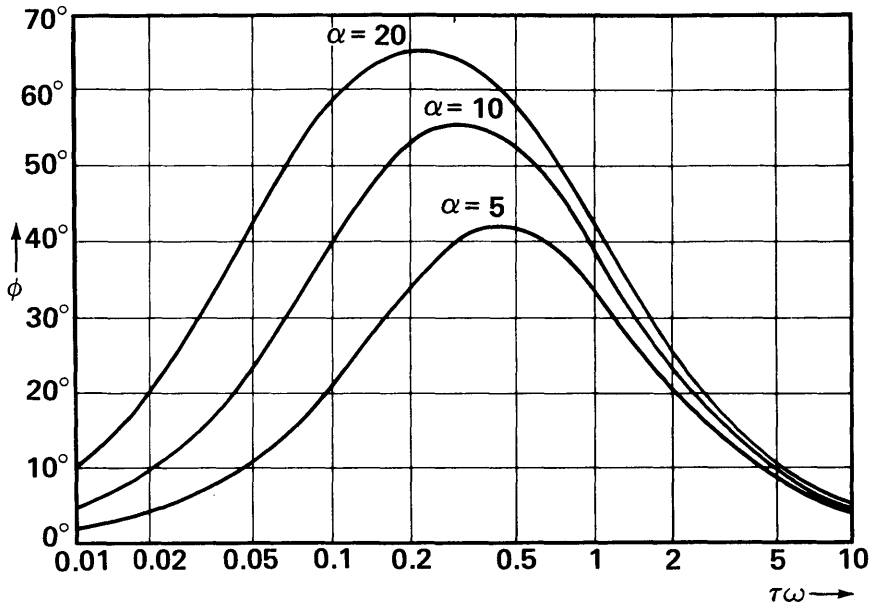
$$\tau = (R_1 \parallel R_2)C$$

Viewgraph 9.2



Magnitude
Lead network characteristics for
$V_o(s)/V_i(s) = (1/\alpha)\,[(\alpha\tau s + 1)/(\tau s + 1)]$.

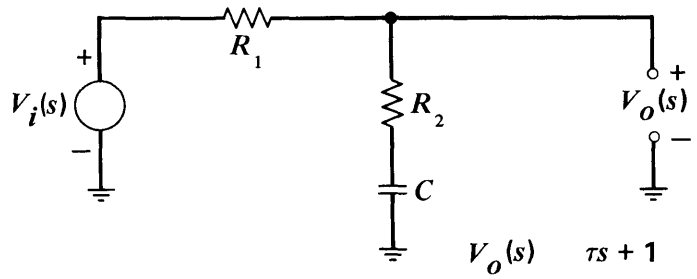
Viewgraph 9.3



Angle

Lead network characteristics for
$V_o(s)/V_i(s) = (1/\alpha)\,[(\alpha\tau s + 1)/(\tau s + 1)]$.

Viewgraph 9.4



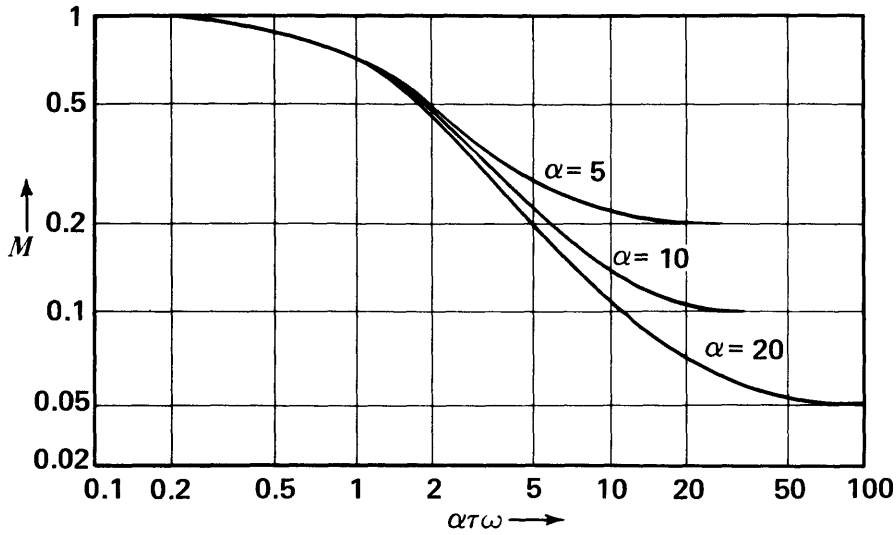
$$\frac{V_o(s)}{V_i(s)} = \frac{\tau s + 1}{\alpha\tau s + 1}$$

where

$$\alpha = \frac{R_1 + R_2}{R_2}$$

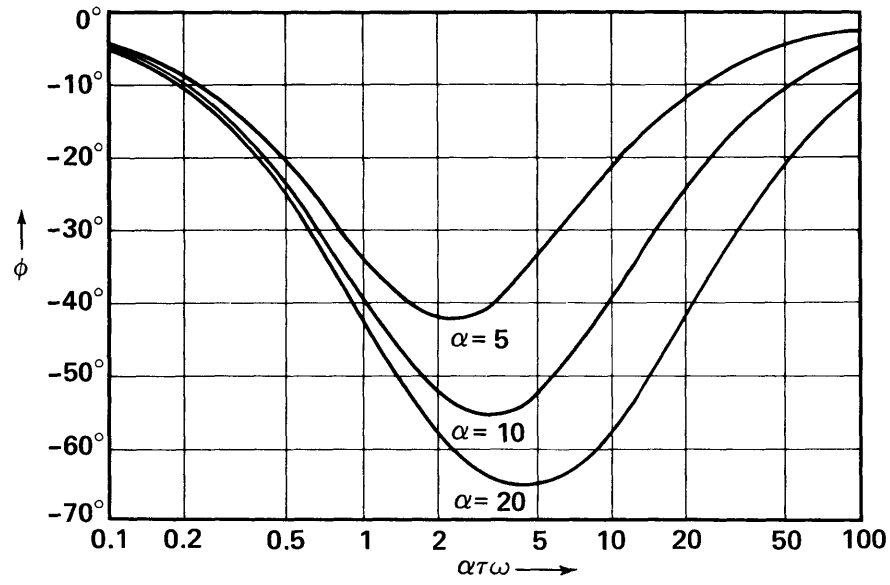
$$\tau = R_2 C$$

Viewgraph 9.5



Magnitude
Lag network characteristics for
$V_o(s)/V_i(s) = (\tau s + 1)/(\alpha\tau s + 1)$.

Viewgraph 9.6



Angle
Lag network characteristics for
$V_o(s)/V_i(s) = (\tau s + 1)/(\alpha\tau s + 1)$.

Comments

In this lecture we indicate the general types of changes that may be made to the dynamics of the loop transmission in order to improve performance. The exact way in which these techniques are applied is strongly dependent on the physical details of the system, and consequently the discussion is quite general. Specifics will be illustrated with examples in future lectures.

Reading

Textbook: Sections 5.2.2 and 5.2.3.

Problems

Problem 9.1 (P5.3)

Problem 9.2 (P5.4): Do not do part d.

Problem 9.3 (P5.5)

Problem 9.4 (P5.6)

RES.6-010 Electronic Feedback Systems

Spring 2013