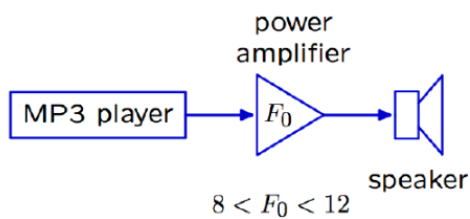# VE216 Lecture 13

CT Feedback and Control
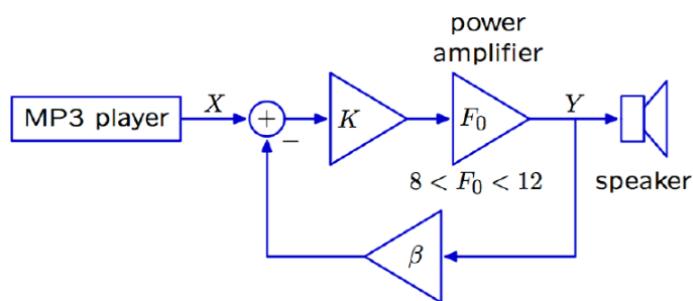
Feedback and Control

Reducing sensitivity to unwanted parameter variation

Change the original form of
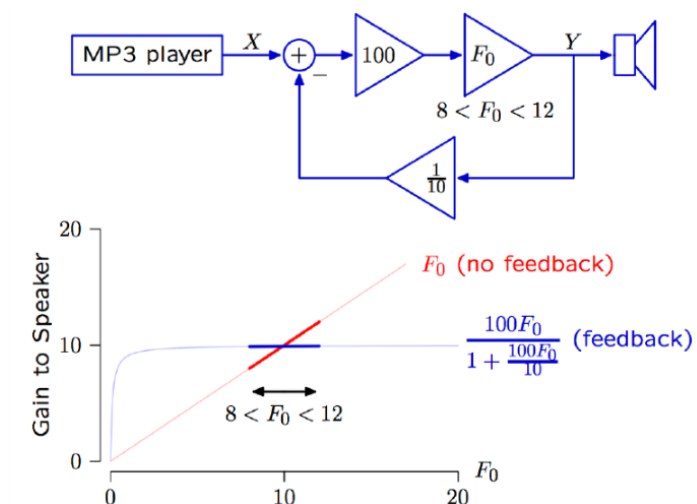
power amplifier

MP3 player → F_0 → speaker

$8 < F_0 < 12$

into the form of

power amplifier

MP3 player → X → $(+)(-)$ → K → F_0 → Y → speaker

$8 < F_0 < 12$

β

with the system function $H(s) = \frac{KF_0}{1+\beta KF_0}$ (if K is large, then $H(s) \to \frac{1}{\beta}$).

Example

MP3 player → X → $(+)(-)$ → 100 → F_0 → Y → speaker

$8 < F_0 < 12$

$\frac{1}{10}$

Gain to Speaker

F_0 (no feedback)

$\frac{100F_0}{1+\frac{100F_0}{10}}$ (feedback)

$8 < F_0 < 12$

F_0

Stabilize unstable Systems