Control Theory

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1 Systems

1.1 Linearity

$$f(ax + by) = af(x) + bf(y) \tag{1}$$

1.2 Time-Invariance

Transfer function is not directly dependent on time:

$$y(t) = F(x(t), t) = F(x(t)) \tag{2}$$

This also means that any shift to time in input translates to the same shift in the output.

$$x(t + \delta) \xrightarrow{F} y(t + \delta) \tag{3}$$