

CS354

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PID Control

Error:

$$e(t) = \text{target}(t) - \text{state}(t)$$

Control:

$$u(t) = K_p e(t) + K_i \int_0^t e(\tau) d\tau + K_d \frac{d}{dt} e(t)$$

- Proportional $K_p e(t)$
- Integral $K_i \int_0^t e(\tau) d\tau$
- Derivative $K_d \frac{d}{dt} e(t)$