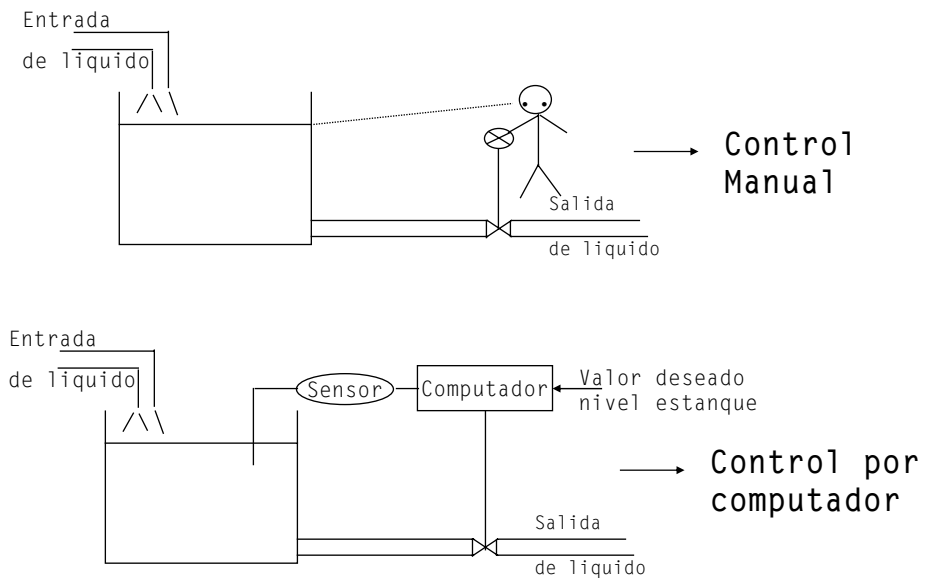


Parte 1: Visión General del Control Automático

Prof. Doris Sáez

Control Automático



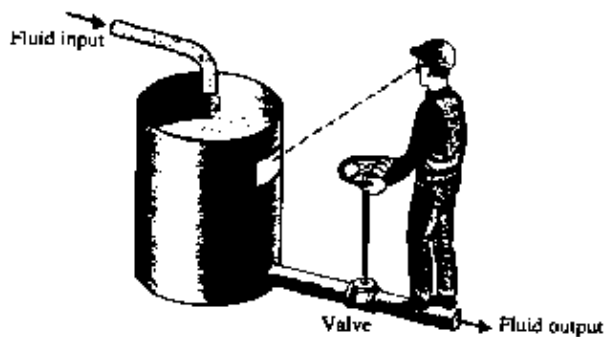
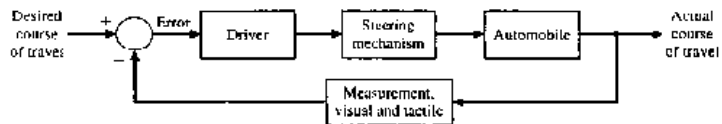
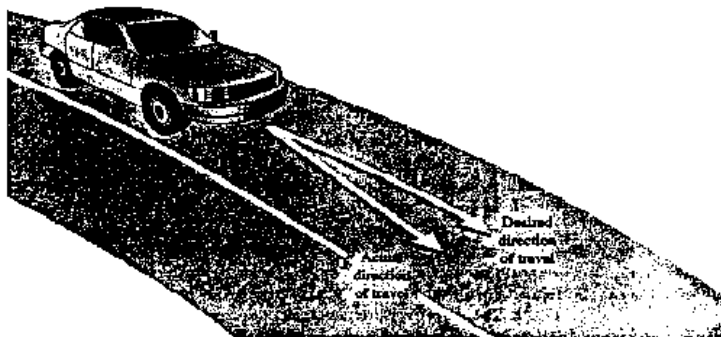


FIGURE 1.9

A manual control system for regulating the level of fluid in a tank by adjusting the output valve. The operator views the level of fluid through a port in the side of the tank.



(a)



(b)

FIGURE 1.7

(a) The driver uses the difference between the actual and desired direction of travel to generate a controlled adjustment of the steering wheel.

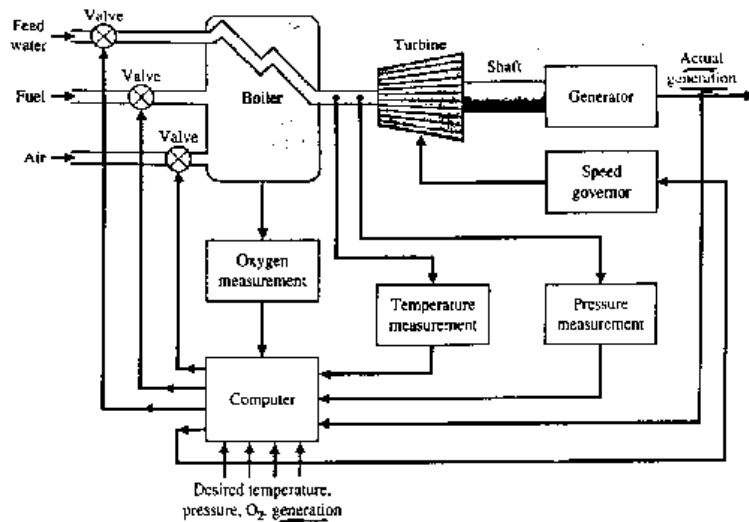


FIGURE 1.11
Coordinated
control system
for a boiler-
generator.

Entrada = Acción de control = variable manipulada

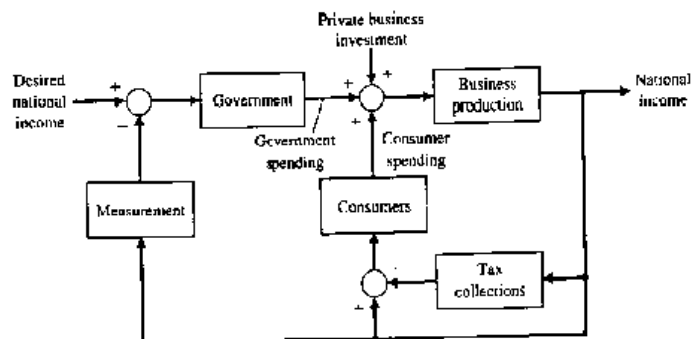


FIGURE 1.14
A feedback control
system model of
the economy.

Definiciones Básicas

- Planta
- Proceso
- Sistema
- Sistema de control

Definiciones Básicas

- Variables manipuladas
- Variables de estado
- Variables controladas
- Perturbaciones
- Set-points o referencias

Tecnologías de Sistemas de Control

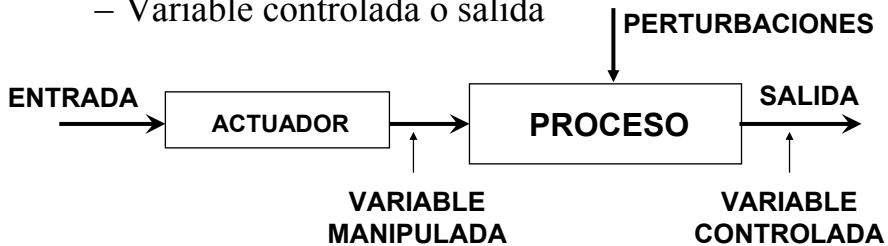
- Control manual
- Control analógico
- Control digital

Sistemas de Control de Sistemas

- Control en lazo abierto o guiado
- Control en lazo cerrado o realimentado
- Control prealimentado
- Control avanzado

Control en Lazo Abierto

- Proceso
- Dispositivo de acción (actuador)
- Variable manipulada o de control
- Variable controlada o salida



Ejemplo: Control en Lazo Abierto

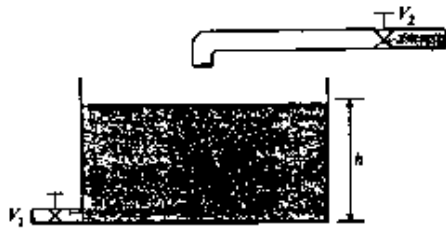
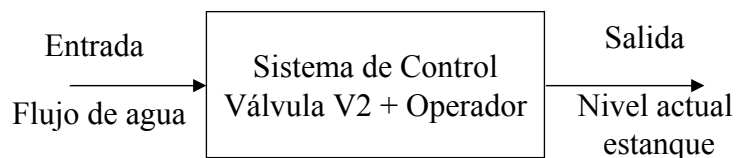


Figure 1.1 Tank-level control system.



Ejemplo: Control en Lazo Abierto

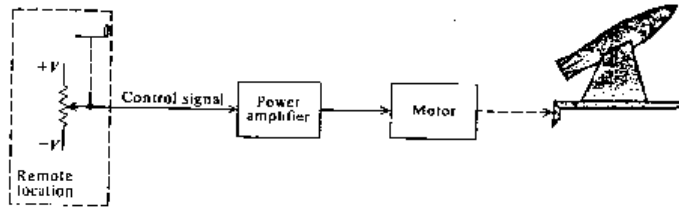
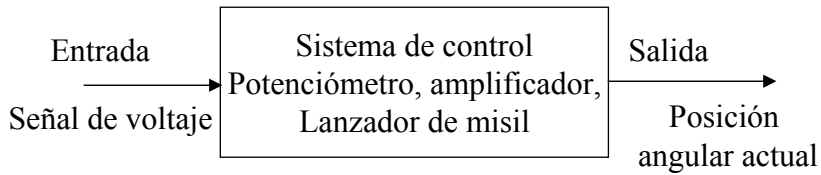


Figure 1.3 Controlling the position of a missile launcher from a remote location.



Ejemplo: Control en Lazo Cerrado

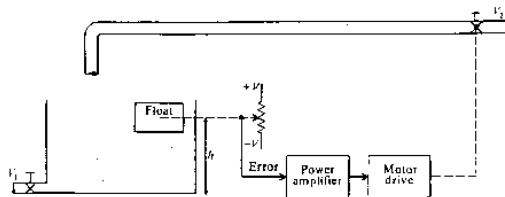
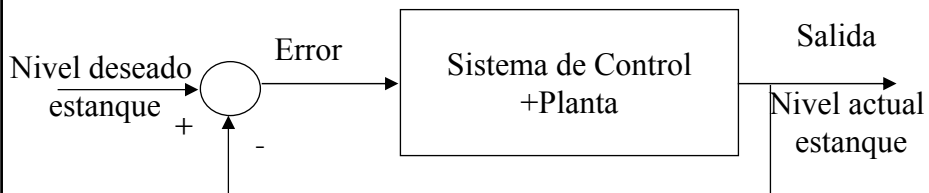


Figure 1.7 Automatic tank-level control system.



Ejemplo: Control en Lazo Cerrado

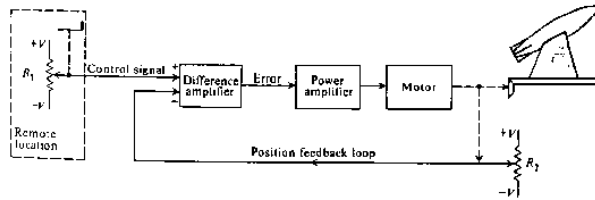
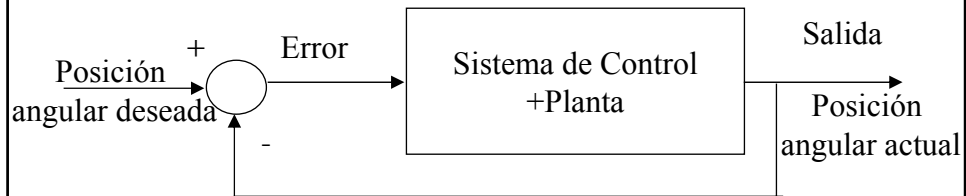


Figure 1.9 An automatic positioning system for a missile launcher.



Control Avanzado

- Control óptimo (predictivo)
- Control adaptivo
- Control no lineal
- Control difuso
- Control neuronal