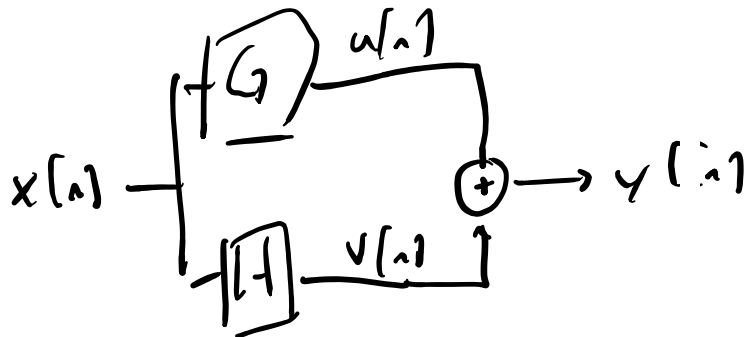


Parallel systems



$$u[n] = g[n] * x[n]$$

$$v[n] = h[n] * x[n]$$

$$y[n] = u[n] + v[n]$$

$$= g[n] * x[n] + h[n] * x[n]$$

$$= (g[n] + h[n]) * x[n]$$

$$U(\omega) = G(\omega) X(\omega)$$

$$V(\omega) = H(\omega) X(\omega)$$

$$Y(\omega) = U(\omega) + V(\omega)$$

$$= G(\omega) X(\omega) + H(\omega) X(\omega)$$

$$= (G(\omega) + H(\omega)) X(\omega)$$

$$y(n) = f(n) * x(n)$$

$$f(n) = g(n) + h(n)$$