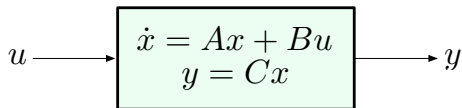


Impulse Response



zero initial condition: $x(0) = 0$

Consider the input

$$u(t) = \delta(t - \tau) \quad \text{unit impulse applied at } t = \tau$$

The system is *linear* and *time-invariant* (LTI), with zero I.C.:

$$u(t) = \delta(t - \tau) \quad \xrightarrow{x(0)=0; \text{ LTI system}} \quad y(t) = h(t - \tau)$$

The function h is the *impulse response* of the system.