



Example 9-18: Integrator is Unstable

Now consider the integrator system. Its impulse response is $h(t) = u(t)$, so applying (9.66) leads to

$$\int_{-\infty}^{\infty} |h(\tau)| d\tau = \int_0^{\infty} d\tau \rightarrow \infty$$

Therefore the integrator is an unstable system. ■