

Recitation #5

Administrative Announcements

- The next three recitations will be covered by Prof. Elfar Adalsteinsson

Topics Covered

- Continuous time convolution examples

1. $e^{-at}u(t) * u(t)$

2. $\Pi(t) * \Pi(t)$ where

$$\Pi(t) = \begin{cases} 1 & |t| \leq \frac{1}{2} \\ 0 & \text{otherwise.} \end{cases}$$

3. $\Lambda(t) * \delta(t)$ where

$$\Lambda(t) = \begin{cases} 1 - |t| & |t| \leq 1 \\ 0 & \text{otherwise.} \end{cases}$$

4. $\Pi(t) * \Lambda(t)$

5. $\Pi(t) * \dots * \Pi(t)$

- Differentiator: $* \delta'(t)$
- Integrator: $* \int_{-\infty}^t \delta(\tau) d\tau$