Computer Lab Assignment - 06 - Spring 2020

Signals & Systems,
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1 Fourier Transforms

Based on the definition of continuous time Fourier transform and inverse Fourier transform, write a matlab code for these transforms. Next, for each of the given aperiodic signals, use these matlab codes to

- Compute the Fourier transform and plot the magnitude and phase components of the spectrum versus frequency
- Compute the inverse Fourier transform and plot and compare with the original signal

$$\begin{aligned} x_1(t) &= exp(-|t|)\big(u(t+2\pi) - u(t-2\pi)\big) \\ x_2(t) &= sinc(t)\big(u(t+2\pi) - u(t-2\pi)\big) \\ x_3(t) &= exp\left(\frac{1}{1+|t|}\right)\big(u(t) - u(t-2*\pi)\big) \end{aligned}$$

2 Instructions

Merge all the sections into a single pdf file and upload.
Deadline: 11, April, 2020.