Exercise

Apply sampling principles to a "wave packet"

$$s(t) = e^{-\frac{t}{\Delta t}} Sin(2\,\pi \nu_o t)\Theta(t)$$

Take $\Delta t = 10\ s$ and $\nu_o = 10\ Hz$

Calculate continuous Fourier Transform

Sample and estimate alias for $\nu_s = 20, 21, 50, 100\ Hz$

Truncate at $t = [-1, +20]s$ and $[-1, +50]s$ and estimate error within the data range