

Background

Tuesday, April 2, 2019

3:31 PM

$$\tau = \frac{2R}{c}$$

$$\Delta R = \frac{c}{2B}$$

$$x_{IF}(t) = a(t) \cos(2\pi(F_{IF} - 0.5B)t + \pi\delta t^2)$$

$$a(t) = \text{rect}((t - 0.5T_p)/T_p)$$

$$x(t) = a(t) \cos(2\pi(F_c - 0.5B)t + \pi\delta t^2)$$

$$y(t) = \alpha x(t - \tau) = \alpha a(t - \tau) \cos(2\pi(F_c - 0.5B)(t - \tau) + \pi\delta(t - \tau)^2)$$
$$= \alpha a(t - \tau) \cos(2\pi F_c t - 2\pi F_c \tau - 2\pi(-0.5B)t + 2\pi(0.5B)\tau + \pi\delta(t - \tau)^2)$$

Note: $\alpha = 1$

$$\text{noise} = \sqrt{\frac{P_n}{2}} (\text{randn}(L, 1) + 1j * \text{randn}(L, 1));$$