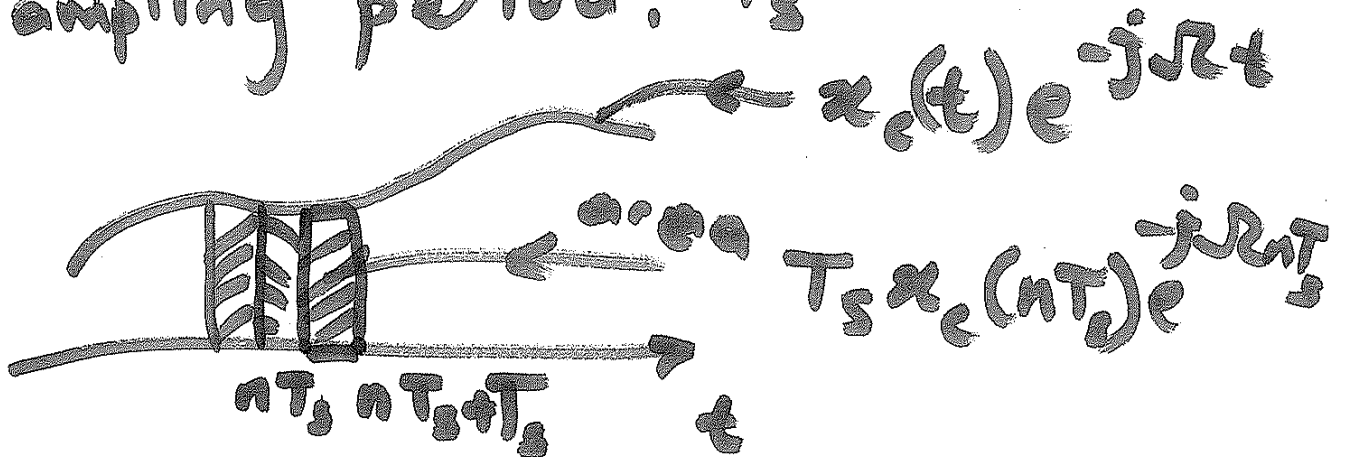


$$X_c(j\Omega) = \int_{-\infty}^{\infty} x_c(t) e^{-j\Omega t} dt$$

Sampling period: T_s



$$X_c(j\Omega) \approx \sum_{n=-\infty}^{\infty} T_s x_c(nT_s) e^{-j\Omega T_s n}$$

Discrete-time signal $x[n] = x_c(nT_s)$

Normalized angular freq

$$\omega = \Omega T_s$$

$$T_s X(e^{j\omega}) = \sum_{n=-\infty}^{\infty} T_s x[n] e^{-j\omega n}$$

D.T.F.T. $X(e^{j\omega}) = \sum_{n=-\infty}^{\infty} x[n] e^{-j\omega n}$

N-point

D.F.T.

$$X[k] \cong X(e^{j\omega}) \Big|_{\omega = \frac{2\pi k}{N}}$$

$$X[k] = \sum_{n=0}^{N-1} x[n] e^{-j\frac{2\pi k n}{N}}$$

$$k = 0, 1, \dots, N-1$$