Carrier Signal: $\cos(2\pi f_0 t)$ → freq.

$A\cos(2\pi f_0 t + \phi)$ → phase; A → amp

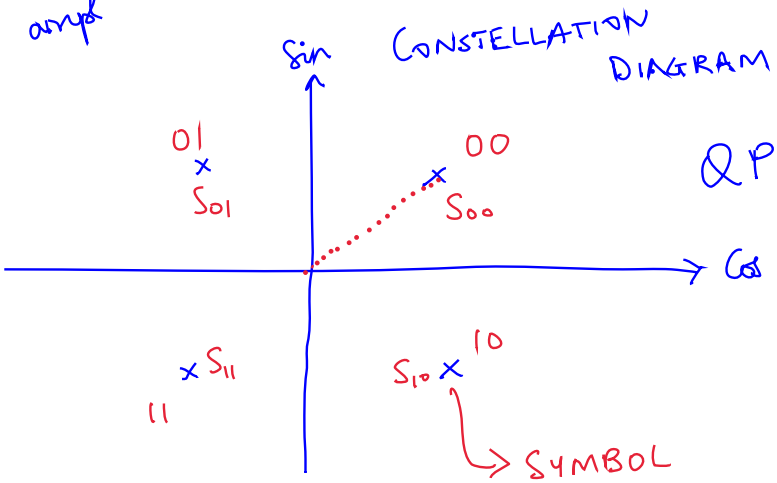
APPL.

TRANSPORT

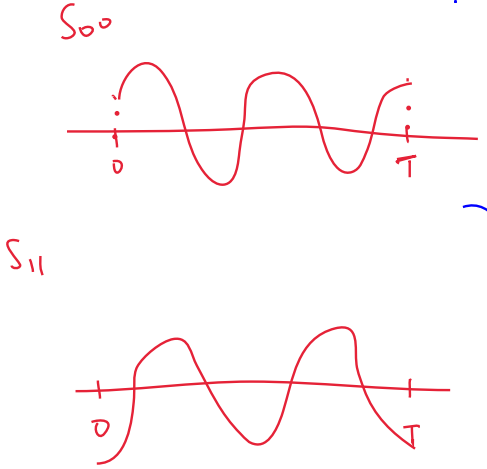
NETWORK

DLL ↓ bits

PHY ↓ signals



$$\int_0^T g(t)\, f(t)\, dt$$



DATA: 00 11 10 10

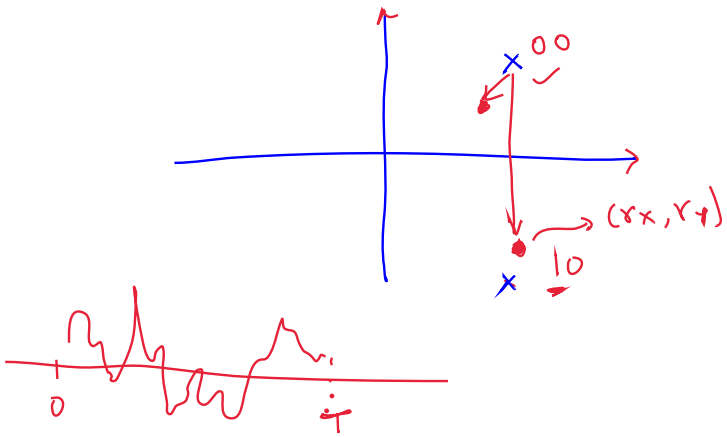
$s(t) = s_{00}\ s_{11}\ s_{10}\ s_{10}\ \ldots$

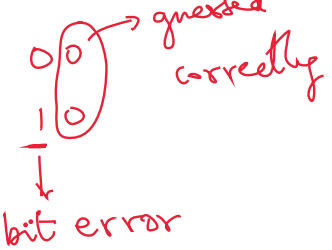
$$r(t) = a \cdot s(t) + n(t)$$

$$r_x = a \cdot s_x + n_x$$

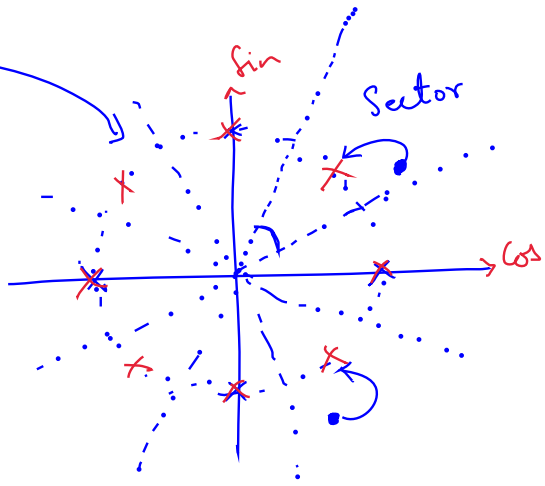
$$r_y = a \cdot s_y + n_y$$

Gaussian

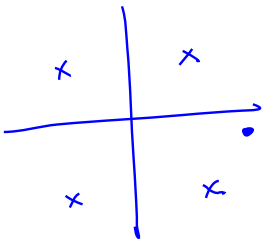




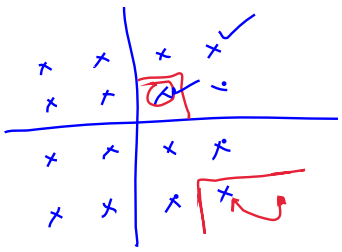
8-PSK

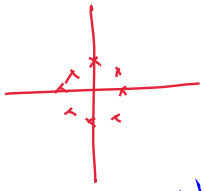


QPSK

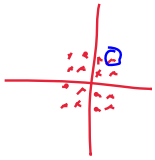


QAM-16





W-CDMA



CDMA

OFDM(A)