Tx → X

h, w
↓
Rx → awgn(X, SNR)

[SNR_1, SNR_2, SNR_3]

— FA_ottenuto > f ⇒ ~~[illegible]~~ aumento th

(2) F_ottenuto < f ⇒ ~~aumento~~ ridurre th

FA_o(t-1) FA_o(t)

(1) FA_o(t+1)

(2) FA_o(t+1)

— if FA ok ⇒ salvo th

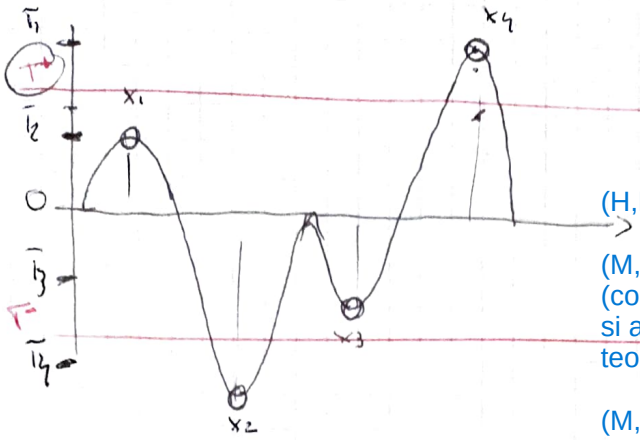
for . . .

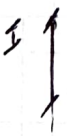
for . . . .

for . . . .

for T in [th]

for i . . N





(H,H) = alto-alto segnale ricevuto

(M,H) = medio-alto
(compreso tra "center" = 0 e (H,H) che si avvicina di più al valore medio teorico tra 0 ed H,H

(M,L) = medio-basso
(compreso tra "center" = 0 e (L,L) che si avvicina di più al valore medio teorico tra 0 ed L,L

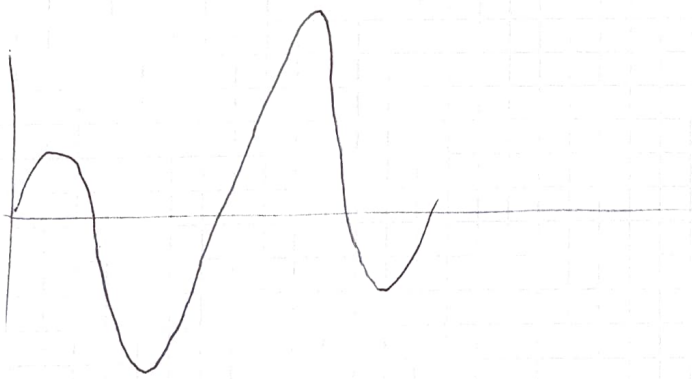
(L,L) = basso-basso segnale ricevuto

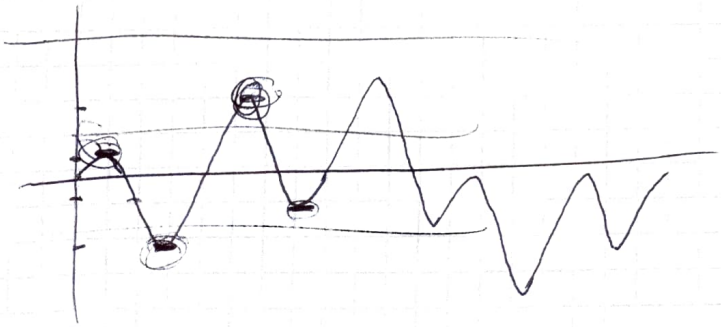
bit Dato: $\begin{cases} 0 \text{ if } x_i < 0 \\ 1 \text{ if } x_i > 0 \end{cases}$

bit Ridd. = $\begin{cases} 0 \text{ if: } \begin{cases} \text{bit Dato} = 1 \wedge x_i = \bar{I}_2 \\ \text{bit Dato} = 0 \wedge x_i = \bar{I}_4 \end{cases} \\ 1 \text{ if } \begin{cases} \text{bit Dato} = 1 \wedge x_i = \bar{I}_1 \\ \text{bit Dato} = 0 \wedge x_i = \bar{I}_3 \end{cases} \end{cases}$

x_i e $\bar{I}_2$ $x_i > \bar{I}_2$

Se non decodificato potenza $\frac{1}{0}$ = A (dato = 1) = A (dato = 0)





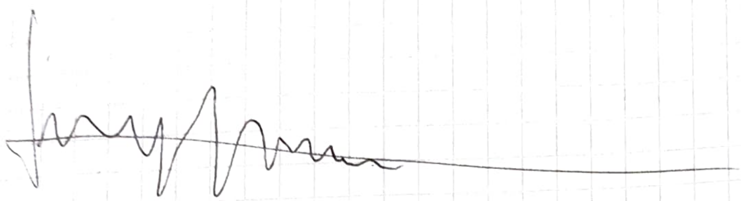
$Tx \rightarrow X$

101 100 101
110 1000 001

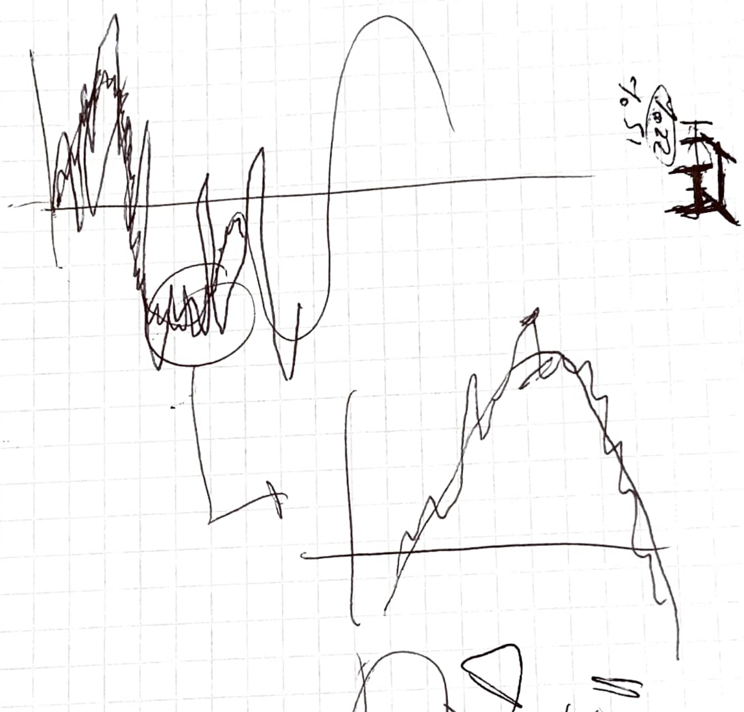
$y = h \cdot x + w$

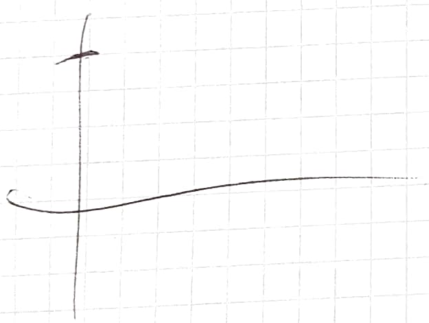
$h \cdot h^{-1} = 1$

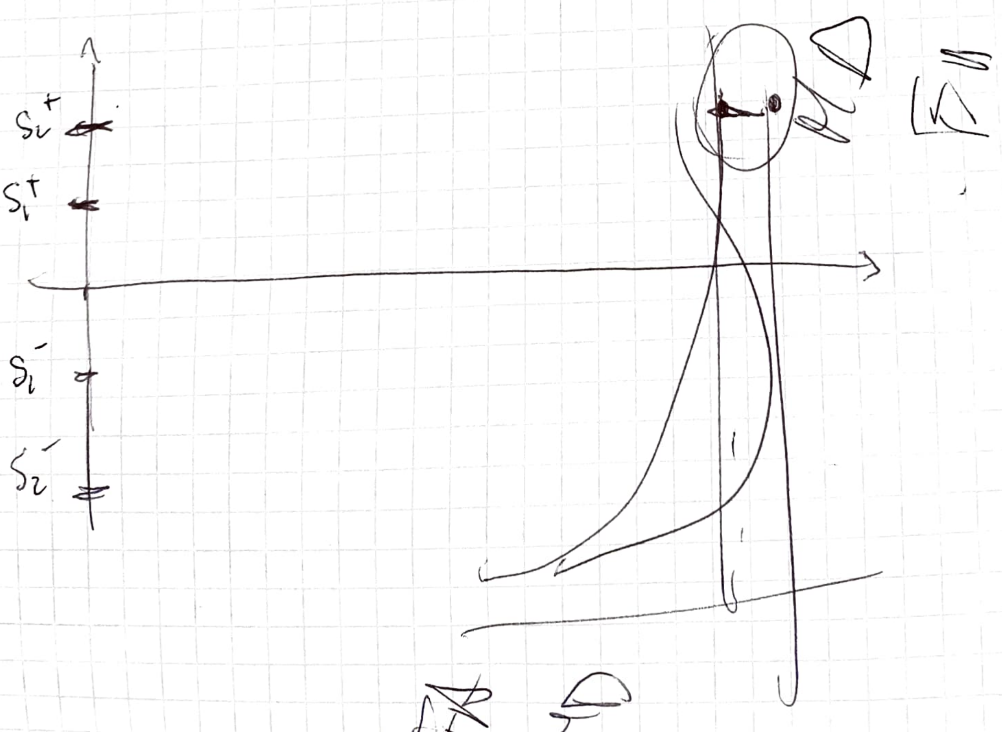
$y \rightarrow y \cdot \hat{h}^{-1} = h \cdot x \cdot \hat{h}^{-1}$



$SNR = \frac{P_x}{P_n}$







$\overline{Tx} \rightarrow X$

④ Calcolo BER dato un messaggio fisso variando distanze $Tx - Rx$ $[5 - 450]$

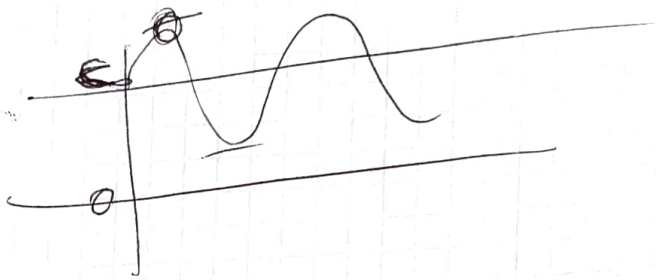
② Ripeto punto ④ 10 volte variando messaggio inviato
lo ottengo statistica del BER in base alla distanza $Tx - Rx$

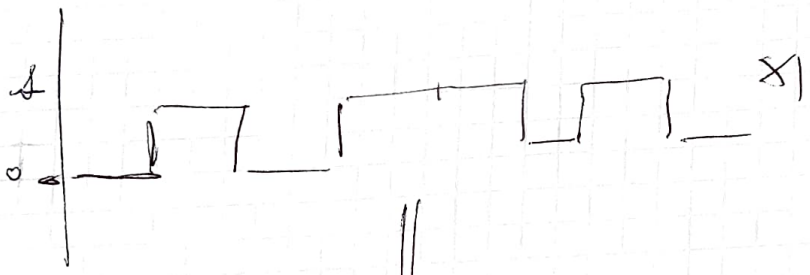
$A_1 = 20\ dB \rightarrow$ 1 x dati
$A_2 = 10\ dB \rightarrow$ 1 x auth.

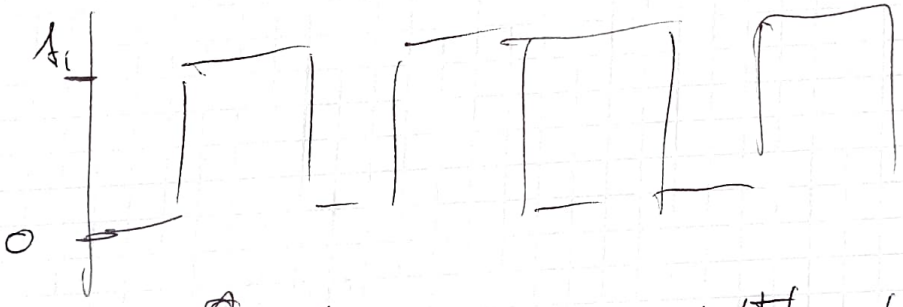
$X_1 = [\ldots]$ dato $\rightarrow \begin{cases} 1 \rightarrow A \\ 0 \rightarrow -1 \end{cases}$
$X_2 = [\ldots]$ auth.

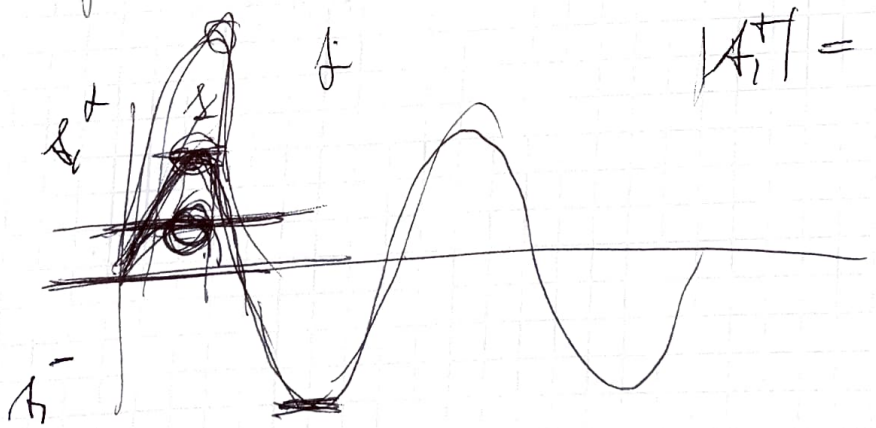
$S_1 = X_1 \cdot A_1$
$S_2 = X_2 \cdot A_2$

$S = S_1 + S_2$









$|A_1^+| = |A_1^-|$