^{2}

??

$_PPP.pdfPAM$

??

$$C = B\log_2(1+\gamma) \tag{1}$$

γ **??**CB

??

$$\eta_{SE} = C/B = \log_2(1+\gamma) \tag{2}$$

$C/Bbps/\mathrm{Hz}$**??**

$bps/\mathrm{Hz}/cellbps/\mathrm{Hz}/\mathrm{m}^2$**??**

$$\eta_{ASE} = C/(B{\cdot}S) = \log_2(1+\gamma)/S \tag{3}$$

?

i

$H =$

$\left[T^{(4)}_{m\times(n-m)}L_{m\times m}\right]_{m\times n}L$

$ubvv =$

(u,b)

??

$$b_i = \sum_{j=1}^{n-m} h_{i,j}u_j + \sum_{j=1}^{i} h_{i,j+n-m}b_j \tag{4}$$

$h_{i,j}Hiju_jujb_ibi$

2

??

$$H = \begin{bmatrix} T^{(5)}_{m-g\times(n-m)} & T^{(6)}_{m-g\times(g)} & L_{(m-g)\times(m-g)} \\ T^{(7)}_{g\times(n-m)} & T^{(8)}_{g\times(g)} & T^{(9)}_{g\times(m-g)} \end{bmatrix}_{m\times n} \tag{5}$$

L $v =$

$(u,b_1,b_2)ub_1b_2b_1gb_2m-$

$gvH^T =$

0**??**

$$\begin{cases} T^{(5)}u^T + T^{(6)}b_1^T + Lb_2^T = 0 \\ \left(-T^{(9)}L^{-1}T^{(5)} + T^{(7)}\right)u^T + \left(-T^{(9)}L^{-1}T^{(6)} + T^{(8)}\right)b_1^T = 0 \end{cases} \tag{6}$$

$P =$

$-EL^{-1}B+$

DP

$$\begin{cases} b_1^T = -Q^{-1}\left(-T^{(9)}L^{-1}T^{(5)} + T^{(7)}\right)u^T \\ b_2^T = -L^{-1}\left(T^{(5)}u^T + T^{(6)}b_1^T\right) \end{cases} \tag{7}$$

??

??

$\hat{c} \in$

$\{0,1\}dxdylyl$**??**

$$L(c|y) = \log\left(\frac{\Pr(c=0|y)}{\Pr(c=1|y)}\right) \tag{8}$$

??

$$L(c|y) = \log\left(\frac{\Pr(y|c=0)}{\Pr(y|c=1)}\right) \tag{9}$$

??

$$L(c|y) = \log\left(\frac{\prod_{l=0}^{d-1}\Pr(y_l|c=0)}{\prod_{l=0}^{d-1}\Pr(y_l|c=1)}\right) = \sum_{l=0}^{d-1}\log\left(\frac{\Pr(y_l|c=0)}{\Pr(y_l|c=1)}\right) = \sum_{l=0}^{d-1}L(y_l|x) \tag{10}$$

$y_lL(c|y) >$

$0\hat{c} =$

$0\hat{c} =$

1

????

$$L_{i\to j} = L_i + \sum L_{i'\to j}$$