$$\mathcal{E}_{1} = \begin{bmatrix} 0.17 & 0.17 \\ 0.0 & 0.17 \end{bmatrix}, \quad \mathcal{E}_{2} = \begin{bmatrix} 0.18 & 0.13 \\ 0.13 & 0.12 \end{bmatrix}, \quad \mathcal{E}_{3} = \begin{bmatrix} 0.17 & 0.12 \\ 0.12 & 0.18 \end{bmatrix}$$













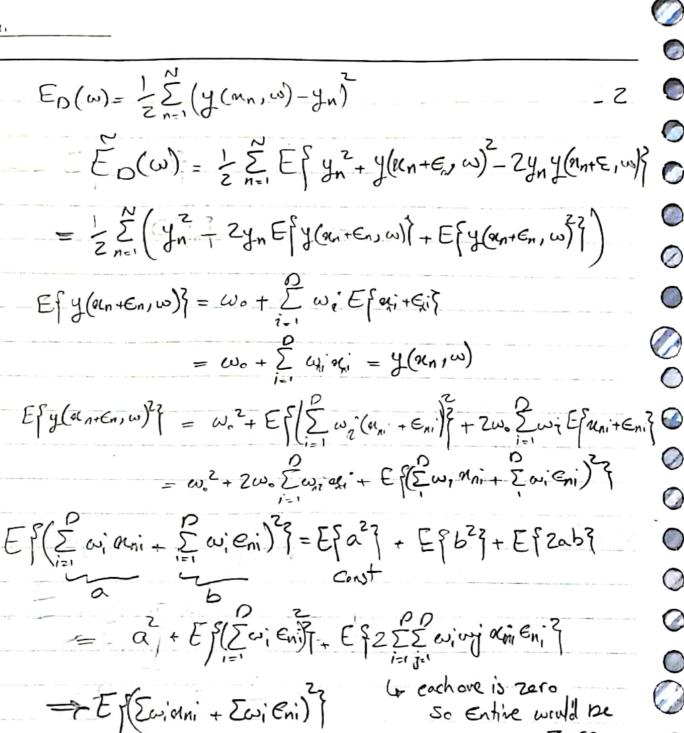












= Ep(Ewidni + Ewieni) } Go Entire would be Eni i, i, i, i = (\(\gamma_{\text{o}} \alpha_{\text{ini}} \right)^2 + \(\gamma_{\text{o}} \cdots_{\text{o}} \right)^2 + \(\gamma_{\text{o}} \gamma_{\text{o}} \right)^2 + \(\gamma_{\text{o}} \gamma_{\text{o}} \right)^2 + \(\gamma_{\text{o}} \gamma_{\t

by assembling all the parts, we only get one more residuel part: 5,250,2

So: Ep(w), = Ep(w)+0, 2 Dw, 2

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using k-1 BLRS.

we know
$$P(K) = 1 - \sum_{i=1}^{K-1} P(i) = 1 - \sum_{i=1}^{K-1} P(K)e^{i}$$

$$W_{K} = c \qquad \Rightarrow P(K) = \frac{e^{\omega_{i} \alpha}}{1 + \sum_{k=1}^{K-1} e^{\omega_{i} \alpha}} \Rightarrow P(k) = \frac{e^{\omega_{i} \alpha}}{1 + \sum_{k=1}^{K-1} e^{\omega_{i} \alpha}}$$

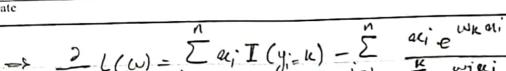
$$\Rightarrow P(y=i|\pi) = \frac{e^{\omega_i \alpha_i}}{\sum_{j=1}^{K} e^{\omega_j \alpha_j}}$$

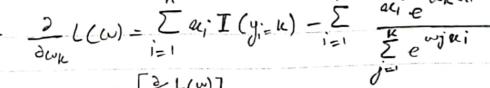
(

$$L(w) = \sum_{i=1}^{n} \omega_{y_{i}} g_{i} - \sum_{i=1}^{n} l_{n} \left(\sum_{j=1}^{k} e^{\omega_{j}^{2} u_{i}^{2}} \right)$$

$$\frac{\partial}{\partial \omega_{i}} \sum_{i=1}^{n} ln \left(\sum_{j=1}^{K} e^{\omega_{j} \alpha_{i}} \right) = \sum_{i=1}^{n} \frac{\partial}{\partial \omega_{i}} ln \left(\sum_{j=1}^{K} e^{\omega_{j} \alpha_{i}} \right)$$

$$= \sum_{i=1}^{N} \frac{1}{\sum_{i=1}^{K} e^{\omega_i^i u_i}} \cdot g_{i}^{i} \cdot e^{\omega_k^i u_i} = \sum_{i=1}^{M} \frac{g_{i}^{i} \cdot e^{\omega_k^i u_i}}{\sum_{i=1}^{K} e^{\omega_i^i u_i}}$$

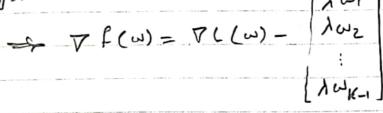




$$\nabla f(\omega) = \nabla L(\omega) - \nabla \left(\frac{1}{2} \sum_{j=1}^{k-1} |w_j|_z^2 \right)$$
 (5)

$$\frac{\partial}{\partial \omega_k} \frac{\lambda}{z} \frac{\sum_{j=1}^{2} |\omega_{j}|_{z}^{2}}{\int_{z}^{2} |\omega_{j}|_{z}^{2}} = \lambda \omega_k$$

$$\Rightarrow \nabla f(\omega) = \nabla L(\omega) - \int_{\lambda_0}^{\lambda_0} |\lambda_0|_{z}^{2}$$





PAPCO



$$\Rightarrow w_{j} = (x_{j}^{T}x_{j}^{T})^{T}x_{j}^{T}Y = x_{j}^{T}Y$$

$$(x_{j}^{T}x_{j}^{T})$$

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Shee [dj] is zero in all columns except yth column

$$\Rightarrow \hat{\omega}_j = \frac{1}{\lambda_j} \times \hat{j} \times \frac{1}{\lambda_j} \times \hat{j} \times \frac{1}{\lambda_j}$$

and $dj = x_j x_j$ we know

So $\widehat{\omega}_{j} = \frac{x_{i}^{T} Y}{(x_{i}^{T} x_{j}^{T})}$

$$Cov(nj,y) = \left(\sum_{i=1}^{N} a_i y_i - na_i y\right) \frac{1}{n-i}$$





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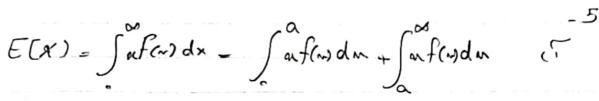
Date (east square)

taking partial derivatives. S(w, wo) = \(\frac{5}{2} (y: -w_0 - wai)^2\)

$$\Rightarrow \frac{\partial s}{\partial \omega_c} = -2 \sum_{i=1}^{N} (y_i - \hat{\omega_c} - \hat{\omega} \cdot \alpha_i) = 0$$

$$\Rightarrow \sum_{i=1}^{n} \alpha_{i} y_{i} - n \overline{\alpha} \overline{y} = \widehat{\omega} \left(\sum_{i=1}^{n} \alpha_{i}^{2} - n \overline{\alpha}^{2} \right)$$

$$=\frac{(n-1)\operatorname{Cov}(\alpha,y)}{(n-1)\operatorname{Var}(\alpha)}=\frac{\operatorname{Cov}(\alpha,y)}{\operatorname{Var}(\alpha)}$$



$$\Rightarrow E(x) \neq a p(x \neq a)$$

$$\Rightarrow$$
 $p(x(\alpha) \notin \frac{E(x)}{\alpha}$

$$E((x-\mu)^2) = \sigma_{\kappa}^2$$

it will get inside circle with
$$p(inside) = \frac{S_c}{S_s} = \frac{\pi r^2}{(2r)^2} = \frac{\pi}{4}$$

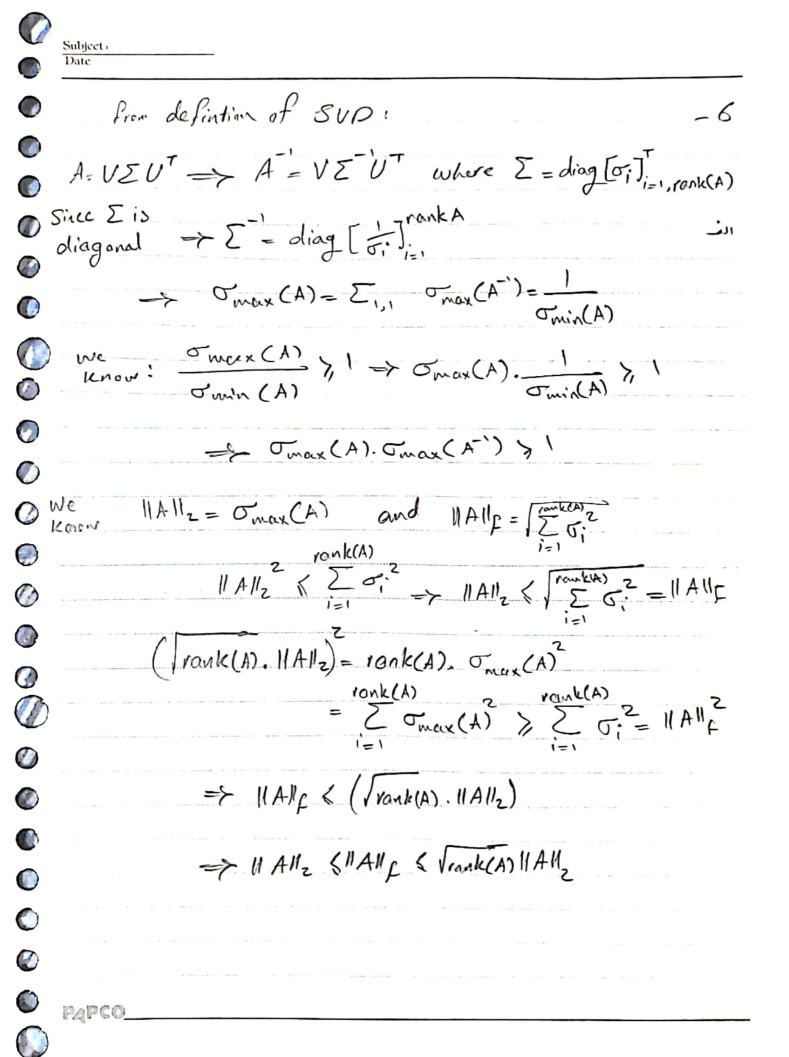
So if we throw N times we have a binomial randow var.
$$f(\frac{N\pi}{4}, N, \frac{\pi}{4}) = \binom{N}{4} \binom{n}{4} \binom{n}{4} \binom{n-n}{4}$$

 \mathscr{O}

$$\Rightarrow P(|k-Nn|) = 0 = \frac{5^2}{4}$$
binniel $\Rightarrow \mu$

$$\frac{\sigma^2}{\alpha^2} \leqslant 0.05 \Rightarrow \sigma^2 \leqslant 0.05 \times (0.01 \text{ NR})^2$$

$$\Rightarrow \text{NI}(1-II) \leqslant 5.70^4 \cdot \text{N}^2 II^2$$



$$O(\alpha 1) = \frac{1}{1 + e^{-\alpha t}} \frac{e^{\alpha t}}{e^{\alpha t}} \frac{\tanh(\alpha t)}{\tanh(\alpha t)} = \frac{e^{\alpha t}}{e^{\alpha t}} \frac{e^{2\alpha t}}{e^{2\alpha t}} \frac{e^{2\alpha t}}{e^{2\alpha t}} \frac{1}{1}$$

7

=
$$\omega_0 + \sum_{j=1}^{n} \left(\omega_j \frac{\tan \left(\frac{n-\mu_j}{s} \right) + 1}{2} \right)$$

0

$$= \omega_0 + \sum_{j=1}^{n} \omega_j + \sum_{j=1}^{n} \sum_{i=1}^{n} \omega_i \tanh(\frac{n-r_i}{z})$$

$$= \frac{u}{u_0} + \sum_{i=1}^{n} u_i \tanh(\frac{u-r_i}{2}) = y(u,u)$$

(3)

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