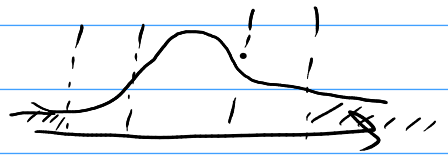
$H_0 : \theta \in \Theta_0$, $H_1 : \theta \notin \Theta_0$

$X_1, \dots X_n \in F(\theta)$



$f(X_1, \dots, X_n) = \hat{\theta}$

$\alpha = P(\text{принять } H_1 \mid H_0)$

$\beta = P(\text{принять } H_0 \mid H_1)$

$$S(\theta) = \frac{\partial \log L(\theta)}{\partial \theta}$$

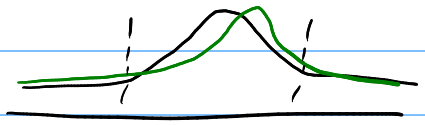
$$J = E\left(\frac{\partial \log L(\theta)}{\partial \theta}\right)^2$$

$$J = -E\,\frac{\partial^2 \log L(\theta)}{\partial \theta^2}$$

$$D(\hat{\theta}) \geq \frac{1}{J(\theta)}$$

$$t = \frac{\bar{x} - \mu_0}{\sigma/\sqrt{n}} \sim t(n-1)$$

$$\frac{\bar{x} - \mu_0}{\sigma/\sqrt{n}} \not\sim t(n-1)$$



$$\bar{x} \sim N\left(\mu, \frac{\sigma^2}{n}\right)$$

$$\frac{\sigma^2}{n}(n-1) \sim \chi^2(n-1)$$

$$U = \sum_{i=1}^{n}\sum_{j=1}^{m} S(X_i, Y_j)$$

$X_1, \dots X_n$

$Y_1, \dots, Y_m$

$$S(X, Y) = \begin{cases} 1, & X > Y \\ 0{,}5, & X = Y \\ 0, & X < Y \end{cases}$$

$$\sqrt{n} = \frac{(\Phi^{-1}(\alpha) + \Phi^{-1}(1-\beta))(\sigma_x + \sigma_x)}{m\Delta E^2}$$

$f(X) > a$, $H_0: \theta > \theta_0$, $H_1: \theta \leq \theta_0$

$P(f(X) > a \mid \theta > \theta_0) = \alpha$

$P(f(X) \leq a \mid \theta \leq \theta_0) = \beta$

СЛРЕД

$E(\hat{\theta}) = \theta$

$\hat{\theta}_{СЛР} = \hat{\theta} - \alpha \cdot \hat{\theta}_a$, $E(\hat{\theta}_a) = 0$

$D(\hat{\theta}_{СЛР}) = D(\hat{\theta}) + D(\hat{\theta}_a) - 2\,cov(\hat{\theta}, \hat{\theta}_a)$

$D(\hat{\theta}_{СЛР}) = D(\hat{\theta}) + \alpha^2 D(\hat{\theta}_a) - 2\alpha\, cov(\hat{\theta}, \hat{\theta}_a)$

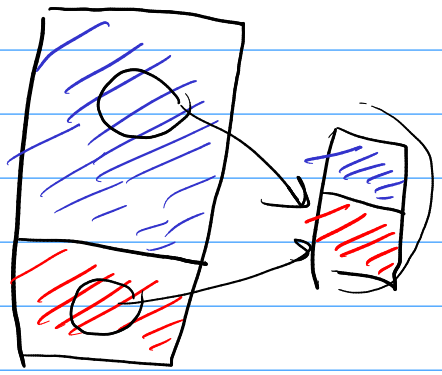
$2\alpha D(\hat{\theta}_a) - 2cov(\hat{\theta}, \hat{\theta}_a) = 0$

$$\alpha = \frac{cov(\hat{\theta}, \hat{\theta}_a)}{D(\hat{\theta}_a)}$$

$$\hat{\theta}_{СЛР} = \hat{\theta} - \frac{cov(\hat{\theta}, \hat{\theta}_a)}{D(\hat{\theta}_a)} \cdot \hat{\theta}_a$$

0,2 0,8

180 170



$$\bar{Y} = \frac{1}{n} \sum_{k=1}^{K} \sum_{j=1}^{n_k} Y_{kj} \quad ; \quad \bar{Y}_{str} = \sum_{k=1}^{K} w_k \bar{Y}_k$$