INTERVALOS DE CONFIANÇA
FINAL

Tome

$$\underset{\sim}{X_1, X_2} \overset{iid}{\sim} U\left(\theta - \frac{1}{2}, \theta + \frac{1}{2}\right)$$

$\theta \in \mathbb{R}$ $\qquad \underset{\sim}{X} = (X_1, X_2)$

Tome $\quad m = \min\{X_1, X_2\}$

$\quad M = \max\{X_1, X_2\}$

$V = (m, M)$

$$Pr(m \leq \theta \leq M)$$

$$= Pr(X_1 < \theta < X_2) + Pr(X_2 < \theta < X_1)$$

$$= \underbrace{Pr(X_1 < \theta)}_{1/2} \, \underbrace{Pr(\theta < X_2)}_{1/2} + \underbrace{Pr(X_2 < \theta)}_{1/2} \, \underbrace{Pr(\theta < X_1)}_{1/2}$$

$$\gamma = \frac{1}{4} + \frac{1}{4} = \frac{1}{2}.$$

$$I(\underset{\sim}{X}) = (m, M)$$

$$\Rightarrow Pr(\theta \in I(\underset{\sim}{X})) = \frac{1}{2}.$$

$$\Pr\left(M-\frac{1}{2} \le \theta \le m+\frac{1}{2}\right) = 1$$

<u>OBS</u>

$$\underline{y}\begin{cases} m = y_1 \\ M = y_2 \end{cases}$$

$$\boxed{\begin{array}{l} \tilde{I}(x) = (m, M) \\ \Pr(\theta \in \tilde{I}(\underline{x})) = \frac{1}{2} \end{array}}$$

$$y_2 - y_1 > \frac{1}{2} \Rightarrow y_1 < y_2 - \frac{1}{2}$$

$$\Rightarrow m < \theta < M$$

$$\Pr(\theta \in \tilde{I}(y)) = 1$$

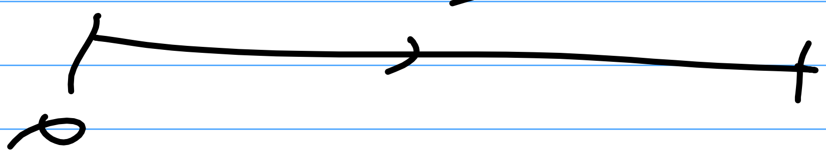
HIPÓTESES

CONJUNTO $\mathcal{X}$

PARTIÇÃO

$$\tilde{\mathcal{X}} = \left\{ X_j : X_i \cap X_j = \emptyset, \ \forall i,j \quad \bigcup_{j=1}^{J} X_j = \mathcal{X} \right\}$$

$[0,1]$



$(0,\tfrac{1}{2})$, $[\tfrac{1}{2},1]$

β $\qquad\qquad$ $\beta \in (-\infty, \infty)$

$$\begin{cases} H_0: \ \beta \leq 0 \\ H_1: \ \beta > 0 \end{cases}$$

$\beta > 0$ $\qquad\qquad$ $\beta = \varepsilon > 0$

$\hat{\beta} = \underline{0.001}$ $(0.0009, 0.003)$

DG 9.1

$C = mg/l$

$\boxed{\text{ICs e TESTES}}$

$\overbrace{X_1, \dots, X_n} \sim F(\theta)$

n PAMONHAS

$\mu \in (0, \infty)$

$X_1, \dots, X_n \sim N(\underline{\mu}, \sigma^2)$

θ — μ

σ^2 — CONHECIDO

$$\begin{cases} H_0: \mu \geq 7 \\ H_1: \mu < 7 \end{cases}$$

$$I(\underset{\sim}{X}) = (A(\underset{\sim}{X}), B(X))$$

$$Pr(\mu \in I(\underset{\sim}{X})) \geq \gamma$$

1 σ^2 É CONHECIDA

$$\frac{\overline{X}_n - \mu}{\sqrt{\frac{\sigma^2}{n}}} \sim N(0,1)$$

$$z = \Phi^{-1}\left(\frac{1+\gamma}{2}\right)$$

$$A(X) = \overline{X}_n - \frac{z}{\sqrt{\frac{\sigma^2}{n}}}$$

$$B(X) = \overline{X}_n + \frac{z}{\sqrt{\frac{\sigma^2}{n}}}$$

COMPRIMENTO FIXO.

$X = x$

$\tau \in I(x)$

$$P_r(\mu \in \Lambda_0) =$$

$$P_r(\tau \in I(x)) = \gamma$$

HIPÓTESE SIMPLES

$$\boxed{\mu = 7}$$ $\{7\}$

HIPÓTESE COMPOSTA

$\mu \in (a, b)$, $b > a$

$(a, b) \subset (-\infty, \infty)$

$H_0: \mu \neq 7$

$\in (0, 7) \cup (7, \infty)$

$H_1 = \mu = 7$

$-\infty < a < b < \infty$

"SHARP"

$H_i: \mu \in (a, b)$

EXEMPLO 1

$H_0 : \mu \in (a, b)$

$-\infty < a < b < \infty$

- COMPOSTA
- BILATERAL

$H_1 : \mu \notin (a, b)$

$\mu \in (-\infty, a] \cup [b, \infty]$

EXEMPLO 2

$H_0 : \mu = \mu_0$

- SIMPLES
- BILATERAL

$H_1 : \mu \neq \mu_0$

$\mu \in (-\infty, \mu_0) \cup (\mu_0, \infty)$

$\theta \in [0, \infty)$

$H_0 : \theta = 0$

$H_1 : \theta \in (0, \infty)$