

$$\alpha := \underbrace{P(\mu_s > \mu_c \mid \text{data})} \approx \frac{1}{N} \sum_{i=1}^N \mathbb{1}(\mu_s^{(i)} > \mu_c^{(i)})$$

Goal: $\alpha \pm \sigma(x)/\sqrt{N}$

$X \rightarrow$ generated data value (sim via MC)

What is the distⁿ of X (my sampled data point)?

$$X \sim \mathbb{1}(\mu_s > \mu_c)$$

$$\begin{array}{ll} \text{if } \mu_s > \mu_c & X = 1 \\ \text{otherwise} & X = 0 \end{array}$$

$$\boxed{X \sim \text{Bern}(\alpha)}$$

std of Bern(α)

$$\alpha \pm \sigma(x)/\sqrt{N} = \alpha \pm \frac{\sqrt{\alpha(1-\alpha)}}{\sqrt{N}}$$

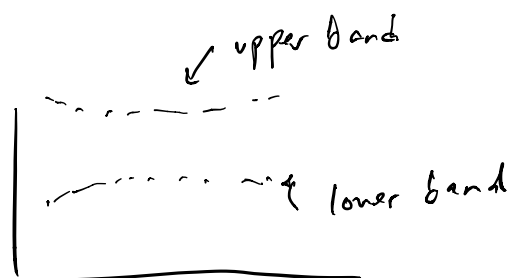


Fig 1