Research Question

TRT

Design

topographical logistics

a b c

$y \sim N(\mu, \Sigma)$

TRT

Error design

likelihood

3 sd

μ

$y = \mu + \varepsilon$

$\varepsilon \sim N(0, \sigma^2)$

$E(y) = \mu$

$Var(y) = \sigma^2$

RCBD

$y_{ijk} = \mu + T_j + b_k + \varepsilon_{ijk}$

random fixed

$\varepsilon_{ijk} \sim N(0, \sigma^2)$

$\hat{\beta} \sim N(\beta, f(\sigma^2))$

$b \sim N(0, \sigma_b^2)$

Model

$$\underline{y} = \begin{bmatrix} y_1 \\ y_2 \\ y_3 \\ \vdots \\ y_m \end{bmatrix} \sim \mu \begin{bmatrix} \mu_1 \\ \mu_2 \\ \mu_3 \\ \vdots \\ \mu_m \end{bmatrix}$$

TRT

Design

1 2 3

$\sigma_e^2 + \sigma_b^2$

σ_{ab} σ_b^2