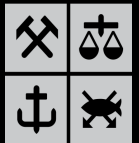


WHAT IS A MODEL?

NHH
TECH3

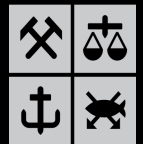




$$F = m \cdot a$$



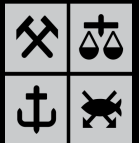
NHH
TECH3



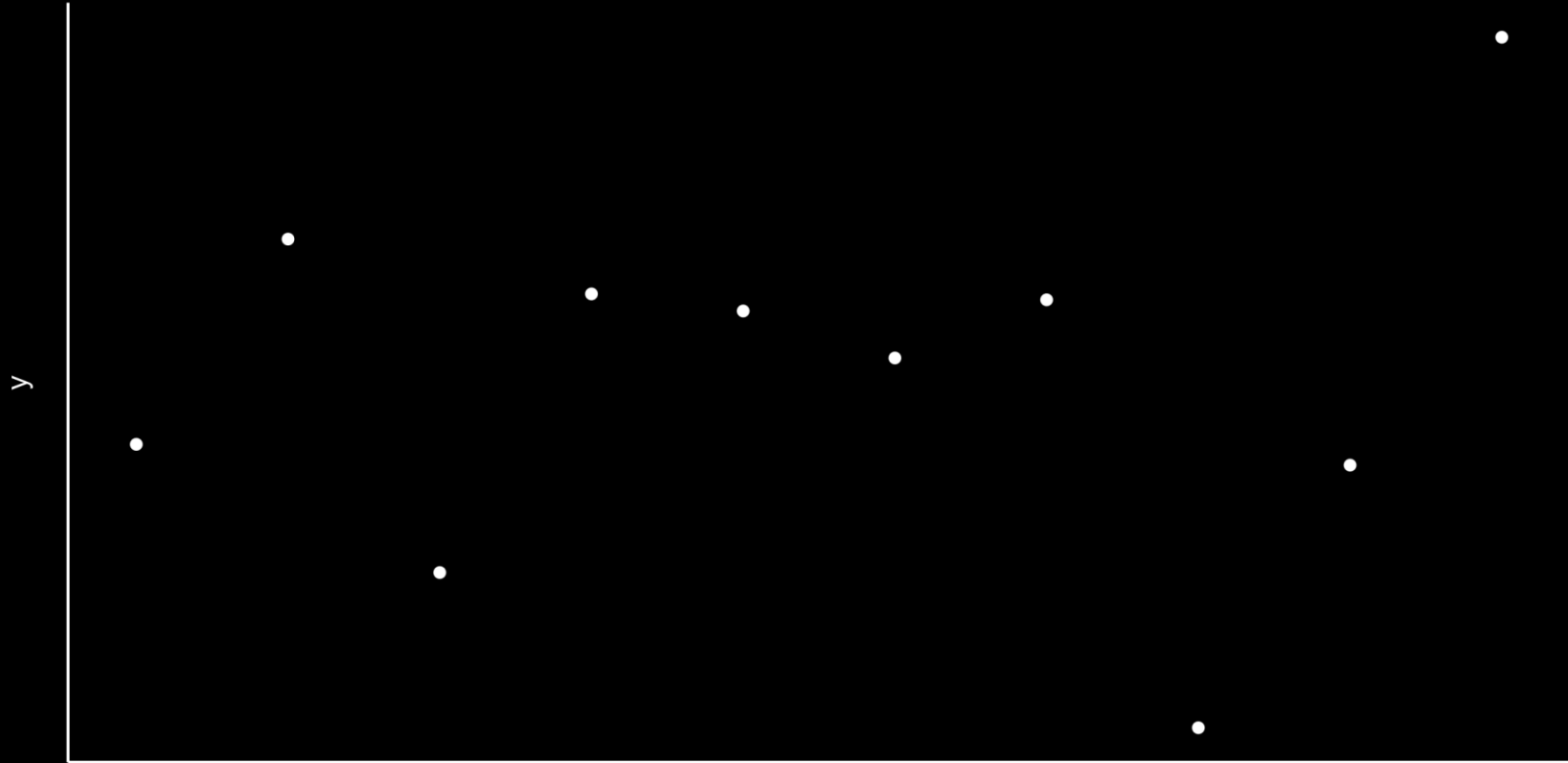
STATISTICAL MODELS

**DESCRIBE HOW THE OBSERVED DATA
WERE GENERATED.**

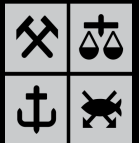
NHH
TECH3



THE DATA



NHH
TECH3



STATISTICAL MODEL:

$$Y_i = \mu + \epsilon_i, \quad i = 1, \dots, n$$

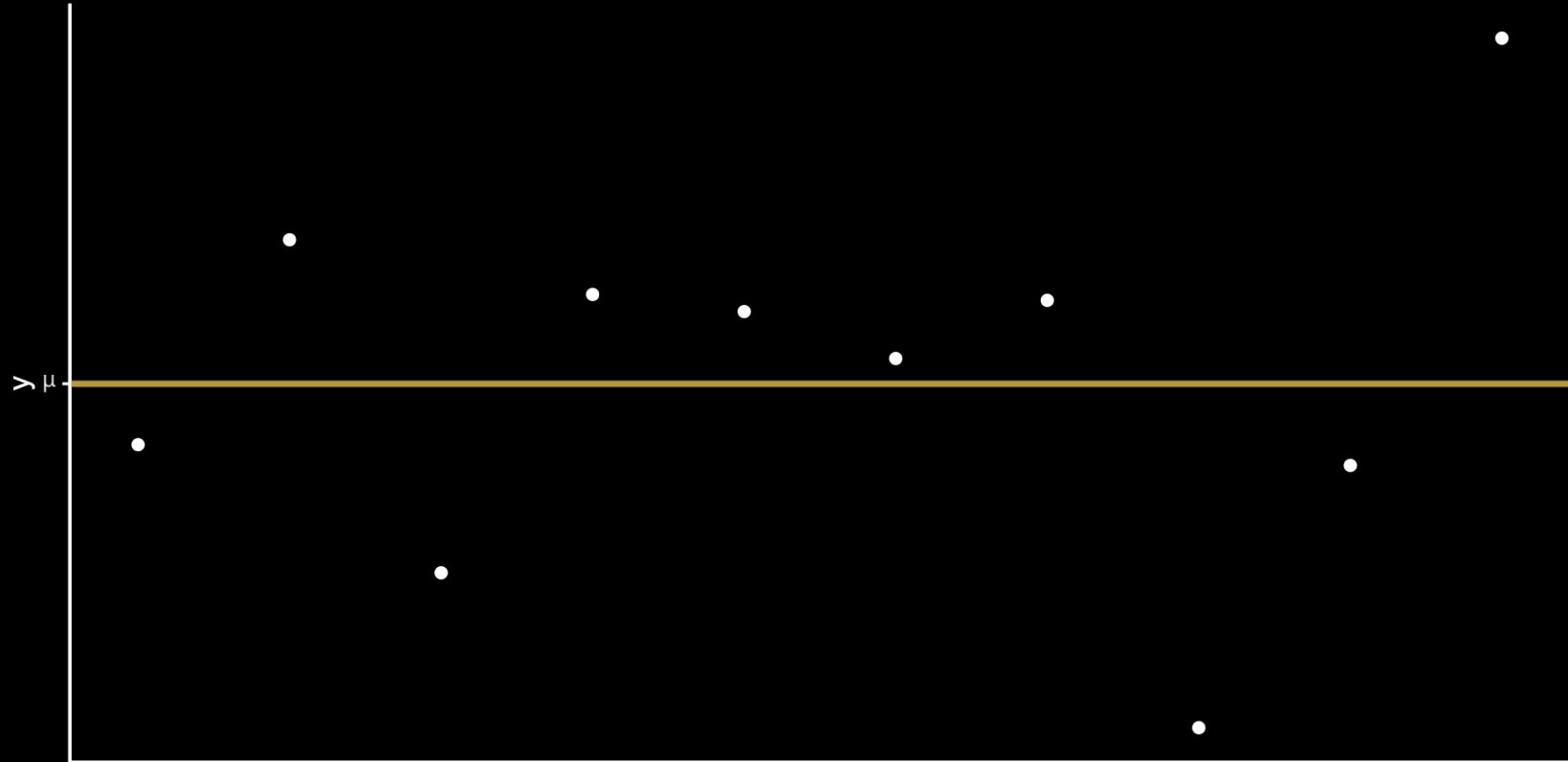
Data = Model + Error

where $\epsilon_1, \epsilon_2, \dots, \epsilon_n$ are independent and identically distributed.

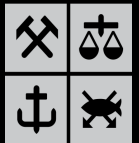
$$\underbrace{f(\epsilon_1, \epsilon_2, \dots, \epsilon_n)}_{\text{Joint distribution}} = \underbrace{f(\epsilon_1)f(\epsilon_2) \cdots f(\epsilon_n)}_{\text{Marginal distributions}}$$

(drawn from the same distribution f)

THE MODEL



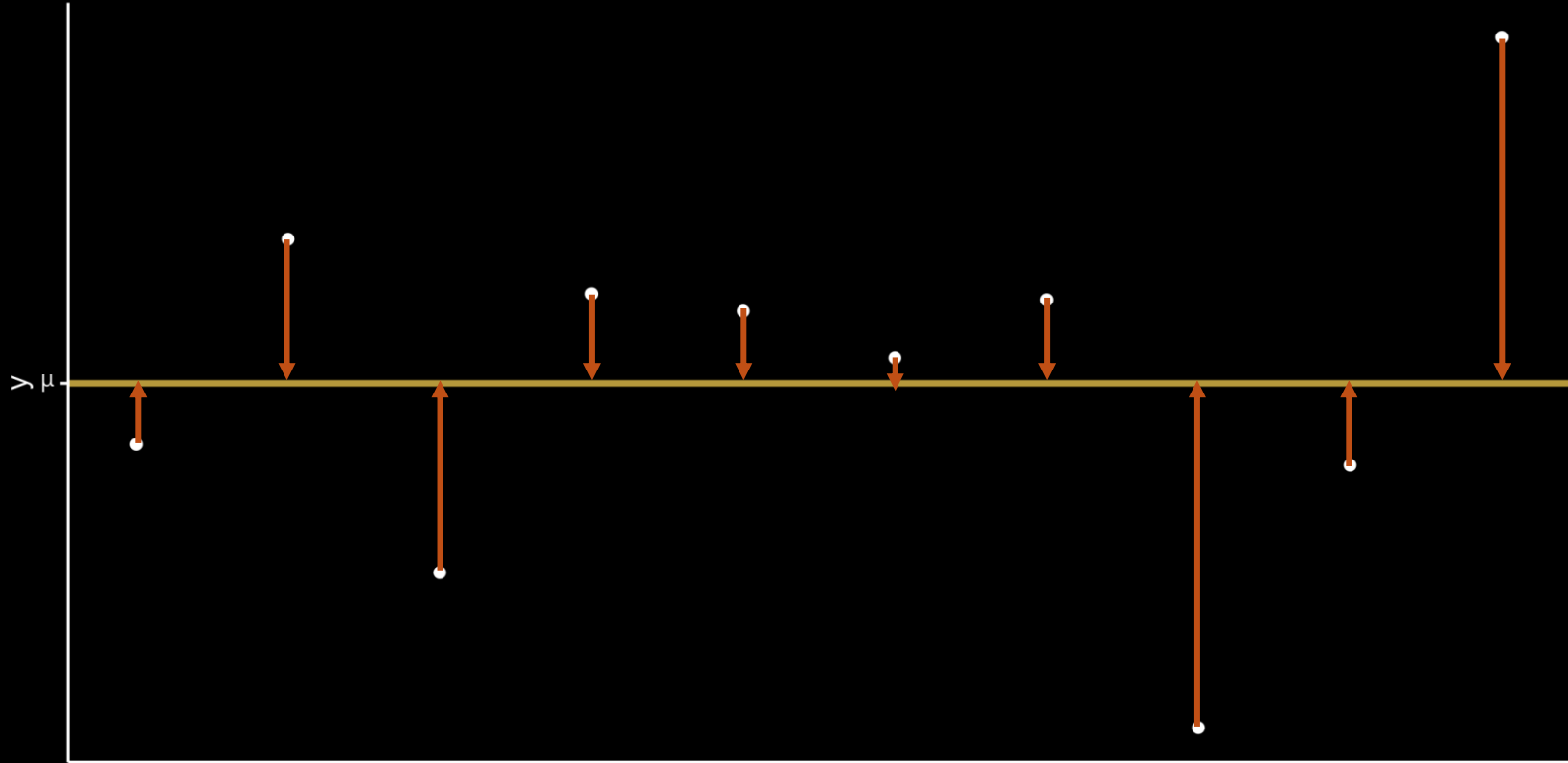
NHH
TECH3



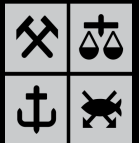
ERROR OR RESIDUAL: $\epsilon_i = Y_i - \mu$

Error = Data – Model

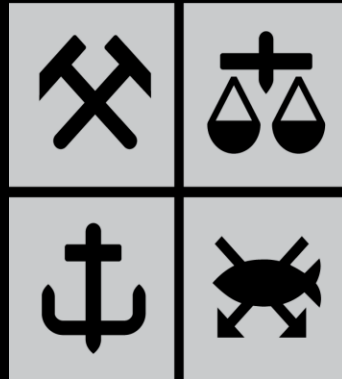
RESIDUALS/ERRORS



NHH
TECH3



NHH TECH3



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