$$Y_i = \beta_0 + \beta_1 x_{i1} + \cdots + \beta_p x_{ip} + e_i$$

V.A.

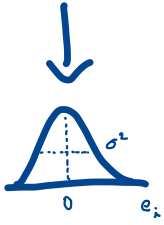
$\hat{Y}_i$

V.A.

ALL POSSIBLE SOLUTIONS FOR $Y_i = X_i\beta + e_i$ GIVEN $\beta$

$$Y_{i1} = \hat{\beta}_{01} + \hat{\beta}_{11} x_{i1} + \cdots + \hat{\beta}_{p1} x_{ip} + e_{i1}$$

$$Y_{iK} = \hat{\beta}_{0K} + \hat{\beta}_{1K} x_{i1} + \cdots + \hat{\beta}_{pK} x_{ip} + e_{iK}$$




$$E[Y_i] = E[\beta_0 + \beta_1 x_{i1} + \cdots + \beta_p x_{ip}] + E[e]$$

($\beta_0 + \beta_1 x_{i1} + \cdots + \beta_p x_{ip} = \mu_i$, $E[e] = 0$)

$$VAR[Y_i] = E[\beta_0 + \beta_1 x_{i1} + \cdots + \beta_p x_{ip}] + E[e]$$

($\beta_0 + \beta_1 x_{i1} + \cdots + \beta_p x_{ip} = 0$, $E[e] = \sigma^2$)