

ORIGIN := 1

$$x_1 := \begin{pmatrix} 0.058 \\ 0.141 \\ 0.3 \\ 0.441 \\ 0.522 \\ 0.683 \\ 0.818 \\ 0.851 \\ 0.950 \end{pmatrix} \quad \gamma_1 := \begin{pmatrix} 2.9 \\ 2.51 \\ 2 \\ 1.64 \\ 1.5 \\ 1.24 \\ 1.1 \\ 1.07 \\ 1.013 \end{pmatrix} \quad \gamma_2 := \begin{pmatrix} 1.03 \\ 1.06 \\ 1.15 \\ 1.29 \\ 1.40 \\ 1.84 \\ 2.73 \\ 3.05 \\ 5.54 \end{pmatrix}$$

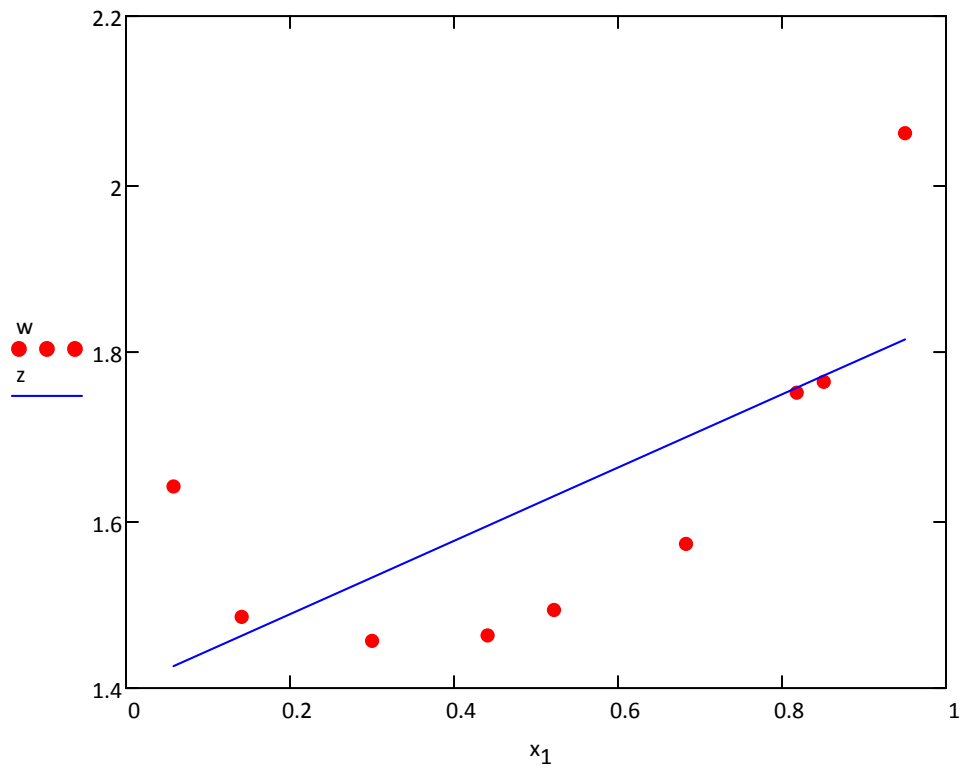
i := 1 .. 9

$$x_{2_i} := 1 - x_{1_i}$$

$$Gex_i := x_{1_i} \cdot \ln(\gamma_{1_i}) + x_{2_i} \cdot \ln(\gamma_{2_i})$$

### Three-suffix Margules

$$w_i := \frac{Gex_i}{x_{1_i} \cdot x_{2_i}} \quad z_i := \text{slope}(x_1, w) \cdot x_{1_i} + \text{intercept}(x_1, w)$$

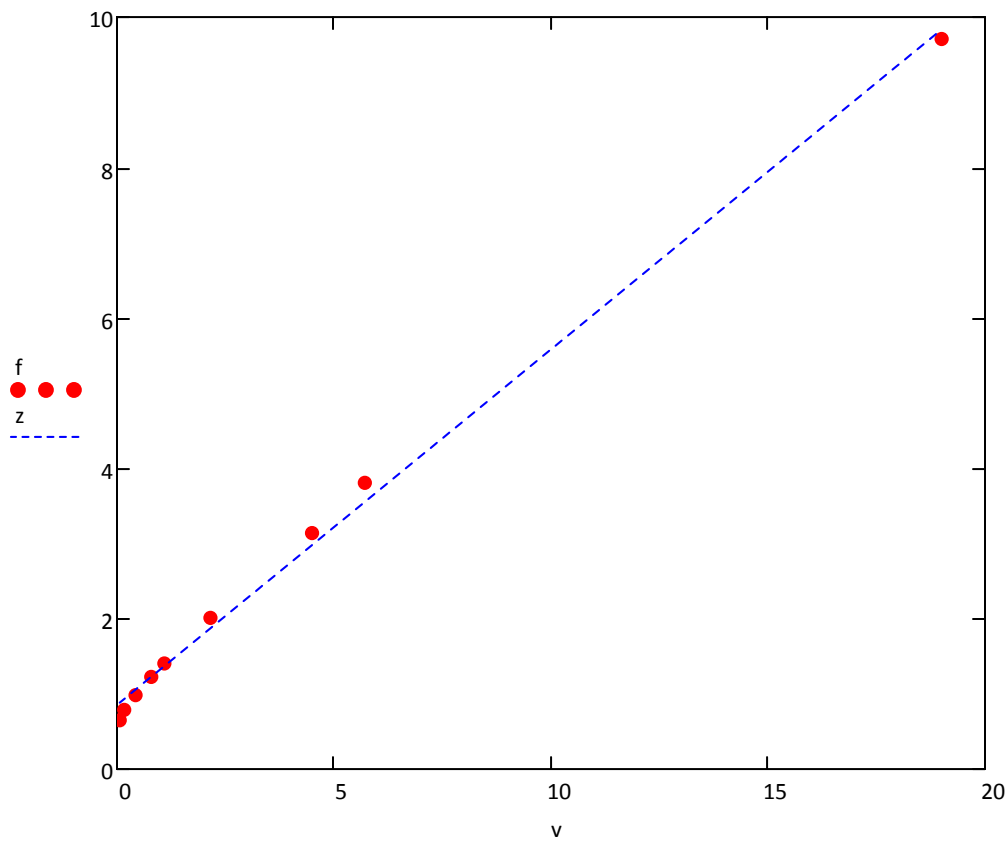


$$\text{slope}(x_1, w) = 0.436 \quad \text{intercept}(x_1, w) = 1.401 \quad \text{corr}(x_1, w) = 0.698$$

### van Laar Model

$$f_i := \frac{x_{1_i}}{\text{Ge}x_i} \quad v_i := \frac{x_{1_i}}{x_{2_i}}$$

$$z_i := \text{slope}(v, f) \cdot v_i + \text{intercept}(v, f)$$



$$\text{slope}(v, f) = 0.473 \quad \text{intercept}(v, f) = 0.852 \quad \text{corr}(v, f) = 0.998$$

$$A := \frac{1}{\text{intercept}(v, f)} = 1.174$$

$$B := \frac{1}{\text{slope}(v, f)} = 2.115$$