

$$t_i(t) = \begin{cases} nn \leftarrow \text{rows}(t) \\ t_{i_1} \leftarrow 1 \text{ hr} \\ \text{for } i \in 1..nn-1 \\ \quad \left| \begin{array}{l} t_{i_{k+1}} \leftarrow t_i \\ t_i \end{array} \right. \end{cases} \quad t_j(t) = t \quad K := 10$$

$f_{pi} := 213 \text{ ksi}$

$f_{py} := 230 \text{ ksi}$

$K := 10$

ORIGIN $\equiv 1$

$$\Delta f_{R_i}(t, f_{pi}, f_{py}) = \begin{cases} nn \leftarrow \text{rows}(t) \\ \text{"Initial Condition"} \\ f_{pi_1} \leftarrow f_{pi} \\ t_i \leftarrow t_i(t) \\ t_j \leftarrow t_j(t) \\ \Delta f_{R_1} \leftarrow \frac{f_{pi_1}}{K} \cdot \left(\frac{f_{pi_1}}{f_{py}} - 0.55 \right) \cdot \log \left(\frac{t_{j_1}}{t_{i_1}} \right) \\ f_{pi_2} \leftarrow f_{pi_1} - \Delta f_{R_1} \\ \text{"Iteration step"} \\ \text{for } i \in 2..nn \\ \quad f_{pi_{i-1}} \leftarrow f_{pi_i} - \Delta f_{R_i} \\ \quad \Delta f_{R_i} \leftarrow \frac{f_{pi_{i-1}}}{K} \cdot \left(\frac{f_{pi_{i-1}}}{f_{py}} - 0.55 \right) \cdot \log \left(\frac{t_{j_i}}{t_{i_i}} \right) \end{cases} \Delta f_R$$

$\log(0) = ?$

$$t_i(t) = \begin{bmatrix} 0 \\ 0.042 \\ 3 \\ 7 \\ 30 \\ 90 \\ 365 \\ 1825 \\ 18250 \end{bmatrix} \text{ day} \quad t_j := t_j(t) = \begin{bmatrix} 1 \\ 3 \\ 7 \\ 30 \\ 90 \\ 365 \\ 1825 \\ 18250 \end{bmatrix} \text{ day}$$

$$t_i := \begin{bmatrix} 0.000001 \\ 0.042 \\ 3 \\ 7 \\ 30 \\ 90 \\ 365 \\ 365 \cdot 5 \\ 365 \cdot 50 \end{bmatrix} \cdot \text{day} \quad t_j := \begin{bmatrix} 0.000001 \\ 3 \\ 7 \\ 30 \\ 90 \\ 365 \\ 365 \cdot 5 \\ 365 \cdot 50 \end{bmatrix} \cdot \text{day}$$

$i := 2.. \text{rows}(t_i) - 1$

$$f_{pi_1} := f_{pi} \quad \Delta f_{R_1} := \frac{f_{pi_1}}{K} \cdot \left(\frac{f_{pi_1}}{f_{py}} - 0.55 \right) \cdot \log \left(\frac{t_{j_1}}{t_{i_1}} \right)$$

$$\begin{bmatrix} \Delta f_{R_i} \\ f_{pi_i} \end{bmatrix} := \begin{bmatrix} \frac{f_{pi_{i-1}}}{K} \cdot \left(\frac{f_{pi_{i-1}}}{f_{py}} - 0.55 \right) \cdot \log \left(\frac{t_{j_i}}{t_{i_i}} \right) \\ f_{pi_{i-1}} - \Delta f_{R_{i-1}} \end{bmatrix}$$

$$\frac{f_{pi}}{f_{py}} = 0.926$$

$$\log\left(\frac{tj_i}{ti_i}\right) = \begin{bmatrix} 1.854 \\ 0.368 \\ 0.632 \\ 0.477 \\ 0.608 \\ 0.699 \\ 1 \end{bmatrix} \quad \frac{tj_i}{ti_i} = \begin{bmatrix} 71.429 \\ 2.333 \\ 4.286 \\ 3 \\ 4.056 \\ 5 \\ 10 \end{bmatrix} \quad i = \begin{bmatrix} 2 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \end{bmatrix} \quad \frac{tj_1}{ti_1} = 1$$

$$ti_8 = (1.825 \cdot 10^3) \text{ day}$$

