

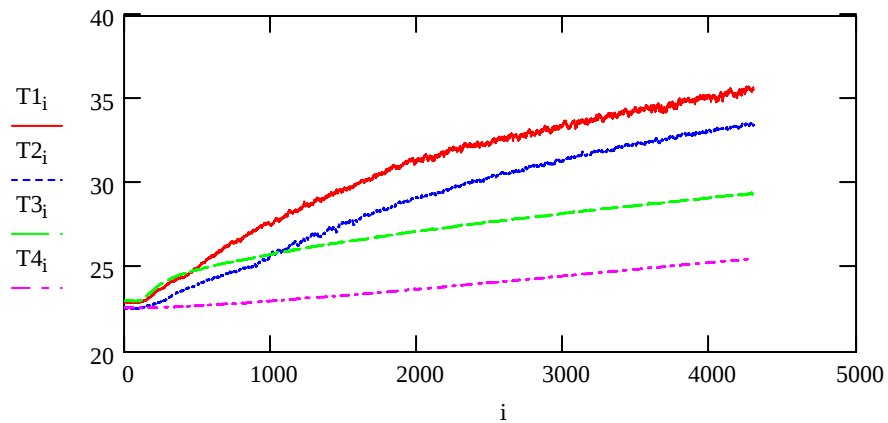
GENE's DATA

$T :=$
data.txt $i := 1..4300$

PARSE INTO T1, T2, T3, and T4 FOR THE FOUR TEMPERATURE SENSORS

$$T1_i := (T^{(0)})_i \quad T2_i := (T^{(1)})_i \quad T3_i := (T^{(2)})_i \quad T4_i := (T^{(3)})_i$$

**A PLOT OF THE TEMPERATURE CURVES SHOW THAT THEY HAD NOT YET REACHED
 EQUILIBRIUM**



PERFORM A SQUARE NORM REGRESSION

GENERATE TIME VECTOR

$$t_i := i$$

SEED FOR EXP CURVE FIT

$$vg := \begin{pmatrix} -3.1 \\ -0.001 \\ 43 \end{pmatrix}$$

FIT THE CURVE TO EXPONENTIAL

USING TIME, TEMP and SEED:

$V=(a,b,c)$ whence fitted curve= $a \exp(bx)+c$

$$v := \text{expfit}(t, T1, vg)$$

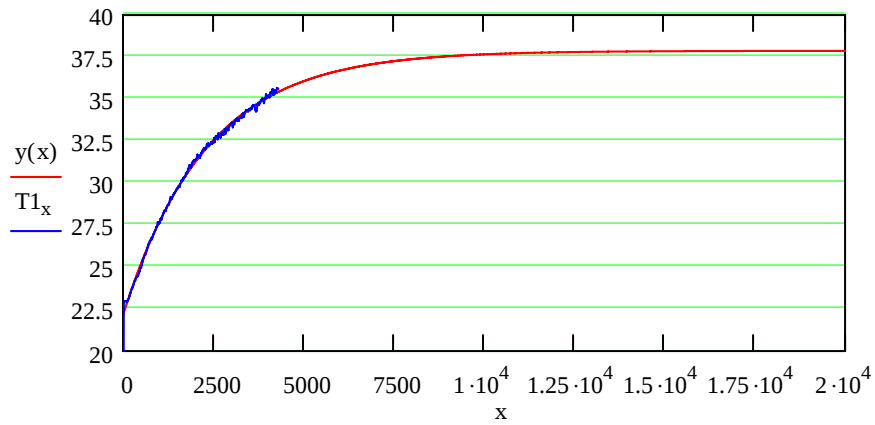
**USE OUTPUT OF EXPFIT TO
 DEFINE REGRESSION CURVE**

$$z_i := v_0 \cdot e^{v_1 \cdot i} + v_2$$

**USE OUTPUT OF EXPFIT TO
DEFINE FUNCTION FOR
EXTRAPOLATION TO t=INFINITE**

$$y(x) := v_0 \cdot e^{v_1 \cdot x} + v_2$$

A PLOT T1 and OF THE ESTIMATED CURVE AFTER TEMPERATURE STABLIZES



**THE MAXIMUM VALUE OF TEMPERATURE SHOULD
BE ABOUT 38 DEGREES C:**

$$y(20000) = 37.864$$