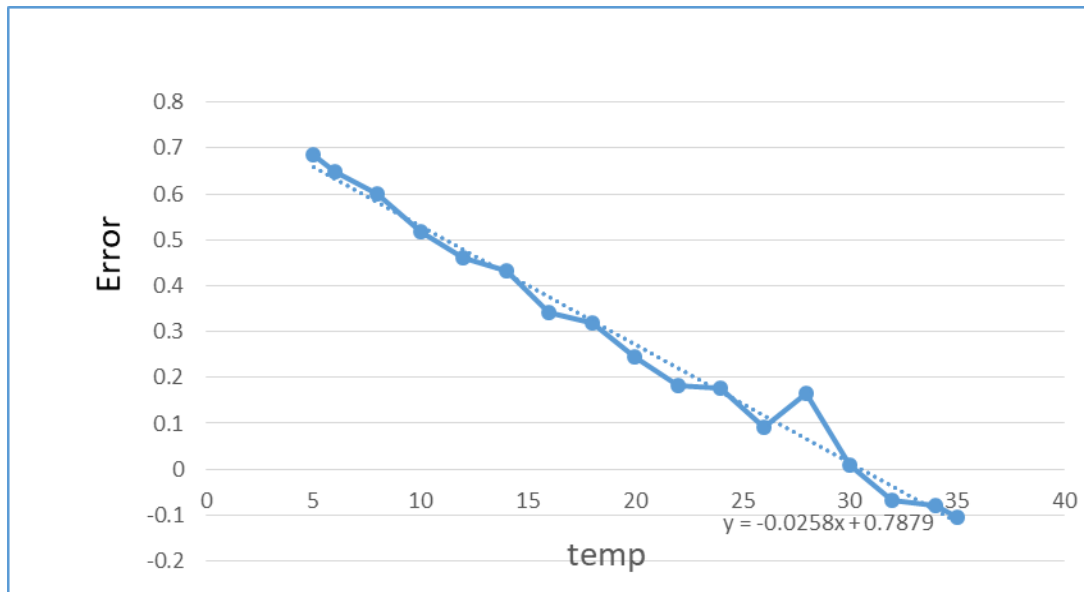


TDS- Offset Calculation

The offset value for individual temperatures has been determined based on the error rate versus temperature graph.

Offset value = $-0.0258 * \text{Raw_temperature} + 0.7879$.



Calculating Temperature:

Temperature = Raw _temperature – Offset value

$$= \text{Raw_temperature} - (-0.0258 * \text{Raw_temperature} + 0.7879)$$

Examples:

Raw_temperature = 1:

$$\text{Temperature} = 1 - (-0.0258 * 1 + 0.7879)$$

$$= 1 - (-0.0258 + 0.7879)$$

$$= 1 - 0.7621$$

$$= 0.2379$$

Raw_temperature = 3.3:

$$\text{Temperature} = 3.3 - (-0.0258 * 3.3 + 0.7879)$$

$$= 3.3 - (-0.08514 + 0.7879)$$

$$= 3.3 - 0.70276$$

$$= 2.59724$$

Raw_temperature = 7.5:

$$\text{Temperature} = 7.5 - (-0.0258 * 7.5 + 0.7879)$$

$$= 7.5 - (-0.1935 + 0.7879)$$

$$= 7.5 - 0.5944$$

$$= 6.9056$$

Raw_temperature = 13.9:

$$\text{Temperature} = 13.9 - (-0.0258 * 13.9 + 0.7879)$$

$$= 13.9 - (-0.35802 + 0.7879)$$

$$= 13.9 - 0.42912$$

$$= 13.47088$$

Raw_temperature = 18:

$$\text{Temperature} = 18 - (-0.0258 * 18 + 0.7879)$$

$$= 18 - (-0.4644 + 0.7879)$$

$$= 18 - 0.3235$$

$$= 17.6765$$

Raw_temperature = 23.5:

$$\text{Temperature} = 23.5 - (-0.0258 * 23.5 + 0.7879)$$

$$= 23.5 - (-0.6063 + 0.7879)$$

$$= 23.5 - 0.1816$$

$$= 23.3184$$

Raw_temperature = 33:

$$\text{Temperature} = 33 - (-0.0258 * 33 + 0.7879)$$

$$= 33 - (-0.8514 + 0.7879)$$

$$= 33 - 0.0635$$

$$= 32.9365$$

Raw_temperature = 40:

$$\text{Temperature} = 40 - (-0.0258 * 40 + 0.7879)$$

$$= 40 - (-1.032 + 0.7879)$$

$$= 40 - (-0.2441)$$