Least Squares approximation for humidity sensor

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1 Introduction

In the table below, *hum* stands for the humidity measured by a gehaka measuring device that is calibrated correctly. This is the reference humidity that we are trying to calibrate on. The variable *cycles* is the amount of cycles measured by our device.

Sample number	Cycles	Humidity
0	3497	11.1
1	3994	11.9
2	4511	13.0
3	4913	14.1
...	...	...
n	2900	10.1

$$y_n(x) = \sum_{k=0}^{n}{}' a_k T_k(x) \tag{1}$$

We will attempt to make a function of the following form, making the *error* term as small as possible

$$a * cycles + b = hum + error \tag{2}$$

The function that yealds the distance between the real and estimated humidities is denoted as follows

$$f(a,b) = [hum_0 - (a * cyclos_0)]^2 + [hum_1 - (a * cyclos_1)]^2 + ... + [hum_n - (a * cyclos_n)]^2 \tag{3}$$

thats cool

$$f(a,b) = [hum_0 - (a * cyclos_0)]^2 + [hum_1 - (a * cyclos_1)]^2 + ... + [hum_n - (a * cyclos_n)]^2$$

To minimize this distance function, we need to set all first partial derivatives to zero:

(4)

$$5 + 6 = 7 \tag{5}$$

2 Conclusion

Mathieu is nen tank

lol swag koe
bobs
$45 + 6 =$
7

$$lol+ = equazeppersmetbobellelzeolnronosfdnsfdndfnndfgndgofjgoisjgiprzgpirpjrepj = 5*okpokpojlnonljnoiuoi \tag{6}$$

yolo swag