Physics 421 / PCSE 503

Lecture 6

Fitting Data

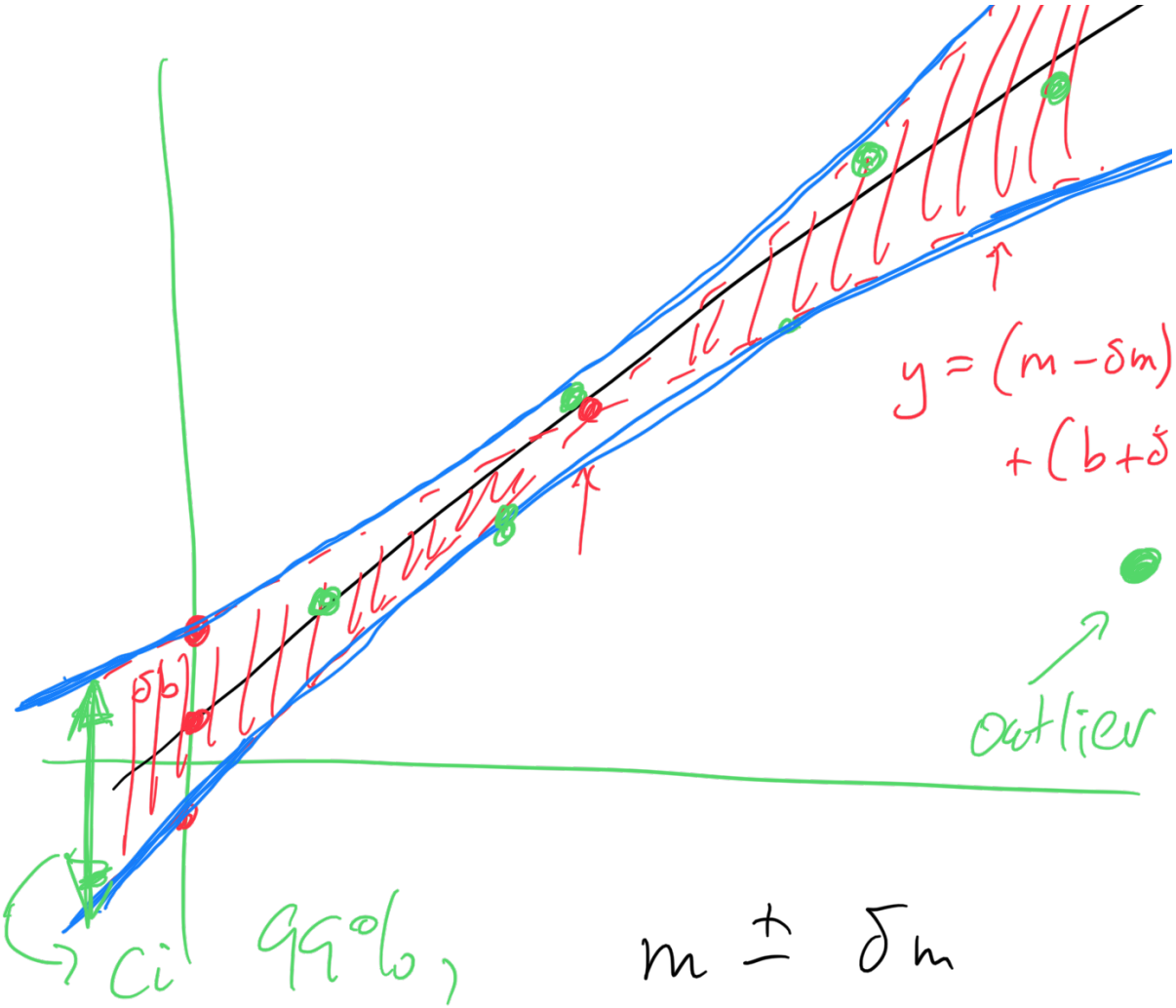
m

$$\text{Alc.} = (0.3019 \pm .439)\,\text{Tob.} + (4.35 \pm 1.607$$

b

Slope is consistent with zero!

$(.302 + .439, .302 - .43$



CI 99%, $m \pm \delta m$

90%, $b \pm \delta b$

$y = mx + b$

① $m \to m - \delta m$ smallest possible

$b \to b + \delta b$ largest possible

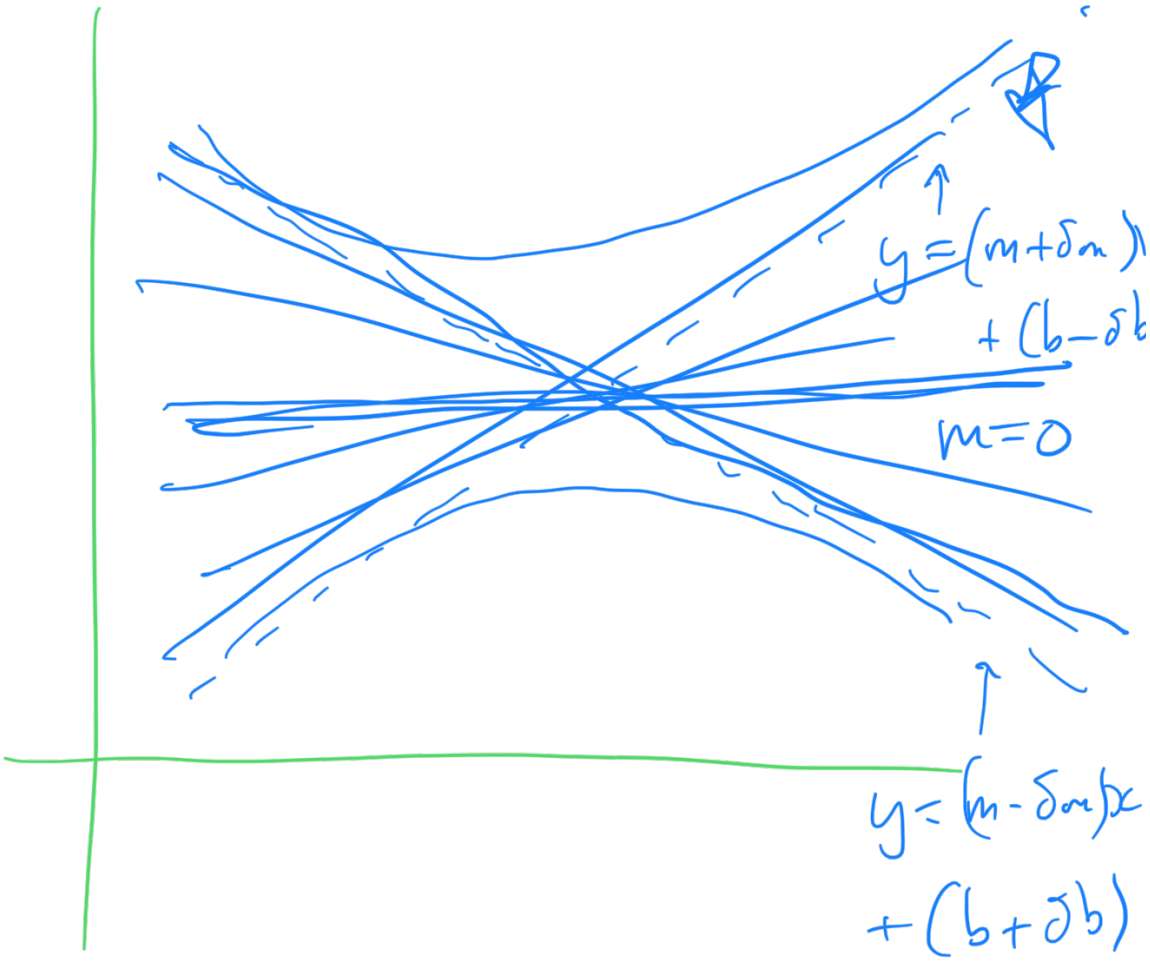
② $m \to m + \delta m$

$b \to b - \delta b$

Seaborn → regplot

(X, Y, df, ci)

Dataframe.



$y_{int} = 2.0412 \pm 1.001$

$m = 1.006 \pm .281$

not consistent with zero !!

95% → 1 data pt. in 20

resplot → Problem

do not have access to the equations of the blue band :(

Curve_fit

→ linear regression

→ non-linear regression.

any fuction ! 

paramlist [0] → y-int

[1] → m

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non-linear fitting →

MUST: choose starting values for the fit parameters !

paramlist [0] = 0

paramlist [1] = 0

popt → array of fit (optimized) parameters

popt [0] = y-int

popt [1] = m

pcov → covariance matrix