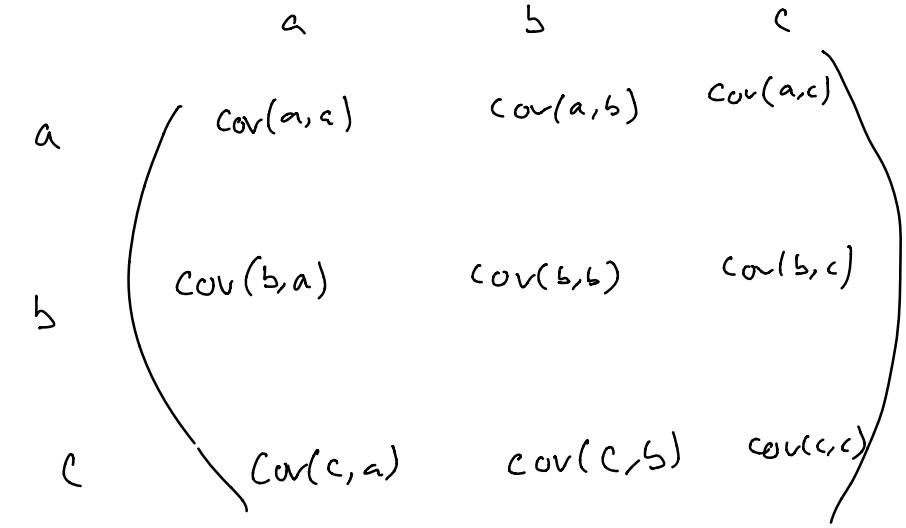
What is pcov?

The covariance matrix

$$cov(a,b) = \overline{ab} - \bar{a}\,\bar{b}$$

Fit parameters a, b, c

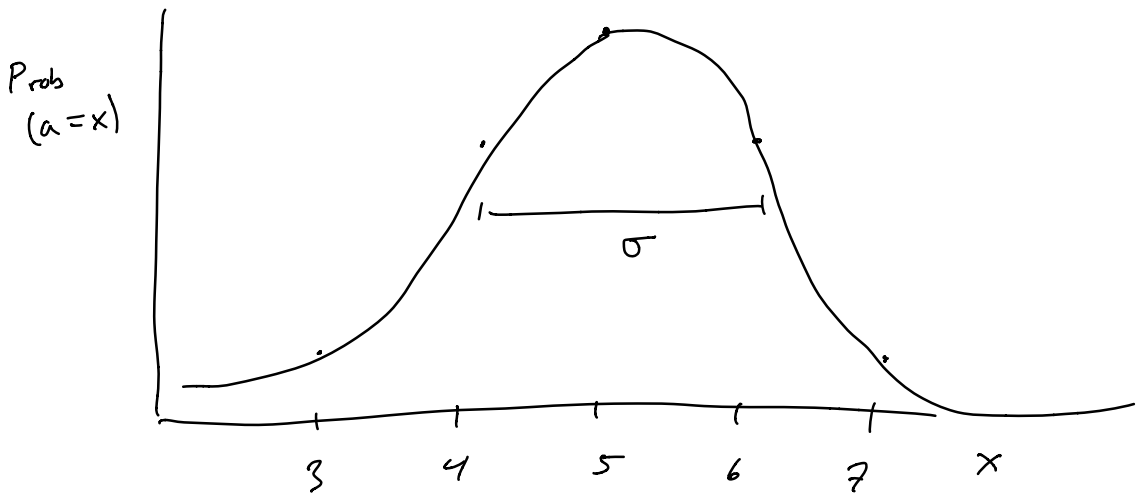


$$Cov(a,a) = \overline{a \cdot a} - \bar{a} \cdot \bar{a} = \sigma^2$$

the variance

Variance is related to the uncertainty on the estimates of our fit parameters

$$y = ax + b$$



~ 68% chance that true value of a is in between $(a - \sigma, a + \sigma)$

Bottom line: σ is the "uncertainty"