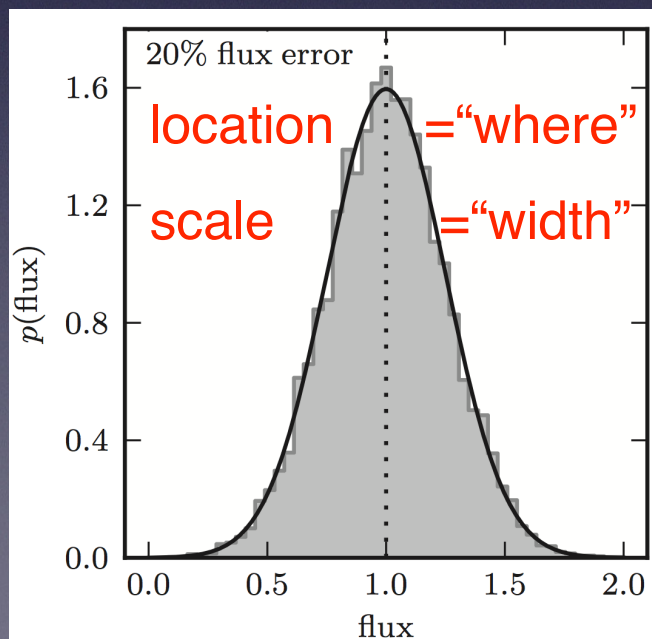


# • How to estimate location and scale?

- A significant fraction of statistics is about using a list of numbers,  $x_i$ ,  $i=1 \dots N$ , drawn from some unknown distribution function,  $h(x)$ , to estimate the properties of  $h(x)$ . Here  $h(x)$  is a probability density function (pdf)
- In general, this one-dimensional case can be generalized to many dimensions, but here we'll keep it simple.
- First, let's see how we can quantify “the properties of  $h(x)$ ”



This is an example of a Gaussian distribution: its location is 1.0 and its scale is 0.2

**Task:** given a sample  $x_i$ ,  $i=1 \dots N$ , find the location and scale of the underlying (here Gaussian) distribution