• Robust statistics

The Cauchy (Lorentzian) distribution:

$$p(x|\mu,\gamma) = \frac{1}{\pi\gamma}\left(\frac{\gamma^2}{\gamma^2+(x-\mu)^2}\right)$$

Task: given measurements x_i, i=1…N, drawn from the Cauchy distribution, find the best estimate of μ, let's call it μ^0,and its uncertainty, σ_μ

In this case, using the mean value is a very bad idea!

Use the median instead!