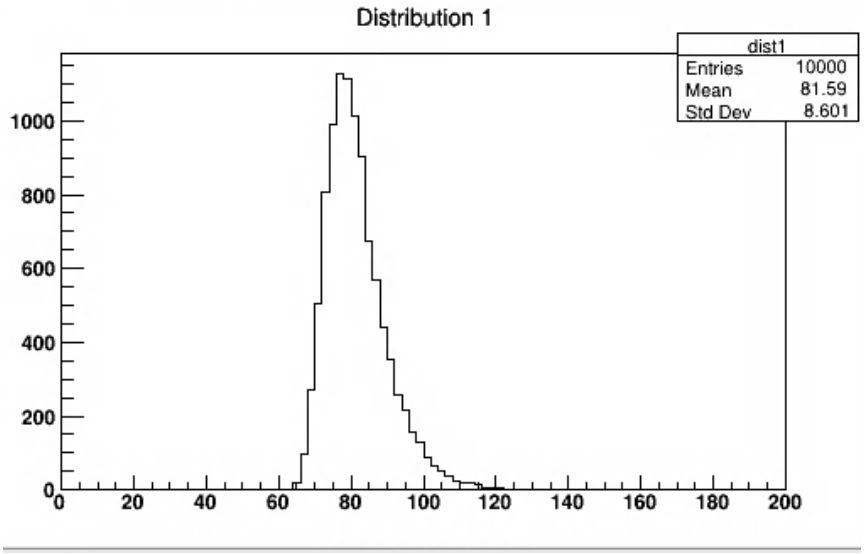
MINUIT1 : Sorawich Maichum – sm9cq



The exercise is to fit this histogram from the file “distros.root”.

To do: 1. Fit with the “The sum of 2 Gaussians”

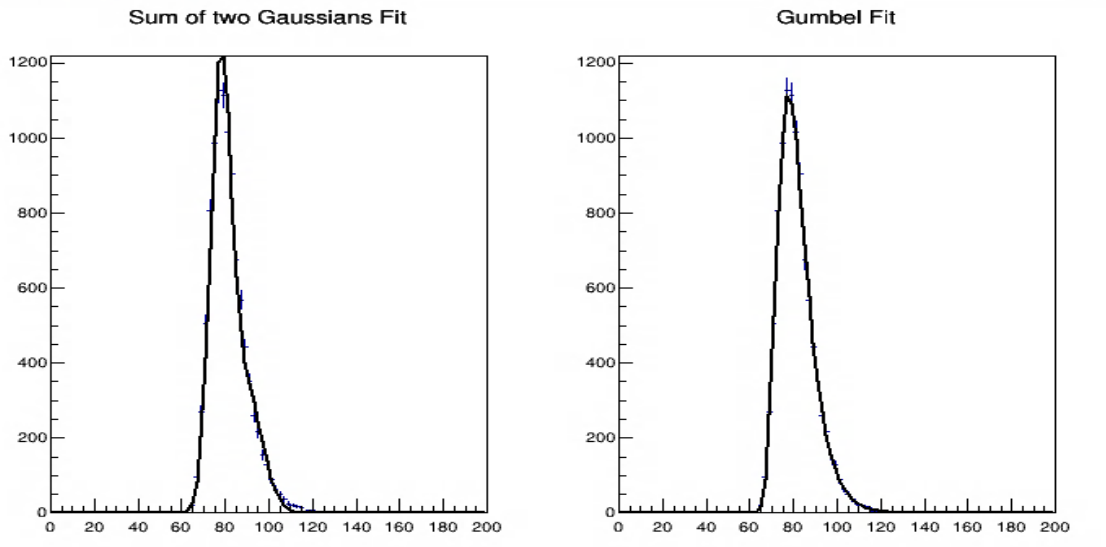
$$F(x) = Ae^{\frac{(x-a)^2}{2b^2}} + Be^{\frac{(x-c)^2}{2d^2}}$$

2. A Gumbel distribution

$$f(x|a,b) = abe^{-(be^{-ax}+ax)}$$

for

$$-\infty < x < \infty.$$



This canvas shows the result of function fitting with those histograms and the relevant parameters are reported below.

EXT NO.	PARAMETER NAME	VALUE	PARABOLIC ERROR	MINOS ERRORS NEGATIVE	MINOS ERRORS POSITIVE
1	Amp 1	1.09600e+03	2.34158e+01	-2.36744e+01	2.32006e+01
2	mean 1	7.76822e+01	1.41820e-01	-1.38687e-01	1.38349e-01
3	standard deviation 1	4.61912e+00	7.07998e-02	-7.09856e-02	6.97250e-02
4	Amp 2	3.47597e+02	1.93723e+01	-1.82977e+01	1.87687e+01
5	mean 2	8.84191e+01	4.08485e-01	-4.01328e-01	4.16010e-01
6	standard deviation 2	7.79925e+00	1.63605e-01		

Chi2 : 293.009 PValue Gaus Fit: 2.65574e-22

These are the reported parameters for sum of 2 Gaussians method.

EXT NO.	PARAMETER NAME	VALUE	PARABOLIC ERROR	MINOS ERRORS NEGATIVE	MINOS ERRORS POSITIVE
1	b	6.29584e+00	1.94898e-01	-5.51301e-02	5.55213e-02
2	a	9.24662e-01	4.56531e-02	-6.02302e-03	6.13810e-03
3	mean	7.76274e+01	1.09851e-01	-6.98030e-02	7.03777e-02
4	Amp	1.76992e+04	1.32970e+03		

chi2 : 45.5648 PValue Gumbel Fit: 0.999997

These are the values of parameters which use the Gumbel distribution.