

Statistical Methods of Data Analysis

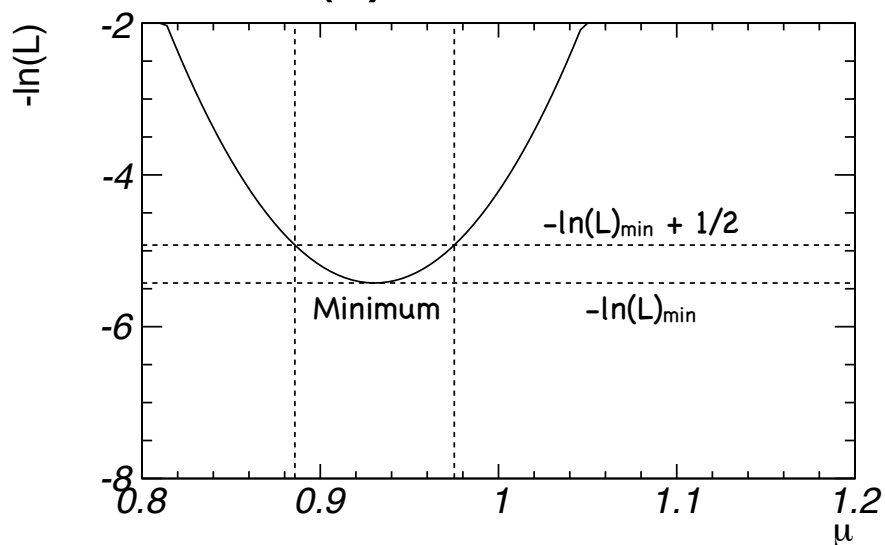
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ML Error Estimate



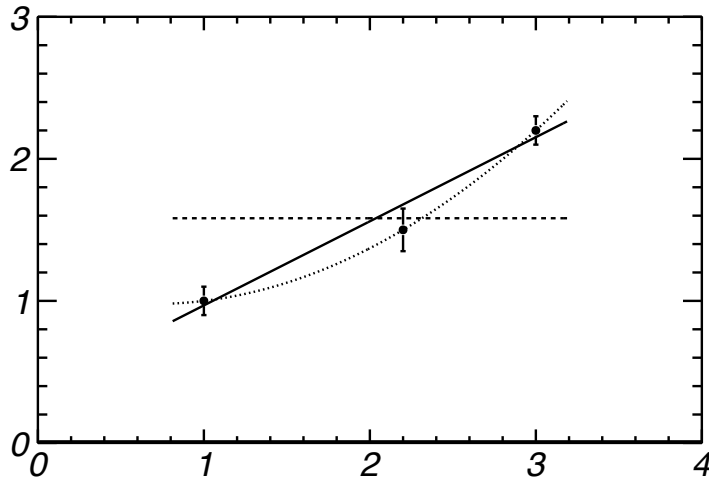
$-\ln(L)$ for Gaussian



LS Straight Line Fit



Straight Line Fit



LS vs. ML Fitting



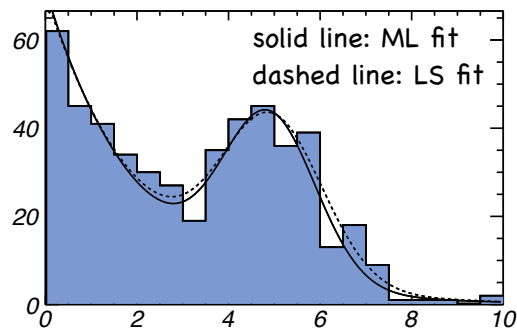
Histogram

$$f(x; p_i) = p_0 \left(\exp \left[-\frac{(x - p_1)^2}{2p_2^2} \right] + p_3 \exp [p_4 x] \right)$$

LS Fit:
 FCN=18.5469 FROM MINOS STATUS=SUCCESSFUL 147 (EDM=5.93006e-09 STRATEGY= 1

EXT PARAMETER NO.	NAME	VALUE	ERROR	STEP SIZE
1	p0	3.73354e+01	3.92149e+00	2.5114e-01
2	p1	4.88997e+00	1.06508e-01	-1.5047e-01
3	p2	1.01214e+00	1.07970e-01	2.1895e-01
4	p3	1.91628e+00	2.55594e-01	1.7398e-01
5	p4	-4.83589e-01	5.57031e-02	5.5703e-02

Integral: 482.987



ML Fit:
 FCN=-1267.76 FROM MINOS STATUS=SUCCESSFUL 145 CALLS 820 TOTAL EDM=6.23698e-09 STRATEGY= 1 ERROR MATRIX ACCURATE

EXT PARAMETER NO.	NAME	VALUE	ERROR	STEP SIZE	FIRST DERIVATIVE
1	p0	3.64963e+01	3.83926e+00	6.76114e-03	-2.95562e-05
2	p1	4.95523e+00	1.18164e-01	-3.69696e-04	-2.05861e-03
3	p2	1.10054e+00	1.08824e-01	4.71273e-04	-1.21133e-03
4	p3	1.93100e+00	2.51471e-01	4.08293e-04	-9.15588e-04
5	p4	-4.66462e-01	5.49388e-02	5.49388e-02	-2.94658e-04

ERR DEF= 0.5

Integral: 500.677