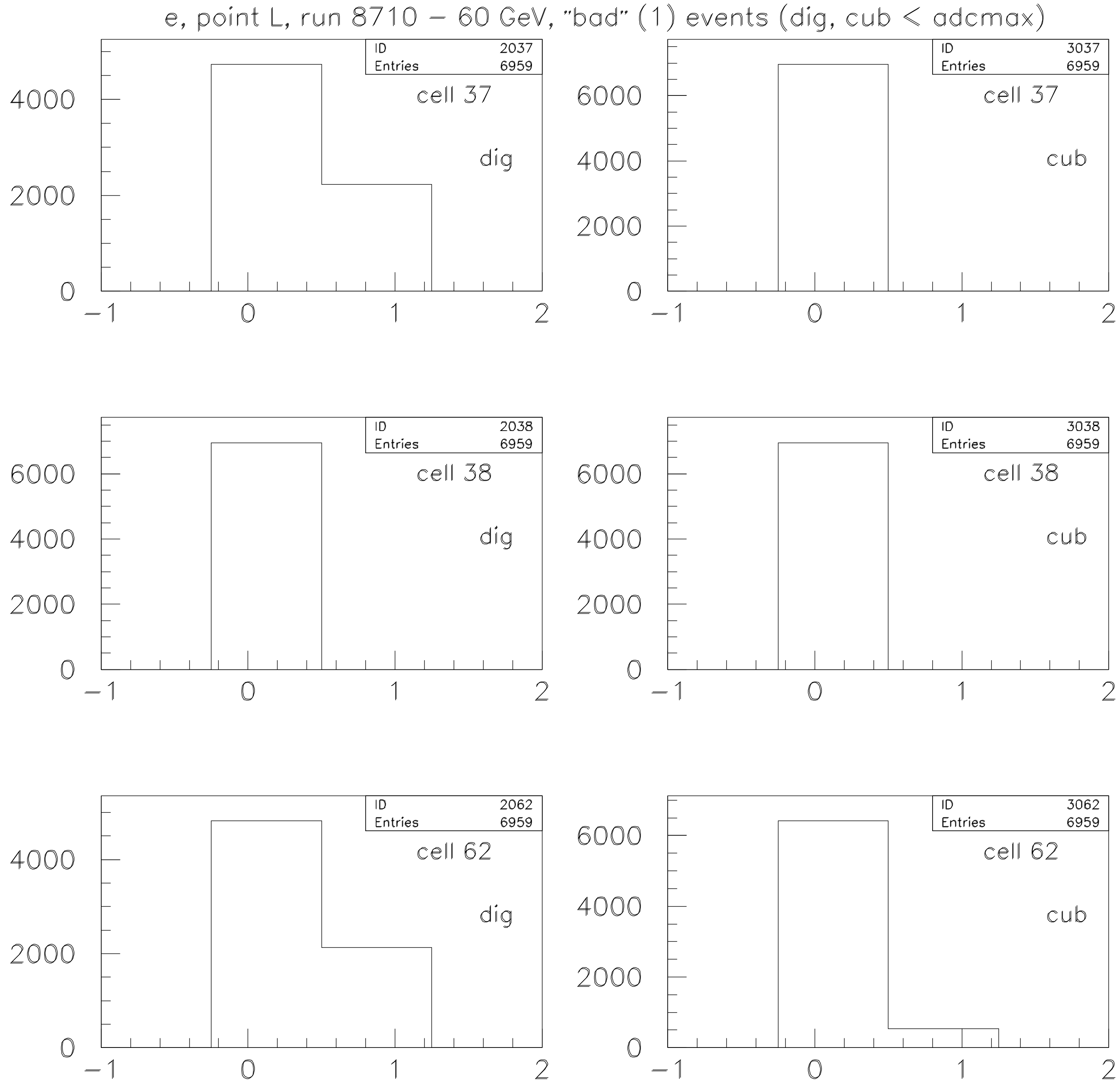
Electron Results:August 99 Beam Test

N.Javadov

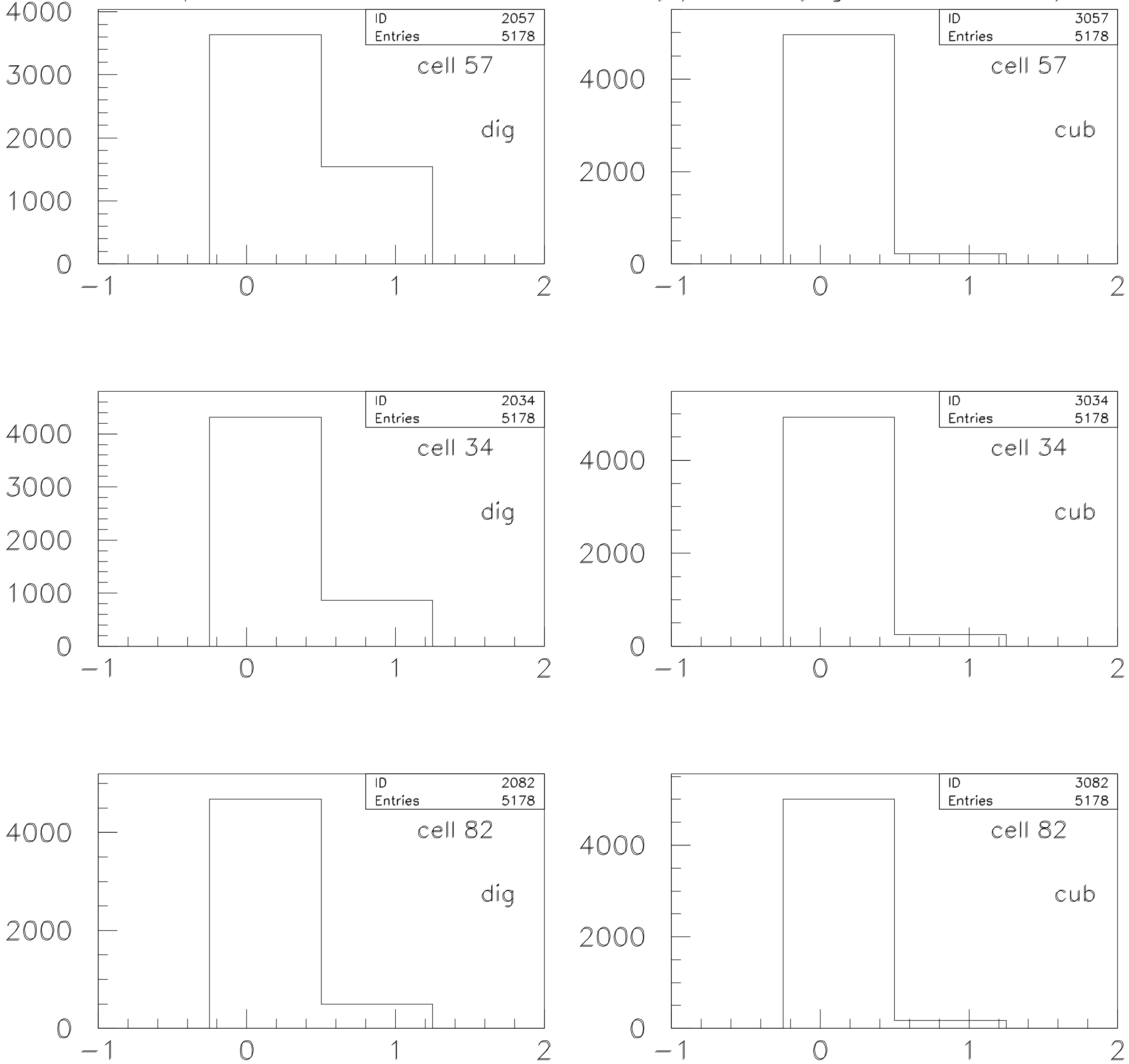
Joint Institute for Nuclear Research, Dubna
Institute of Physics, Baku

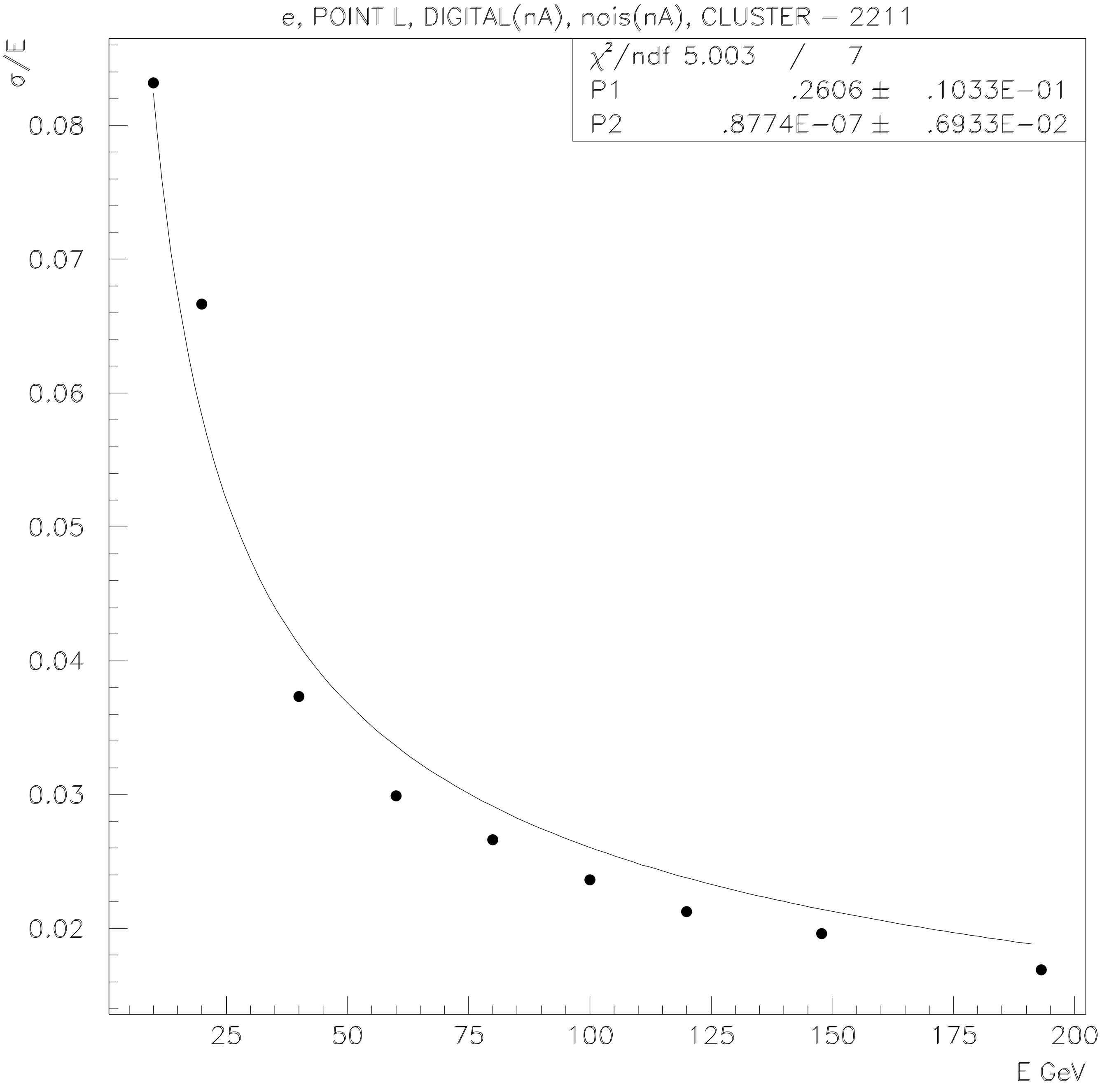
Electron Test Beam Analysis for points **L** and **M**

1. Note about Digital and Cubical data fit
2. Cluster Search
3. Rezults

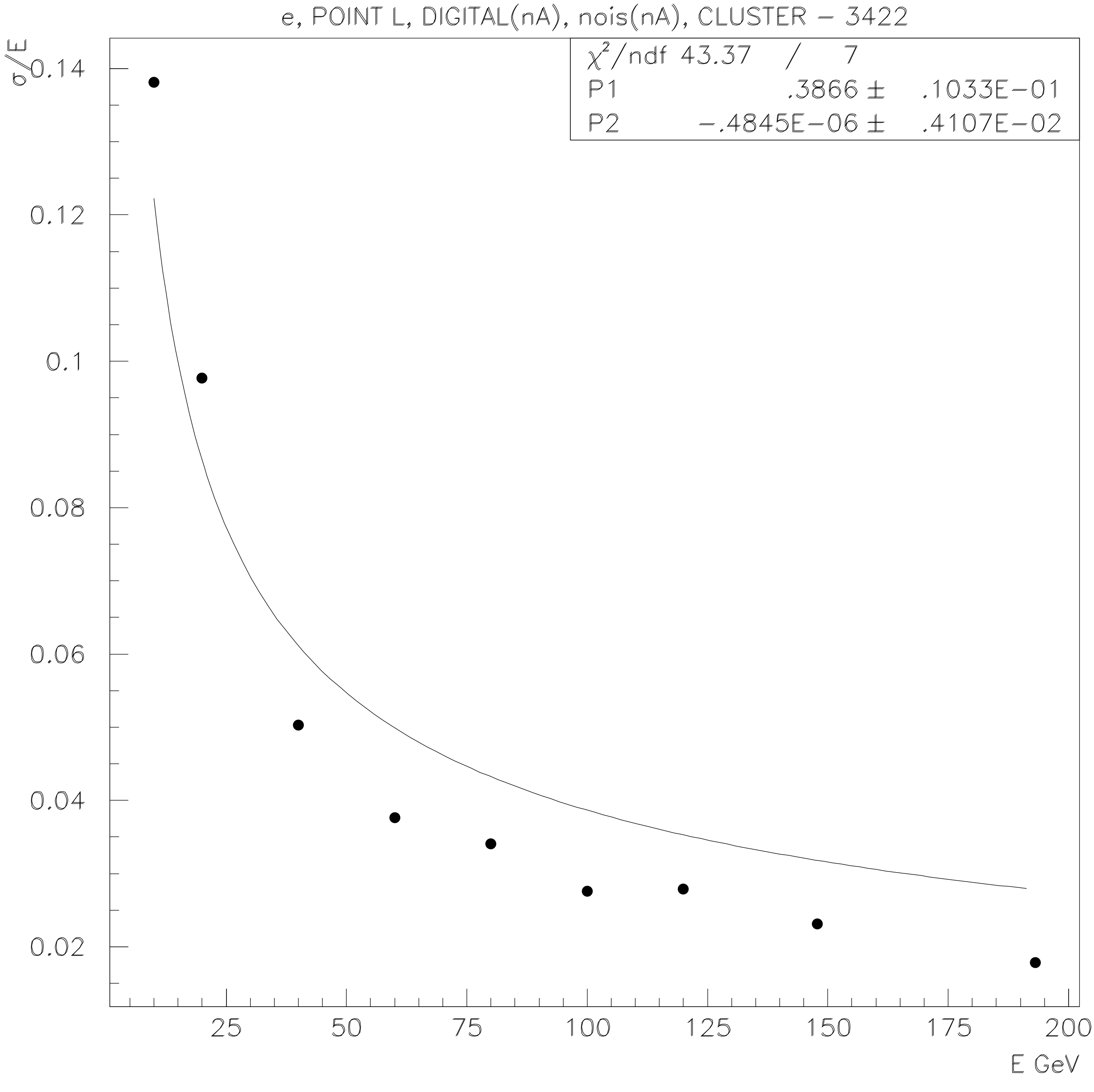

e, point L, run 8710 – 60 GeV, "bad" (1) events (dig, cub < adcmax)
ID 2037
Entries 6959
cell 37
dig
ID 3037
Entries 6959
cell 37
cub
ID 2038
Entries 6959
cell 38
dig
ID 3038
Entries 6959
cell 38
cub
ID 2062
Entries 6959
cell 62
dig
ID 3062
Entries 6959
cell 62
cub

e, point M, run 8629 – 120 GeV, "bad" (1) events (dig, cub < adcmax)

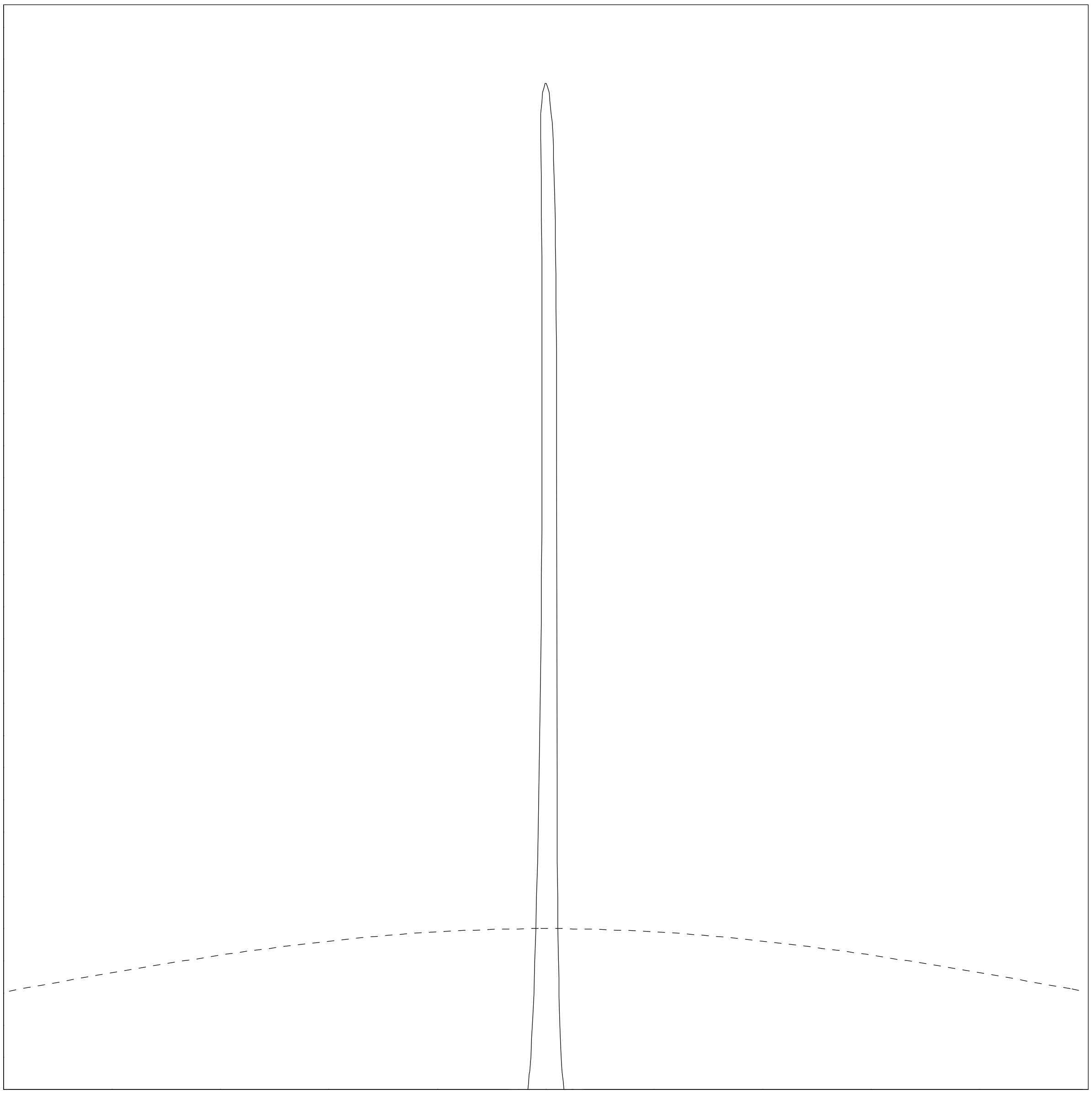




e, POINT L, DIGITAL(nA), nois(nA), CLUSTER - 2211
χ²/ndf 5.003 / 7
P1 .2606 ± .1033E-01
P2 .8774E-07 ± .6933E-02
σ/E
0.08
0.07
0.06
0.05
0.04
0.03
0.02
25
50
75
100
125
150
175
200
E GeV


e, POINT L, DIGITAL(nA), nois(nA), CLUSTER - 3422
χ^2/ndf 43.37 / 7
P1 .3866 ± .1033E-01
P2 -.4845E-06 ± .4107E-02
σ/E
0.14
0.12
0.1
0.08
0.06
0.04
0.02
25
50
75
100
125
150
175
200
E GeV

	LSEG1			LSEG2			LSEG3			LSEG4		
1	*	*	*	*	*	*	*	*	*	*	*	*
	*	*	*	*	*	*	*	*	*	*	*	*
	*	*	*	*	*	*	*	*	*	*	*	*
				*	*	*	*	*	*	*	*	*
2	*	*	*	*	X	*	*	*	*	*	*	*
	*	X	*	*	X	*	*	X	*	*	X	*
	*	*	*	*	*	*	*	X	*	*	X	*
				*	*	*	*	*	*	*	*	*
3	*	X	*	*	X	*	*	X	*	*	X	*
	*	X	*	*	X	*	X	X	X	X	X	X
	*	*	*	*	X	*	X	X	X	X	X	X
				*	*	*	*	X	*	*	X	*
4	*	X	*	*	X	*	X	X	X	X	X	X
	X	X	X	X	X	X	X	X	X	X	X	X
	*	X	*	X	X	X	X	X	X	X	X	X
				*	X	*	X	X	X	X	X	X
5	X	X	X	X	X	X						
	X	X	X	X	X	X						
	X	X	X	X	X	X						
				X	X	X						



1. Use histogram's data (hist.)

(mean, rms, maxval)

2. Use histogram Gause fitting data (fit.)

(mean, sigma, constant)

Cluster search use:

1 var.

$$\frac{mean}{\sigma}$$

2 var.

$$\frac{mean * maxvalue}{\sigma}$$

3 var.

$$\frac{1}{\sigma}$$

ELECTRONS, e, DIGITAL

Point L

GeV	run	hist. var. 1	hist. var 2	hist. var. 3	fit. var 1	fit. var. 2	fit. var 3
10	9018	2111	2111	2111	2111	2111	2111
20	8980	2111	2111	2111	2111	2111	2111
40	8731	3211	2211	2211	2211	2211	2211
60	8710	4211	2211	2211	2211	2211	2211
80	8695	2211	2211	2211	2211	2211	2211
100	8649	4211	2211	2211	2211	2211	2211
120	8667	4211	2211	2211	2211	2211	2211
148	8609	4211	2211	2211	2211	2211	2211
193	9168	3211	2211	3211	3211	2211	2211

Point M

GeV	run	hist. var. 1	hist. var 2	hist. var. 3	fit. var 1	fit. var. 2	fit. var 3
10	9014	2111	2111	2111	2111	2111	2111
20	9034	3111	2111	2111	2111	2111	2111
40	8722	3211	2211	2211	2211	2211	2211
60	8711	3211	3211	3211	2211	2211	2211
80	8693	2211	2211	2211	2211	2211	2211
120	8629	3212	2211	3212	2211	2211	2211
148	8611	4211	2211	3211	2211	2211	2211
193	9172	3211	2211	2212	2211	2211	2211

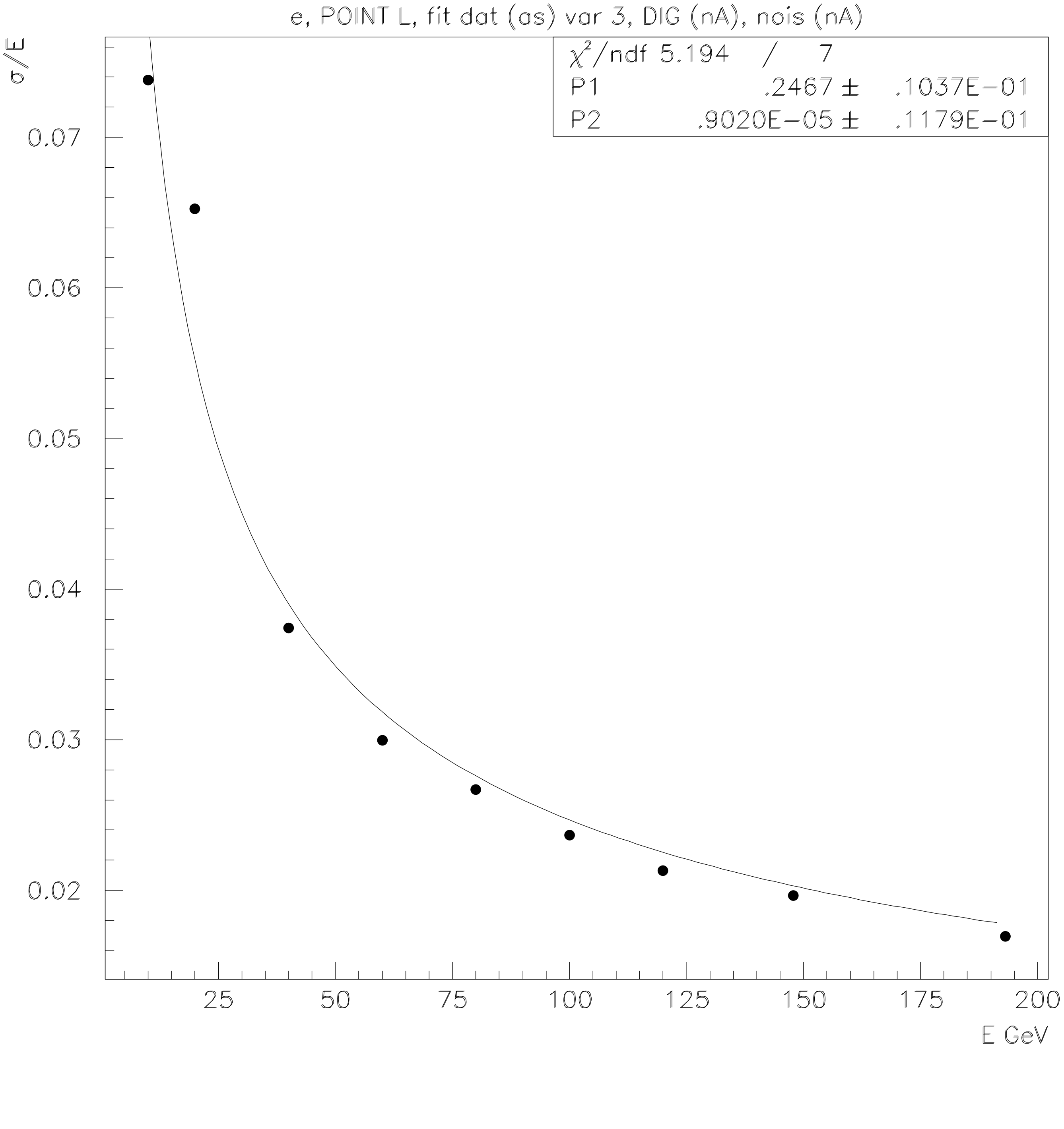
ELECTRONS, e, CUBICAL

Point L

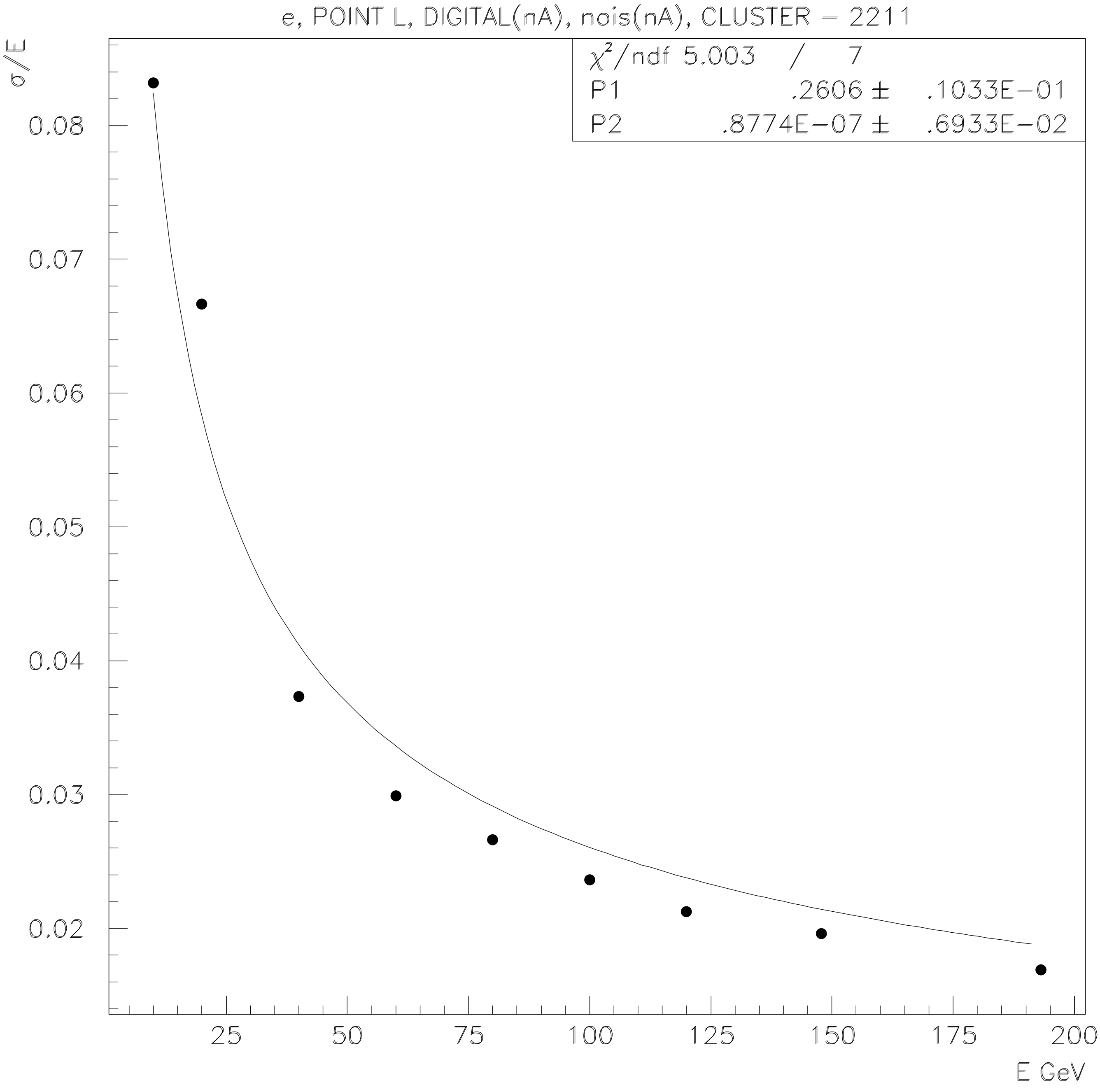
GeV	run	hist. var. 1	hist. var 2	hist. var. 3	fit. var 1	fit. var. 2	fit. var 3
10	9018	2111	2111	2111	2111	2111	2111
20	8980	2111	2111	2111	2111	2111	2111
40	8731	2211	2211	2211	2211	2211	2211
60	8710	2211	2211	2211	2211	2211	2211
80	8695	2211	2211	2211	2211	2211	2211
100	8649	5211	2211	3211	2211	2211	2211
120	8667	3211	3211	3211	2211	2211	2211
148	8609	4211	3211	3211	3211	2211	2211
193	9168	3211	2211	2211	2211	2211	2211

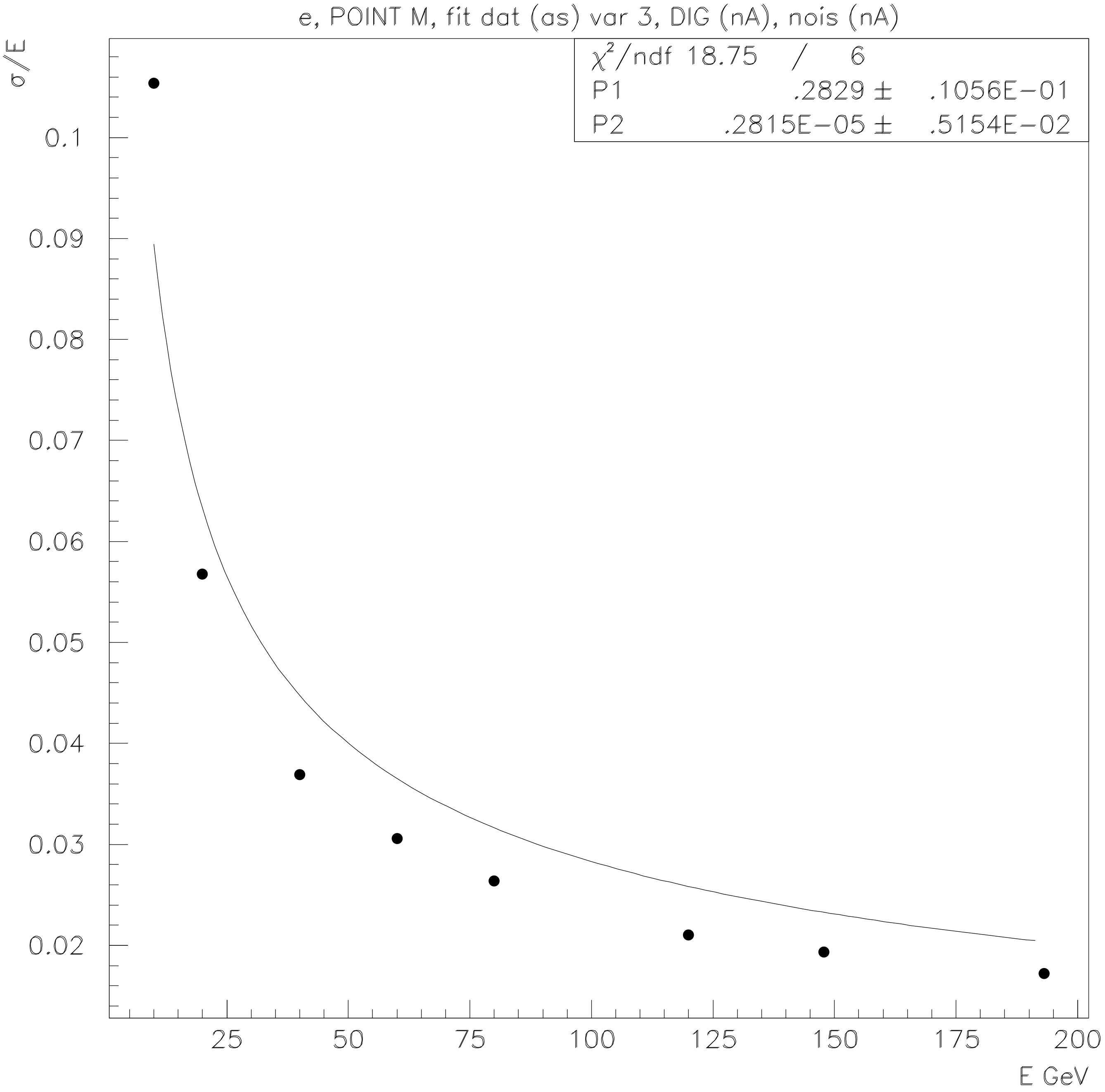
Point M

GeV	run	hist. var. 1	hist. var 2	hist. var. 3	fit. var 1	fit. var. 2	fit. var 3
10	9014	2111	2111	2111	2111	2111	2111
20	9034	2111	2111	2111	2111	2111	2111
40	8722	2211	2211	2211	2211	2211	2211
60	8711	3211	2211	2211	2211	2211	2211
80	8693	3211	3211	2211	2211	2211	2211
120	8629	4212	2211	3311	3211	2211	2211
148	8611	4211	3211	4211	2211	2211	2211
193	9172	4312	2211	2211	3211	2211	2211

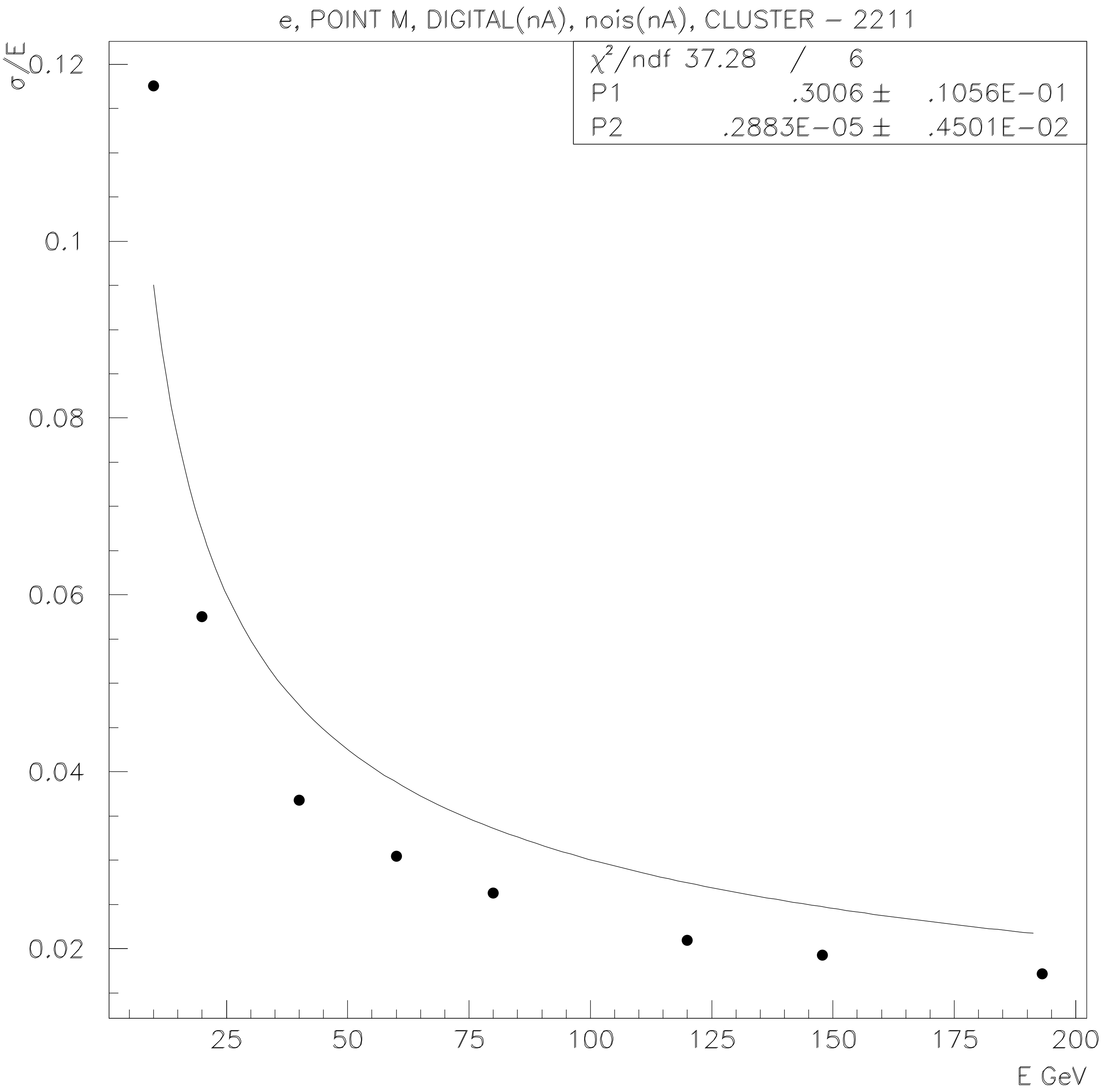


e, POINT L, fit dat (as) var 3, DIG (nA), nois (nA)
χ^2/ndf 5.194 / 7
P1 .2467 ± .1037E-01
P2 .9020E-05 ± .1179E-01
σ/E
0.07
0.06
0.05
0.04
0.03
0.02
25
50
75
100
125
150
175
200
E GeV

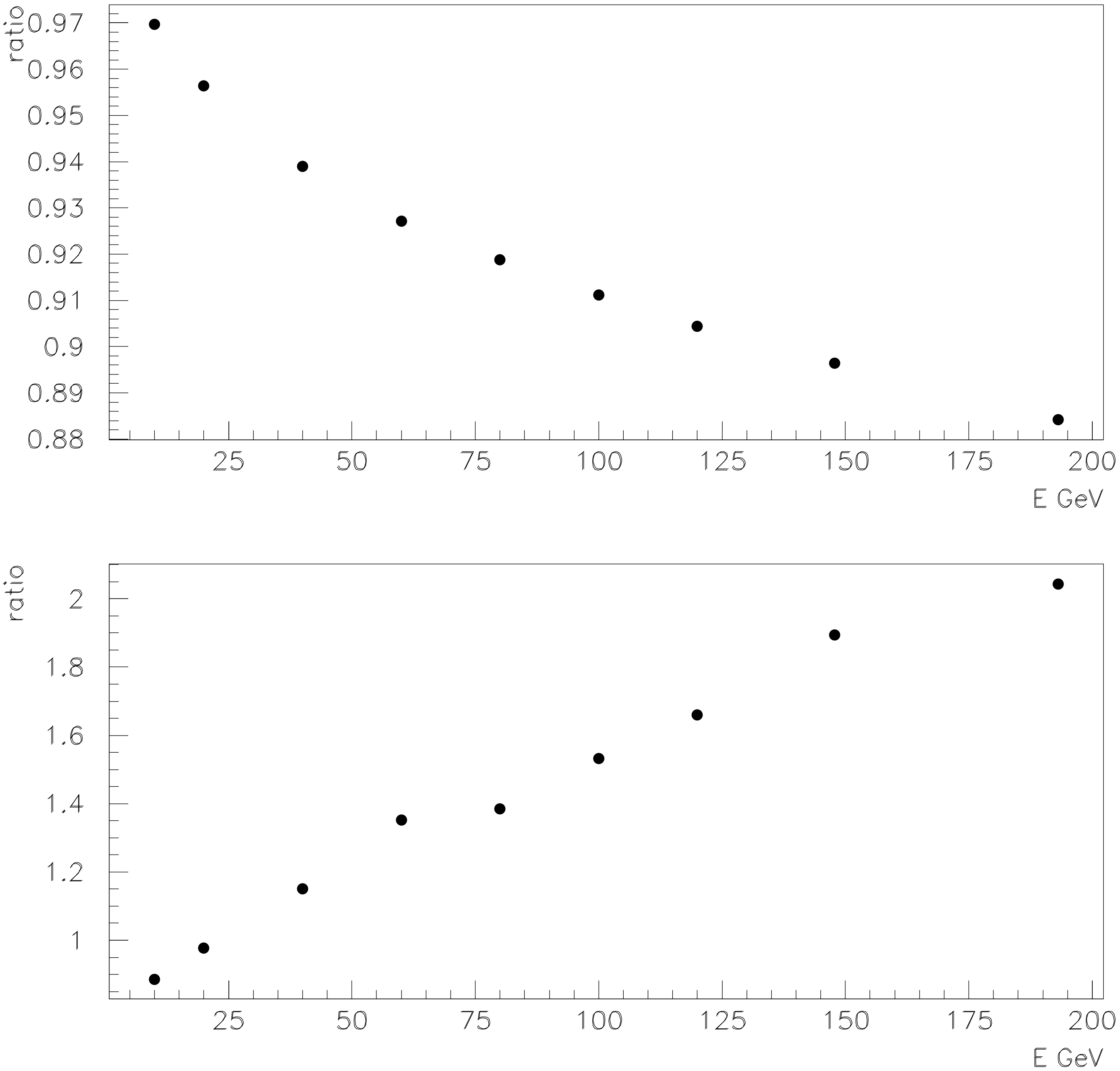

e, POINT L, DIGITAL(nA), nois(nA), CLUSTER - 2211
σ/E
χ²/ndf 5.003 / 7
P1 .2606 ± .1033E-01
P2 .8774E-07 ± .6933E-02
0.08
0.07
0.06
0.05
0.04
0.03
0.02
25
50
75
100
125
150
175
200
E GeV



e, POINT M, fit dat (as) var 3, DIG (nA), nois (nA)
σ/E
χ²/ndf 18.75 / 6
P1 .2829 ± .1056E-01
P2 .2815E-05 ± .5154E-02
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
25
50
75
100
125
150
175
200
E GeV


e, POINT M, DIGITAL(nA), nois(nA), CLUSTER - 2211
σ/E
χ²/ndf 37.28 / 6
P1 .3006 ± .1056E-01
P2 .2883E-05 ± .4501E-02
0.12
0.1
0.08
0.06
0.04
0.02
25
50
75
100
125
150
175
200
E GeV

ratios of mean and rms values for clusters 2111 and 2211 (point L – e)



ratios of mean and rms values for clusters 2111 and 2211 (point M – e)