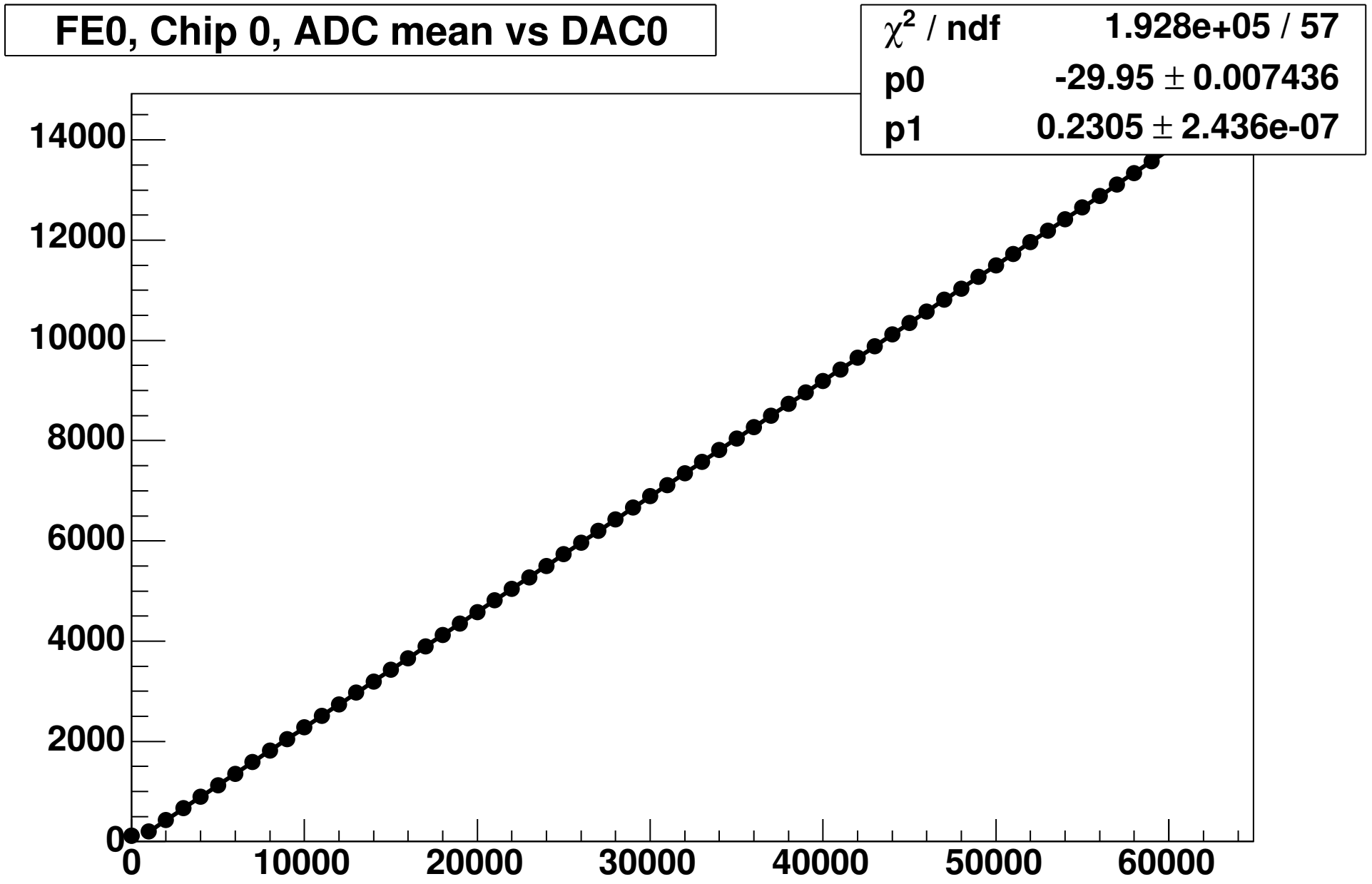
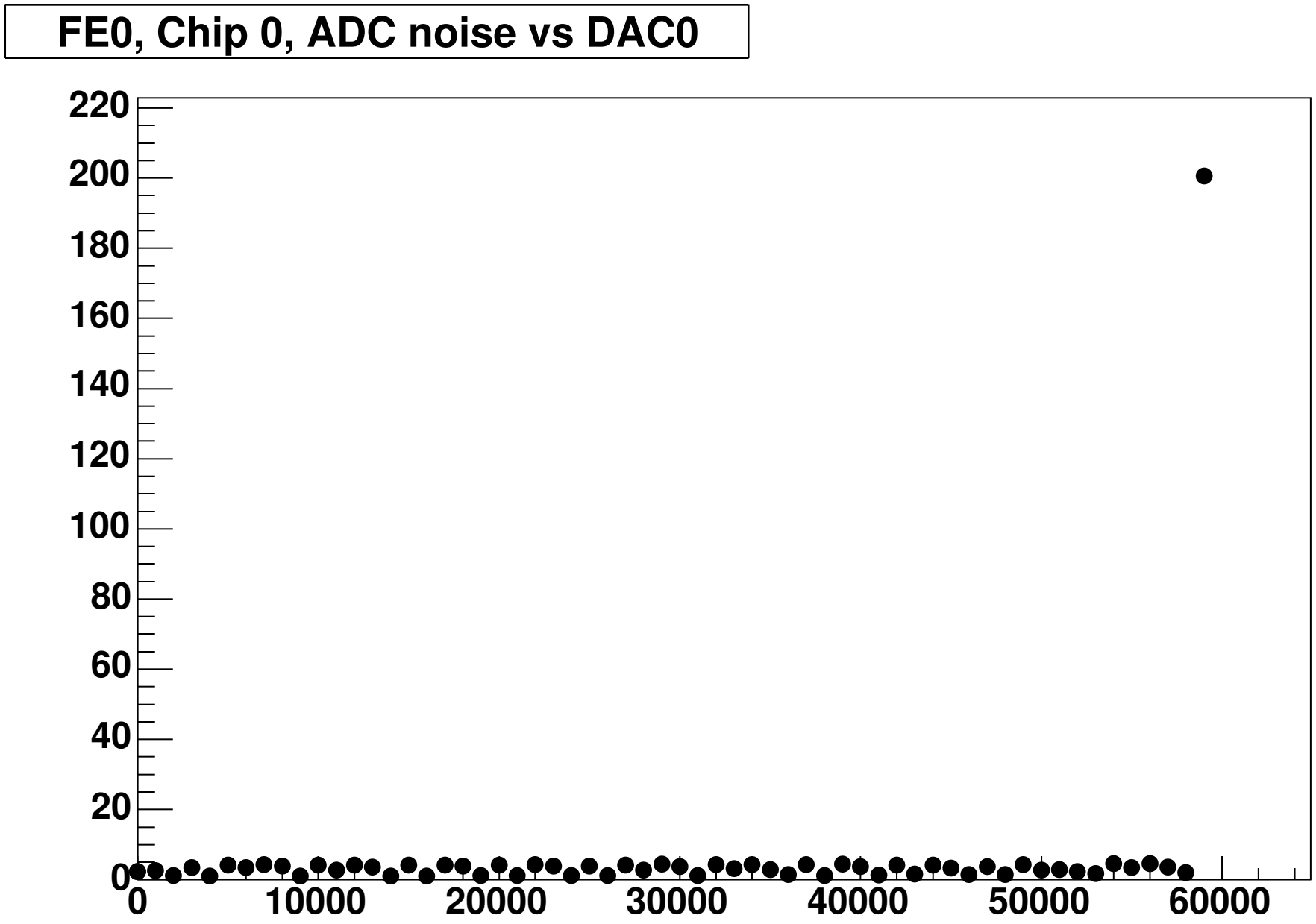
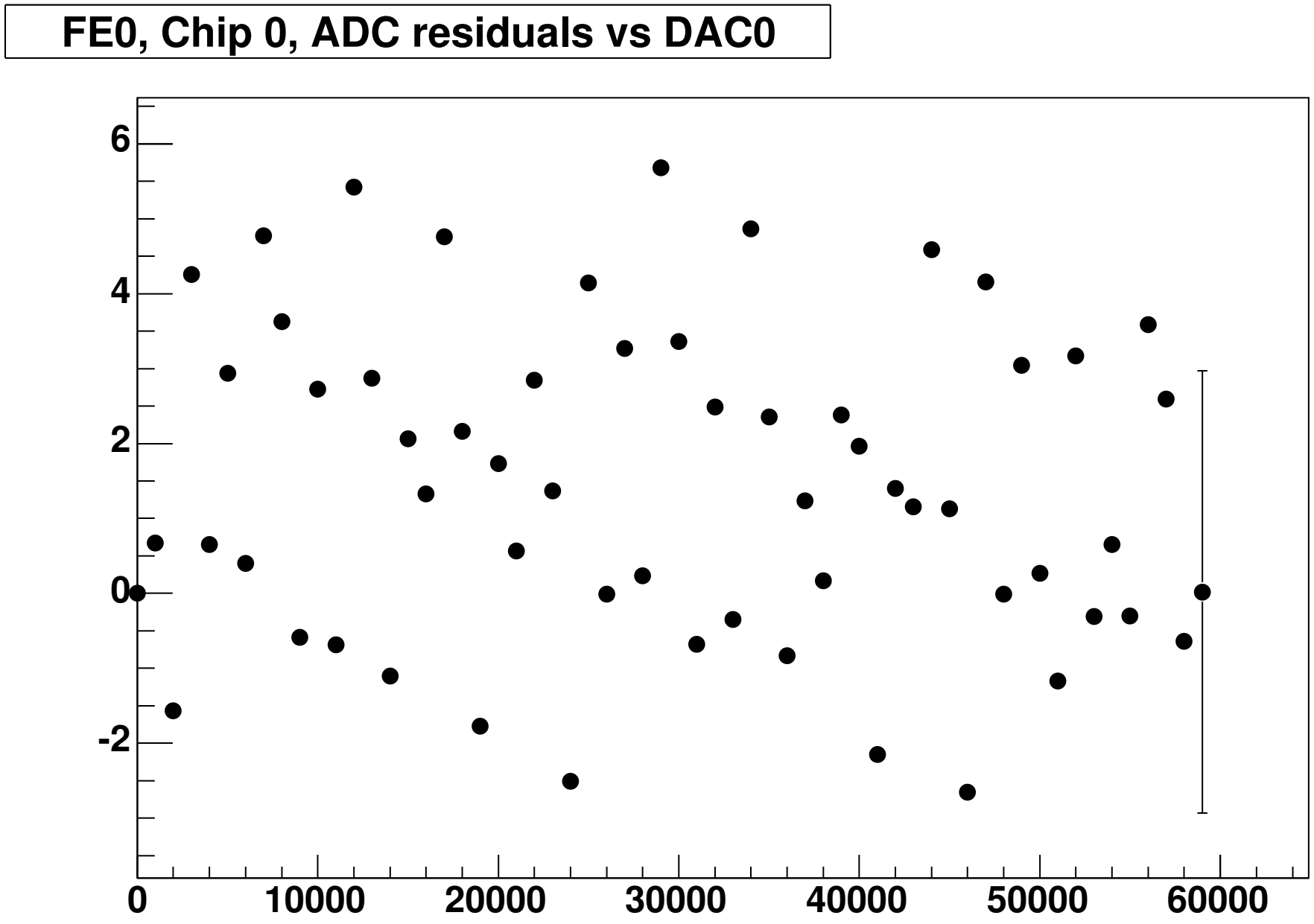
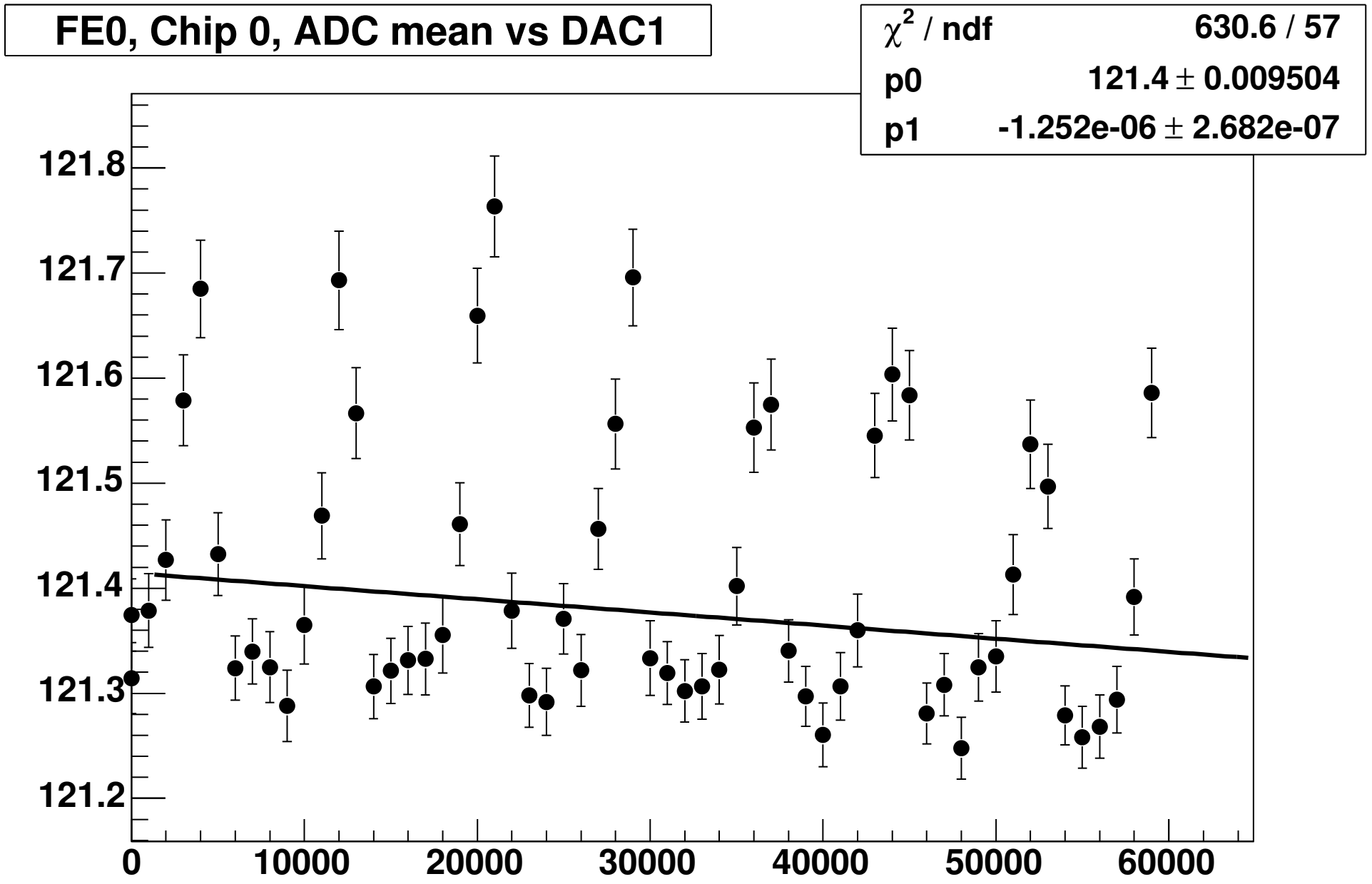
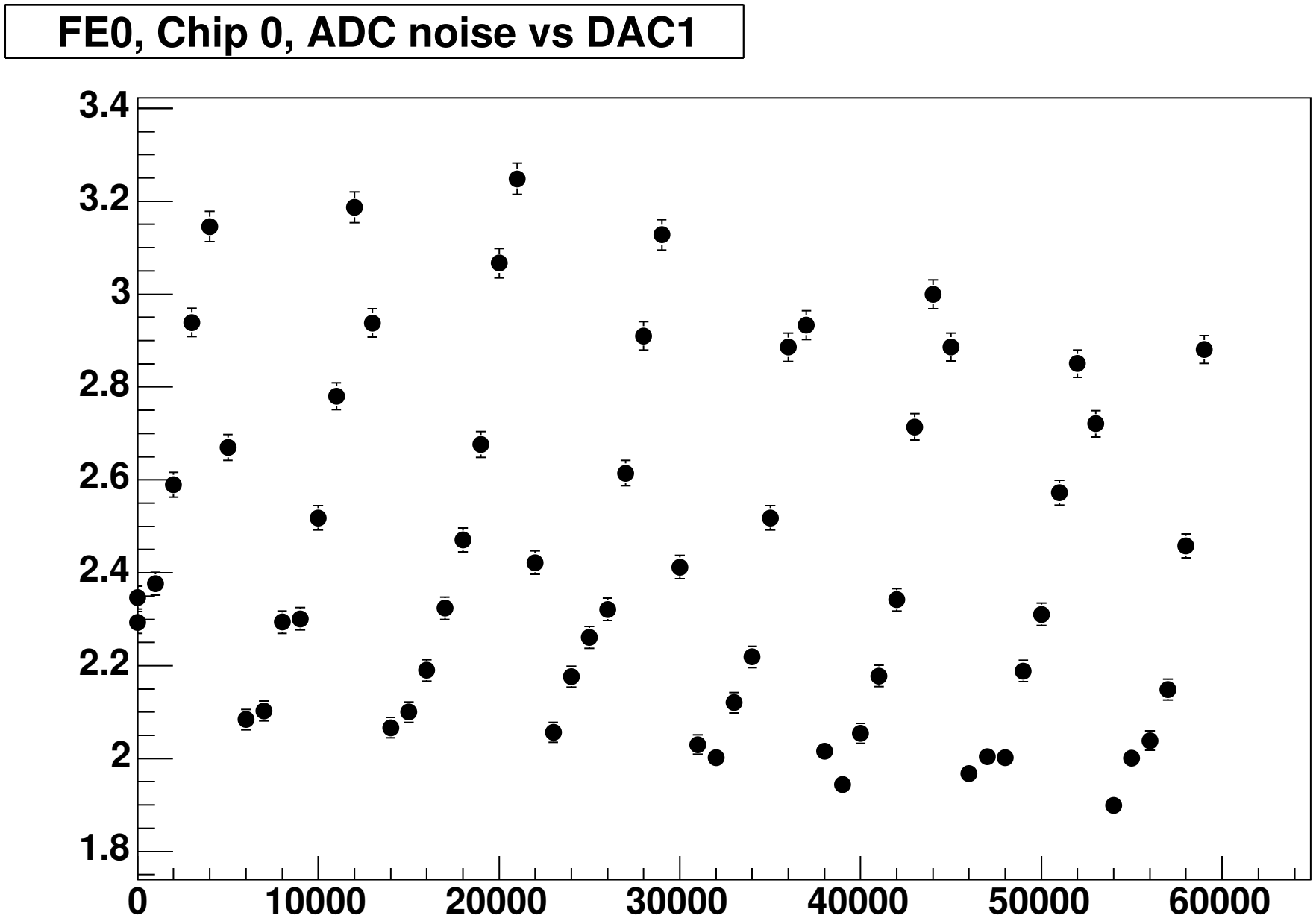
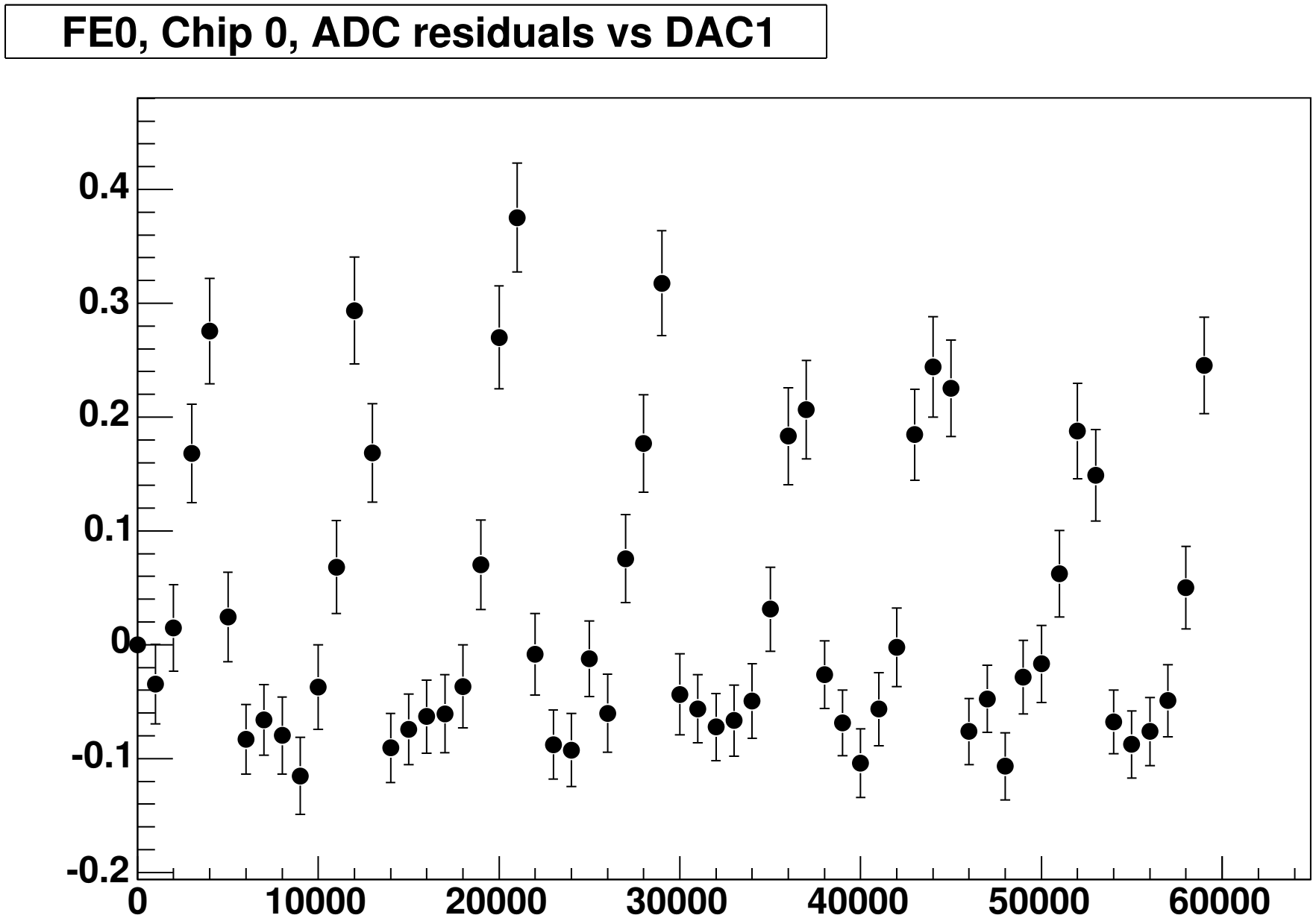

FE0, Chip 0, ADC mean vs DAC0
χ² / ndf 1.928e+05 / 57
p0 -29.95 ± 0.007436
p1 0.2305 ± 2.436e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

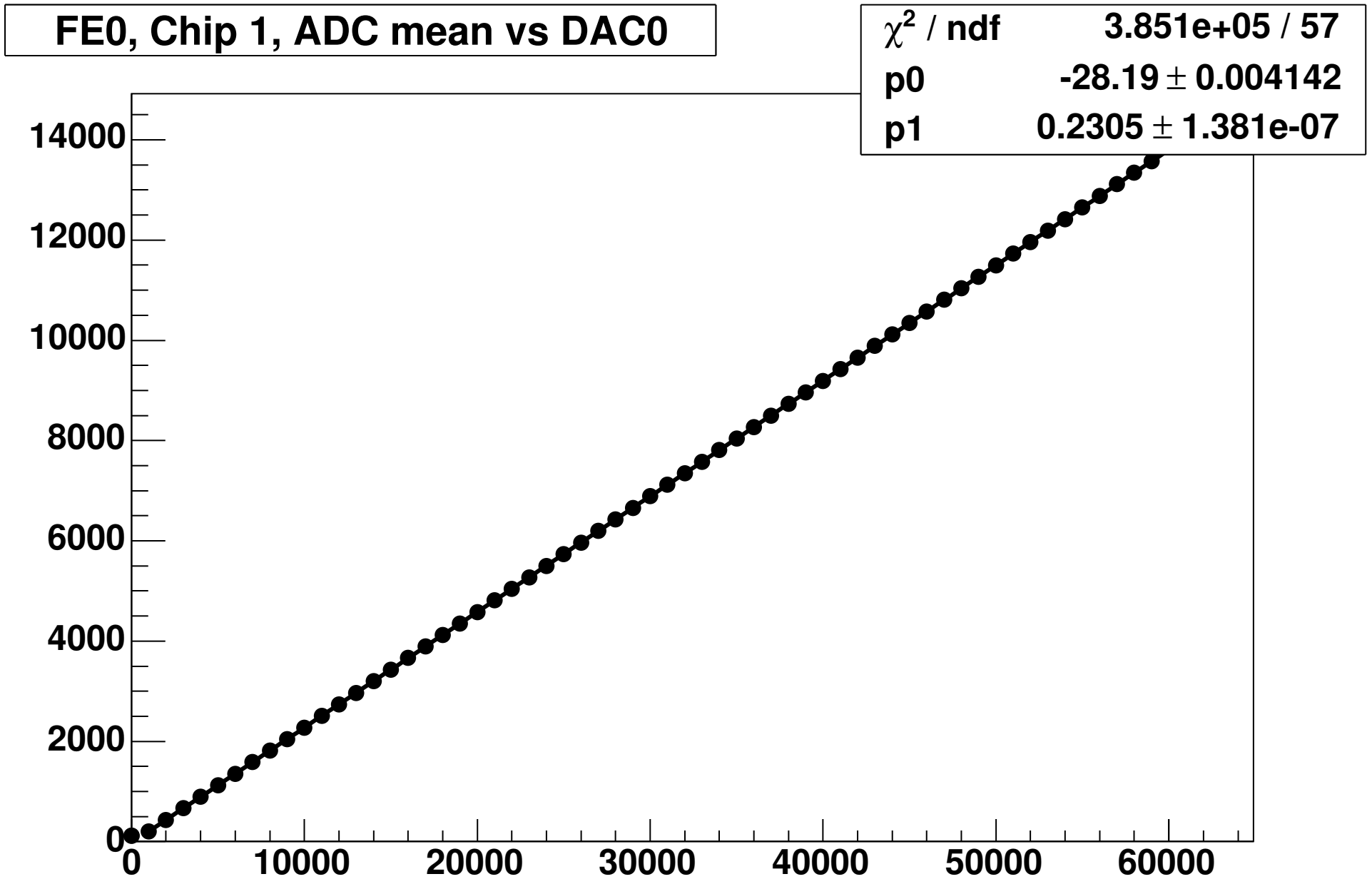

FE0, Chip 0, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

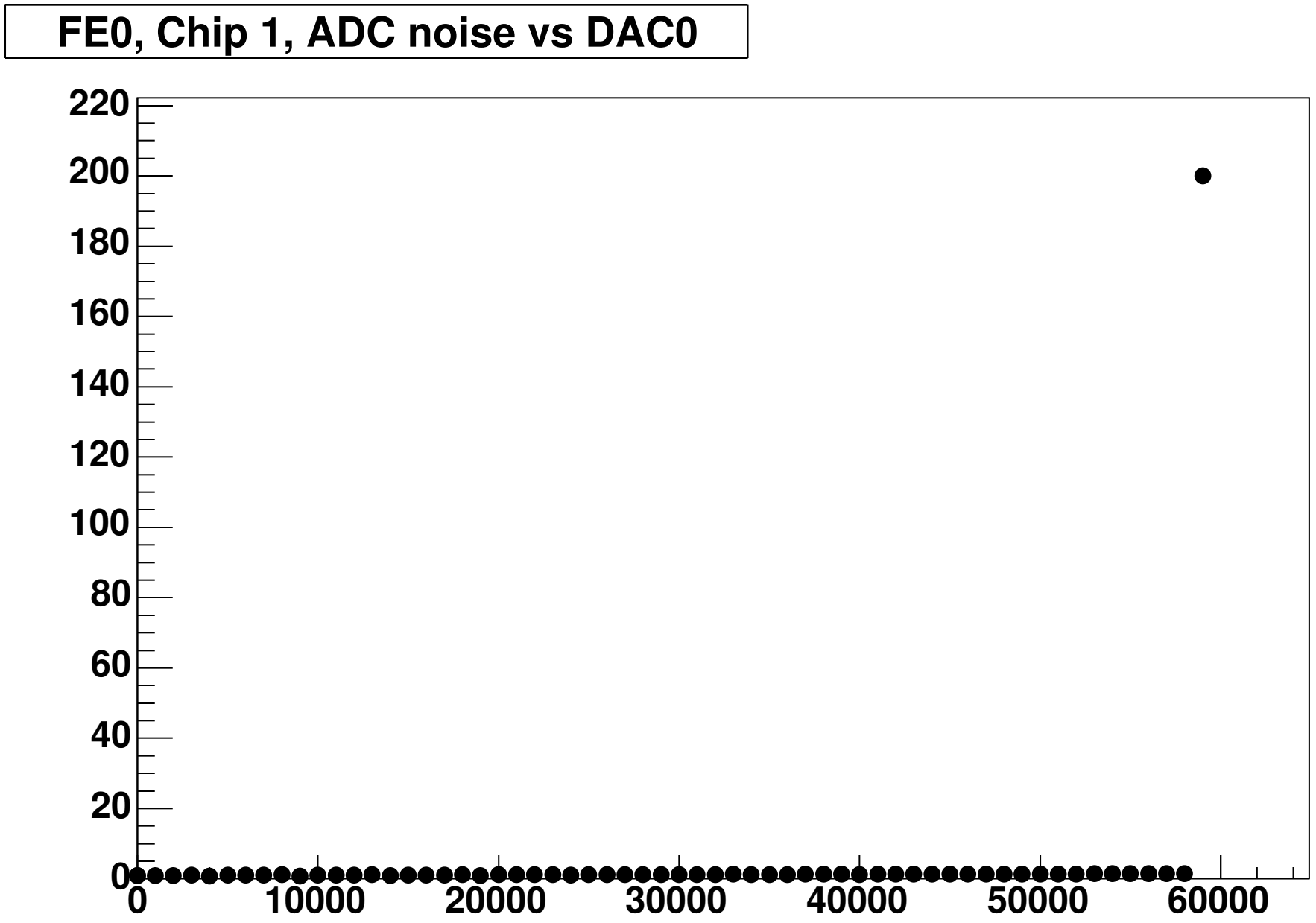

FE0, Chip 0, ADC residuals vs DAC0
6
4
2
0
-2
0
10000
20000
30000
40000
50000
60000

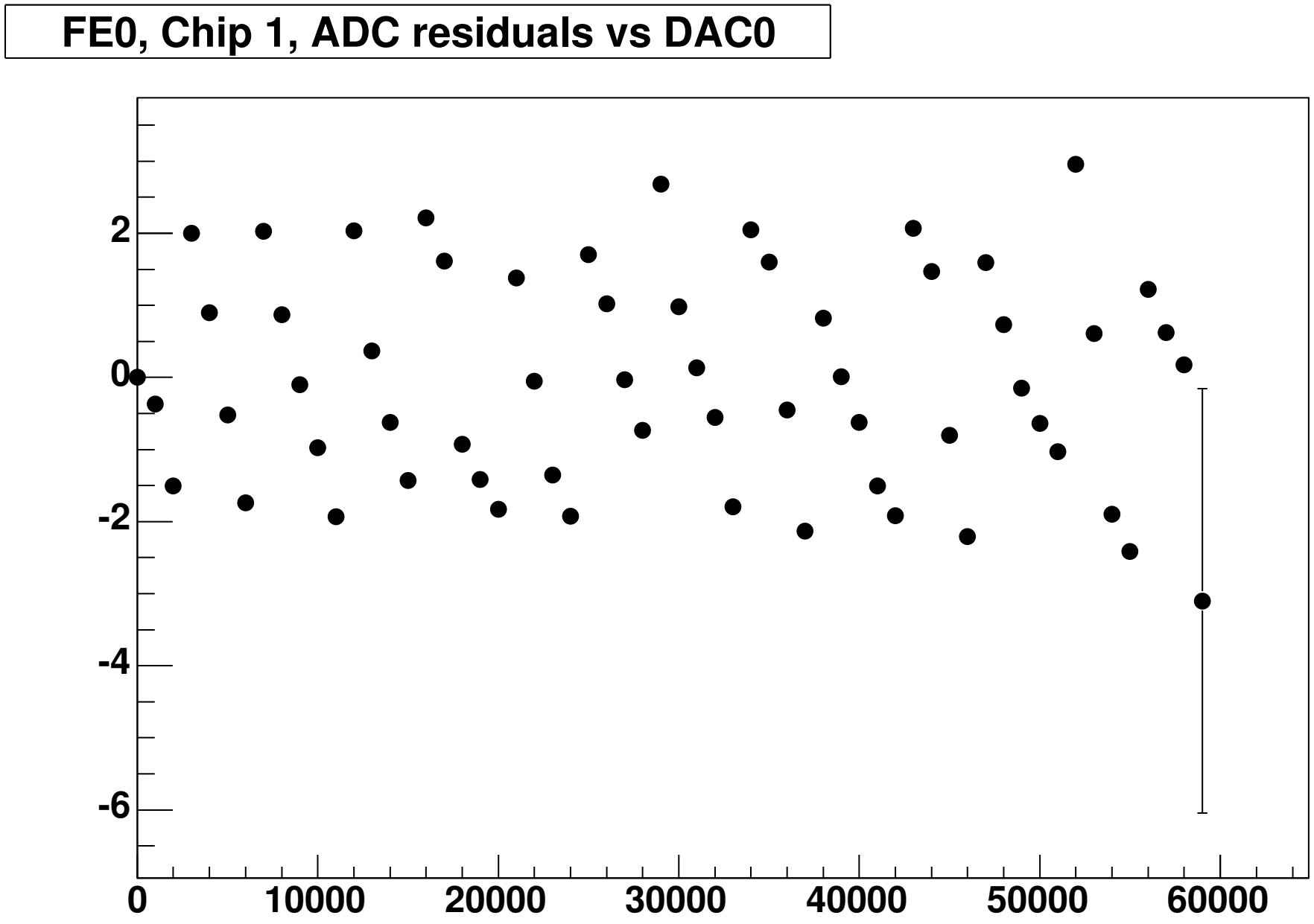

FE0, Chip 0, ADC mean vs DAC1
χ² / ndf 630.6 / 57
p0 121.4 ± 0.009504
p1 -1.252e-06 ± 2.682e-07
121.8
121.7
121.6
121.5
121.4
121.3
121.2
0
10000
20000
30000
40000
50000
60000

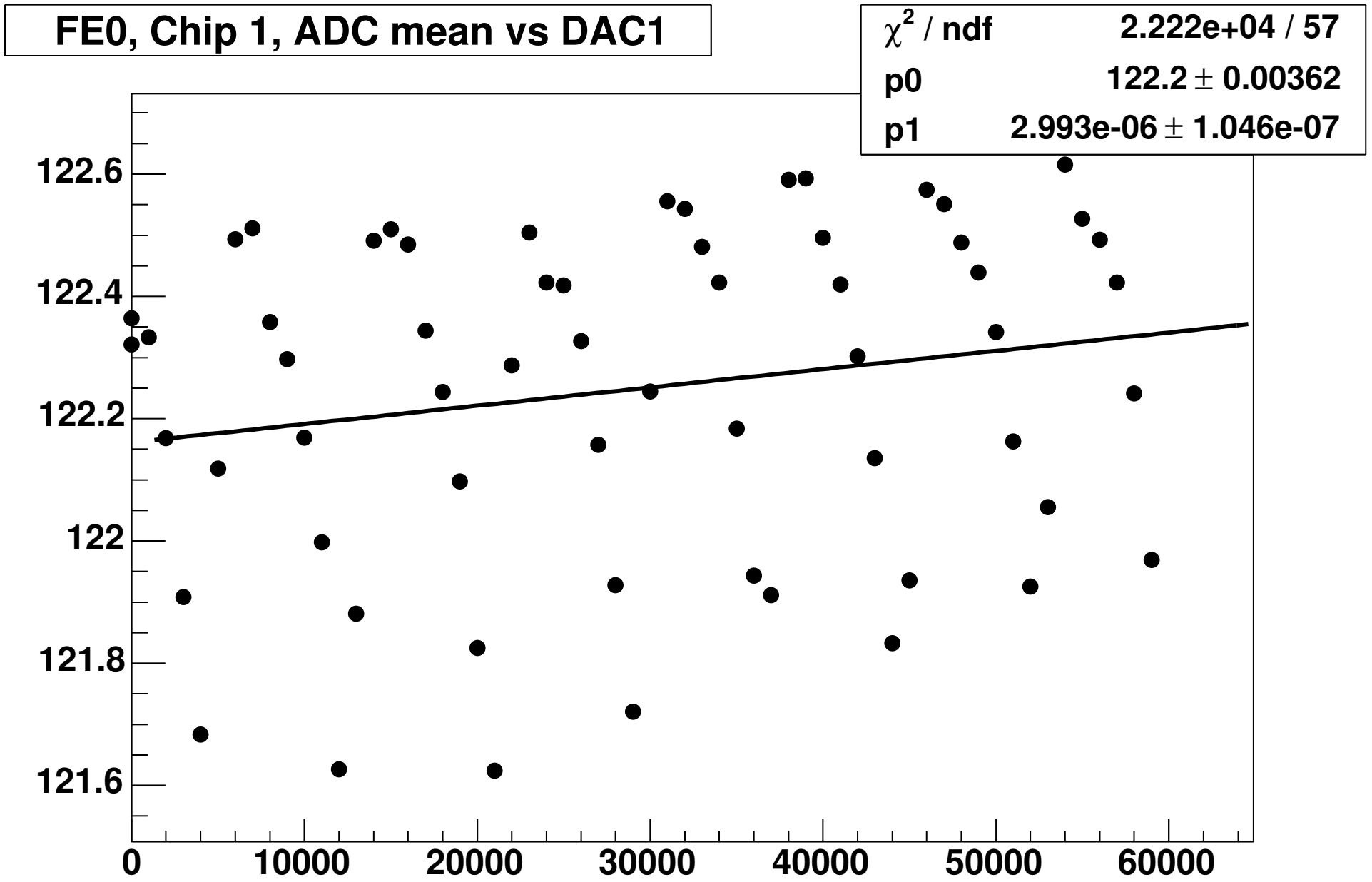

FE0, Chip 0, ADC noise vs DAC1
3.4
3.2
3
2.8
2.6
2.4
2.2
2
1.8
0
10000
20000
30000
40000
50000
60000

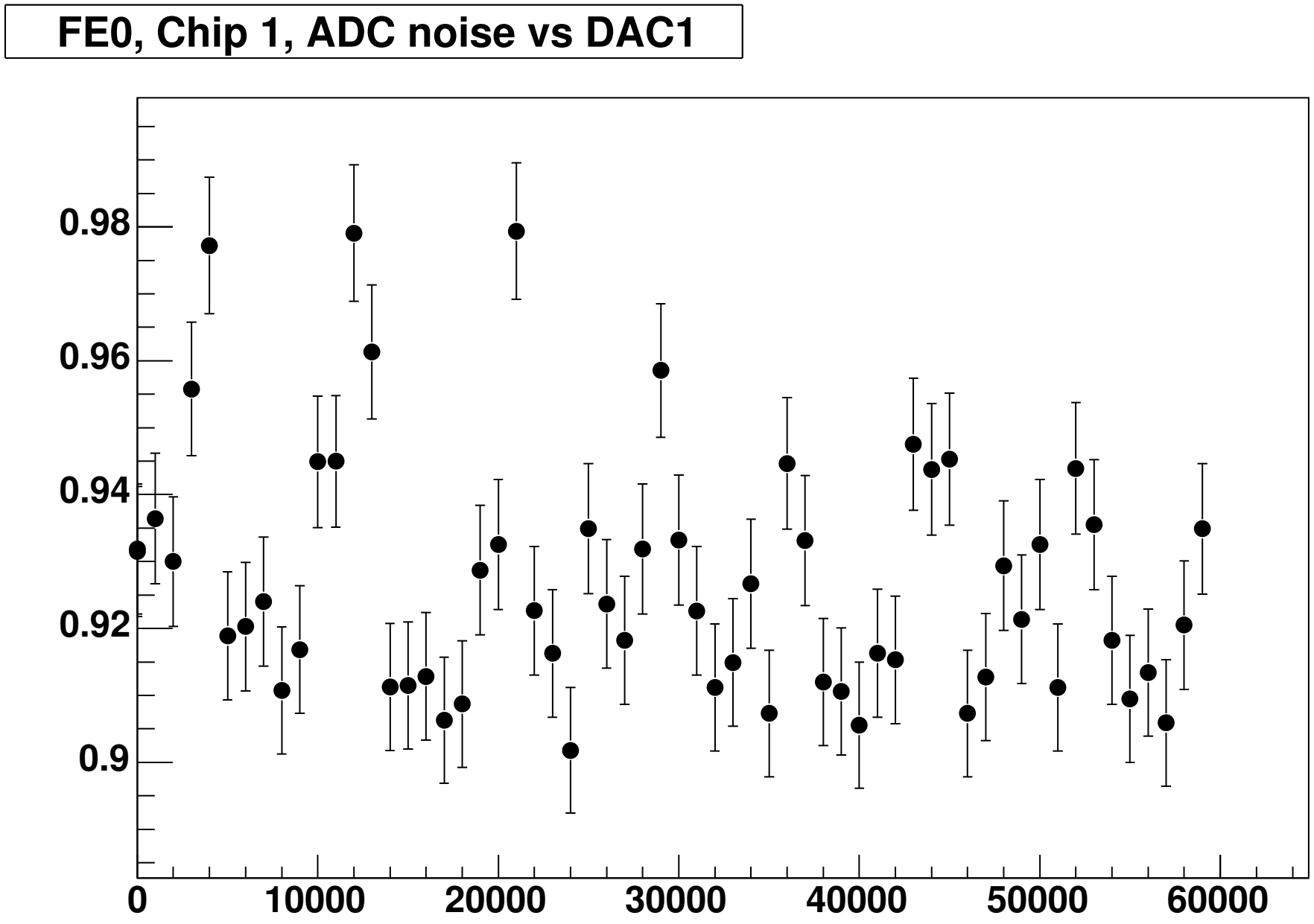

FE0, Chip 0, ADC residuals vs DAC1
0.4
0.3
0.2
0.1
0
-0.1
-0.2
0
10000
20000
30000
40000
50000
60000

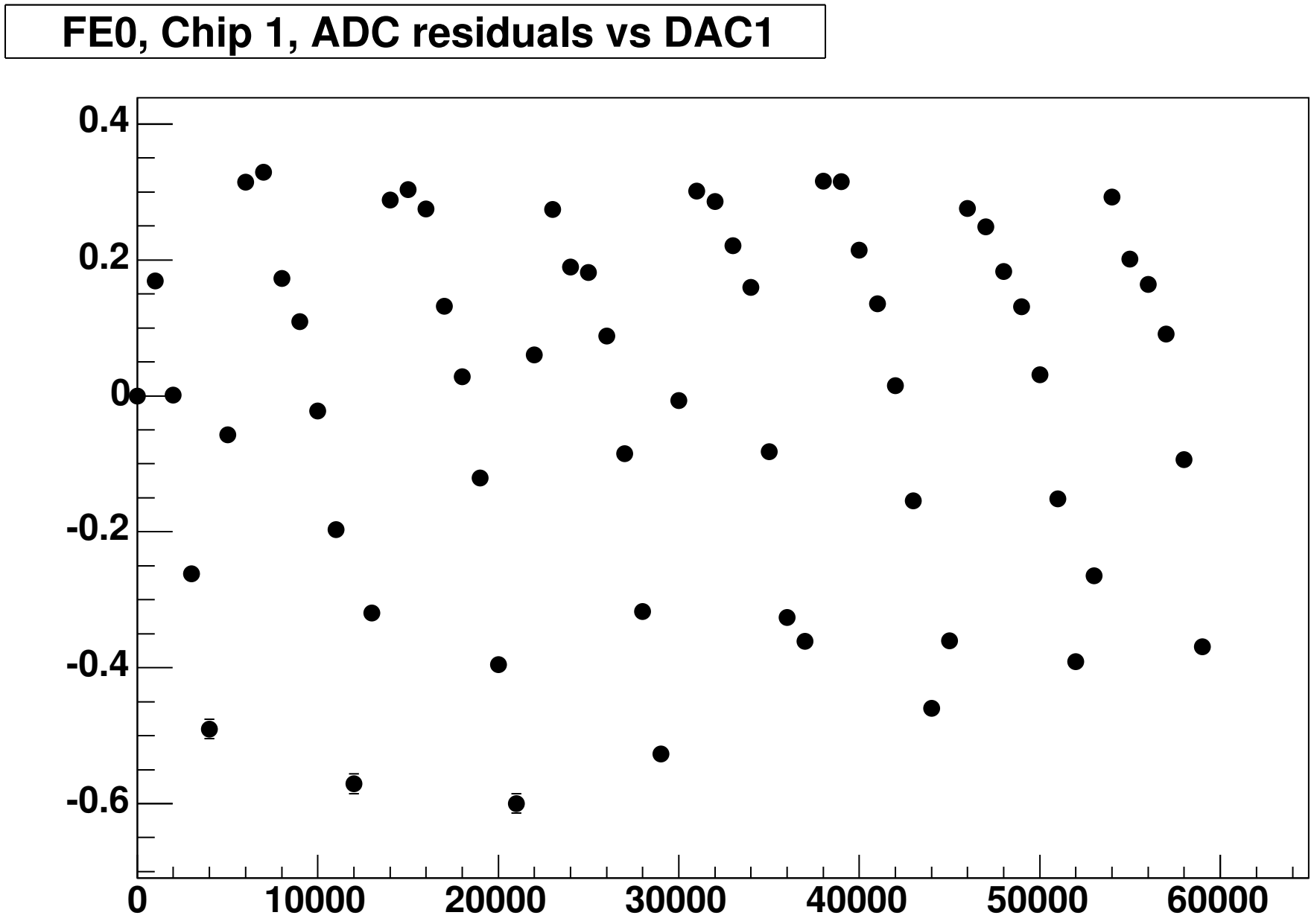

FE0, Chip 1, ADC mean vs DAC0
χ² / ndf 3.851e+05 / 57
p0 -28.19 ± 0.004142
p1 0.2305 ± 1.381e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

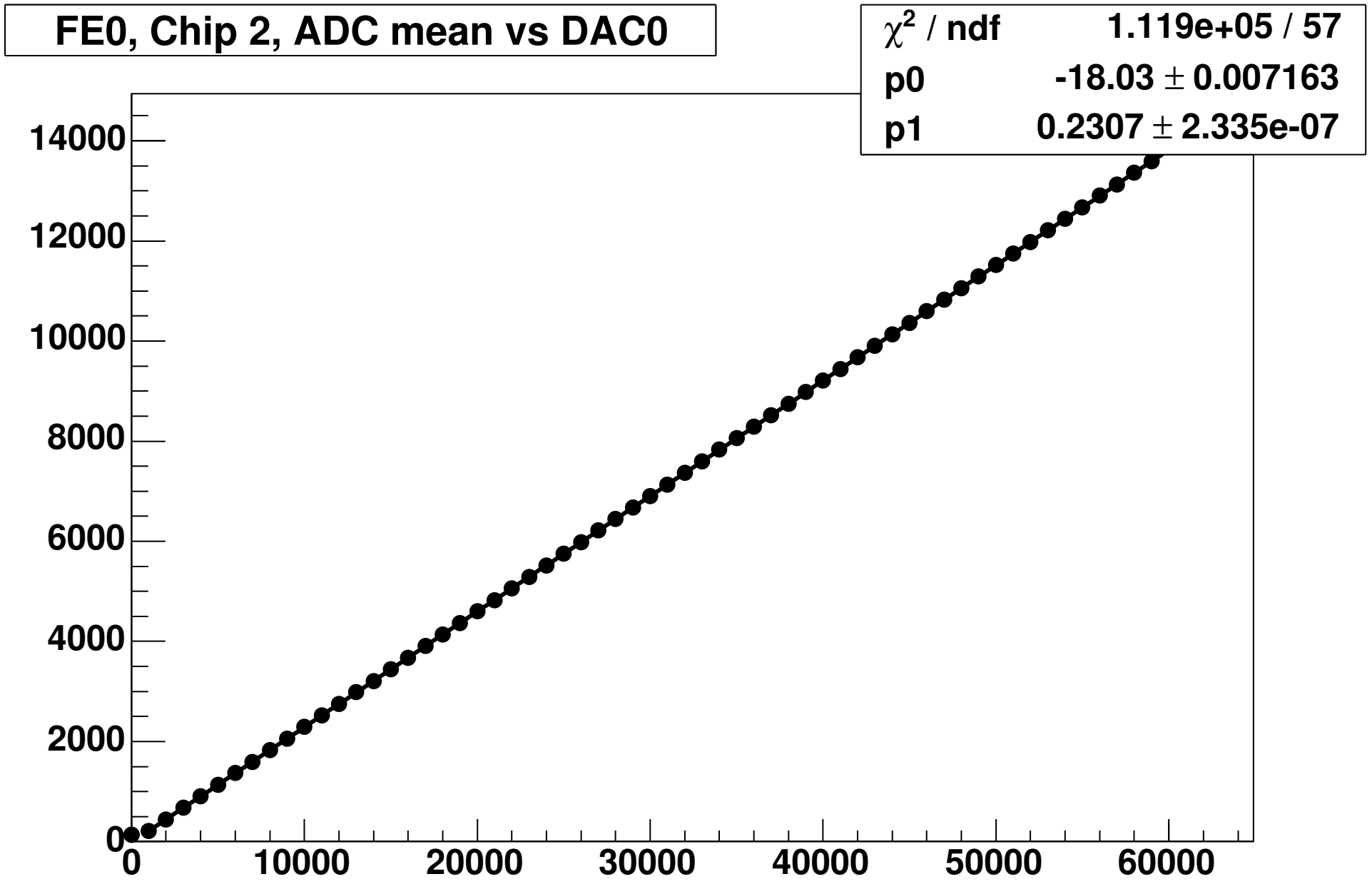

FE0, Chip 1, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

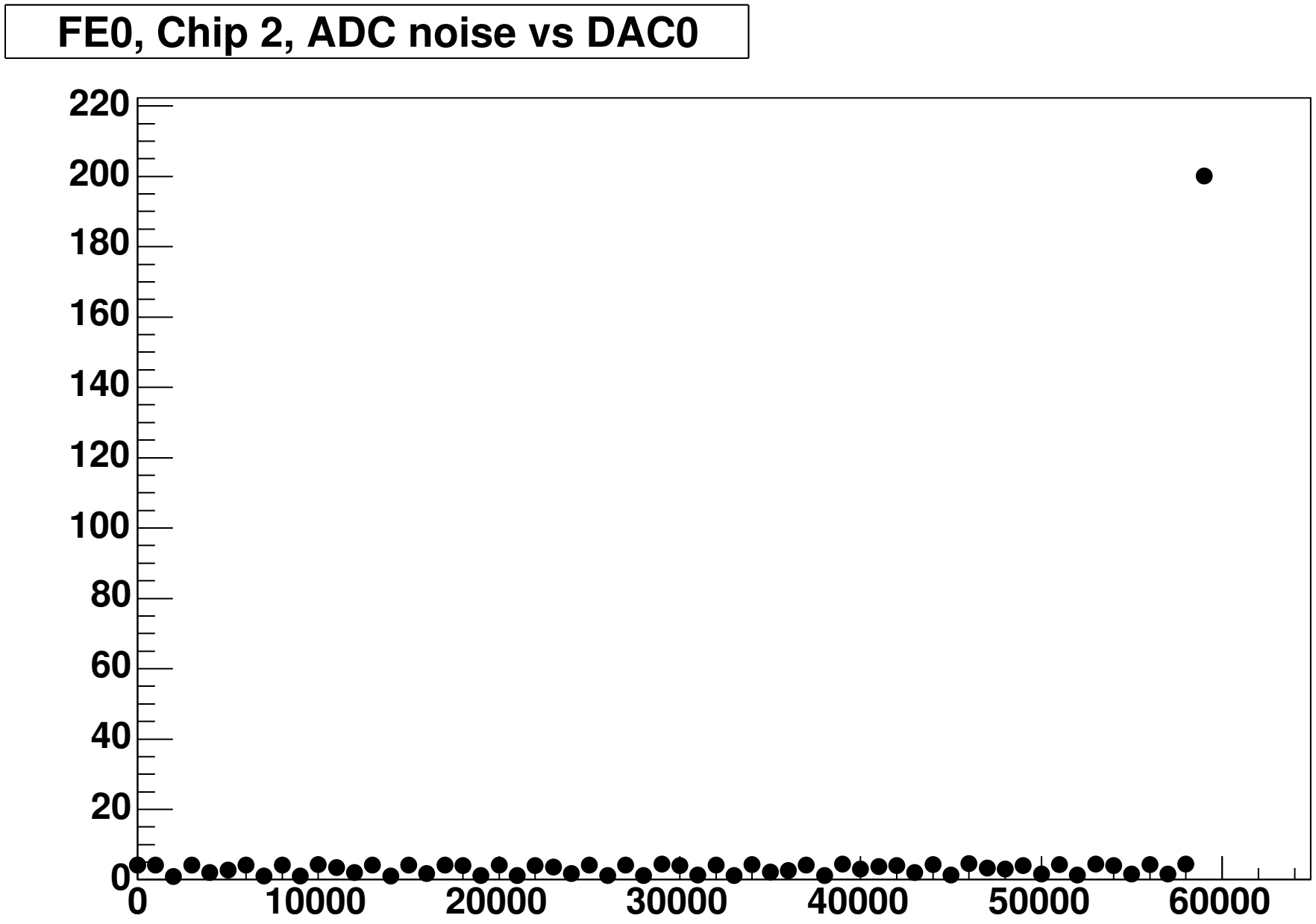

FE0, Chip 1, ADC residuals vs DAC0
2
0
-2
-4
-6
0
10000
20000
30000
40000
50000
60000

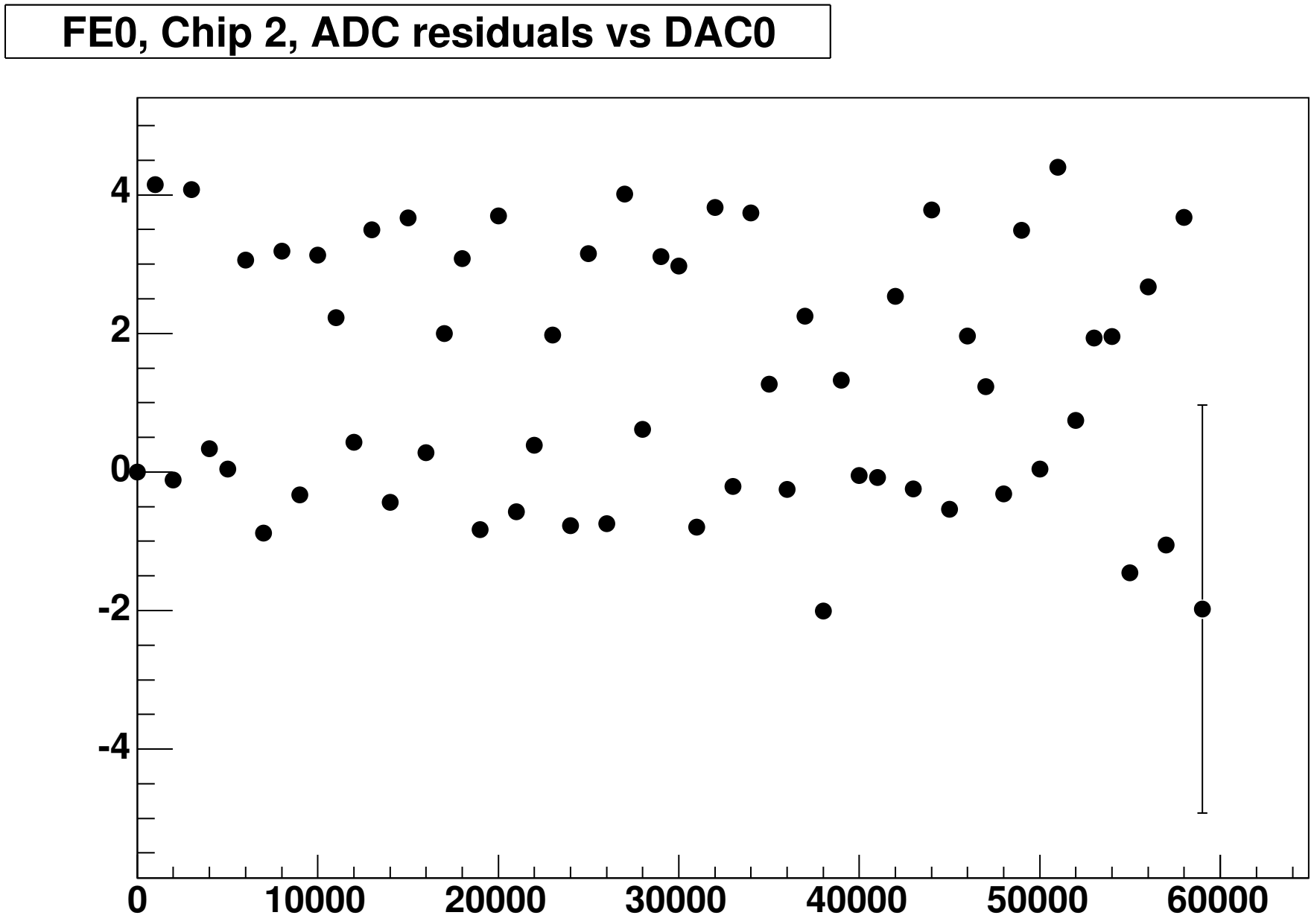

FE0, Chip 1, ADC mean vs DAC1
χ² / ndf 2.222e+04 / 57
p0 122.2 ± 0.00362
p1 2.993e-06 ± 1.046e-07
122.6
122.4
122.2
122
121.8
121.6
0
10000
20000
30000
40000
50000
60000

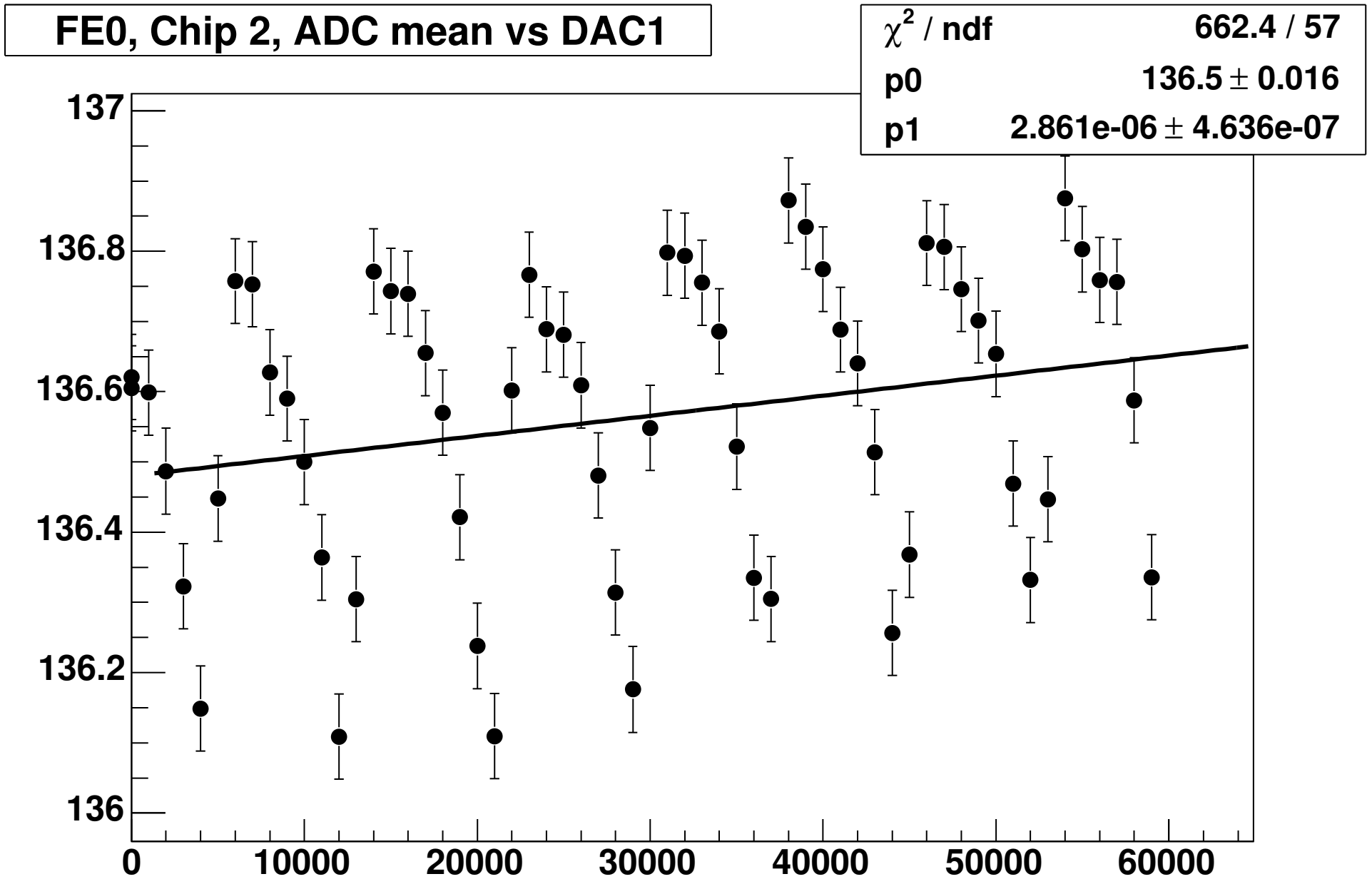

FE0, Chip 1, ADC noise vs DAC1
0.98
0.96
0.94
0.92
0.9
0
10000
20000
30000
40000
50000
60000

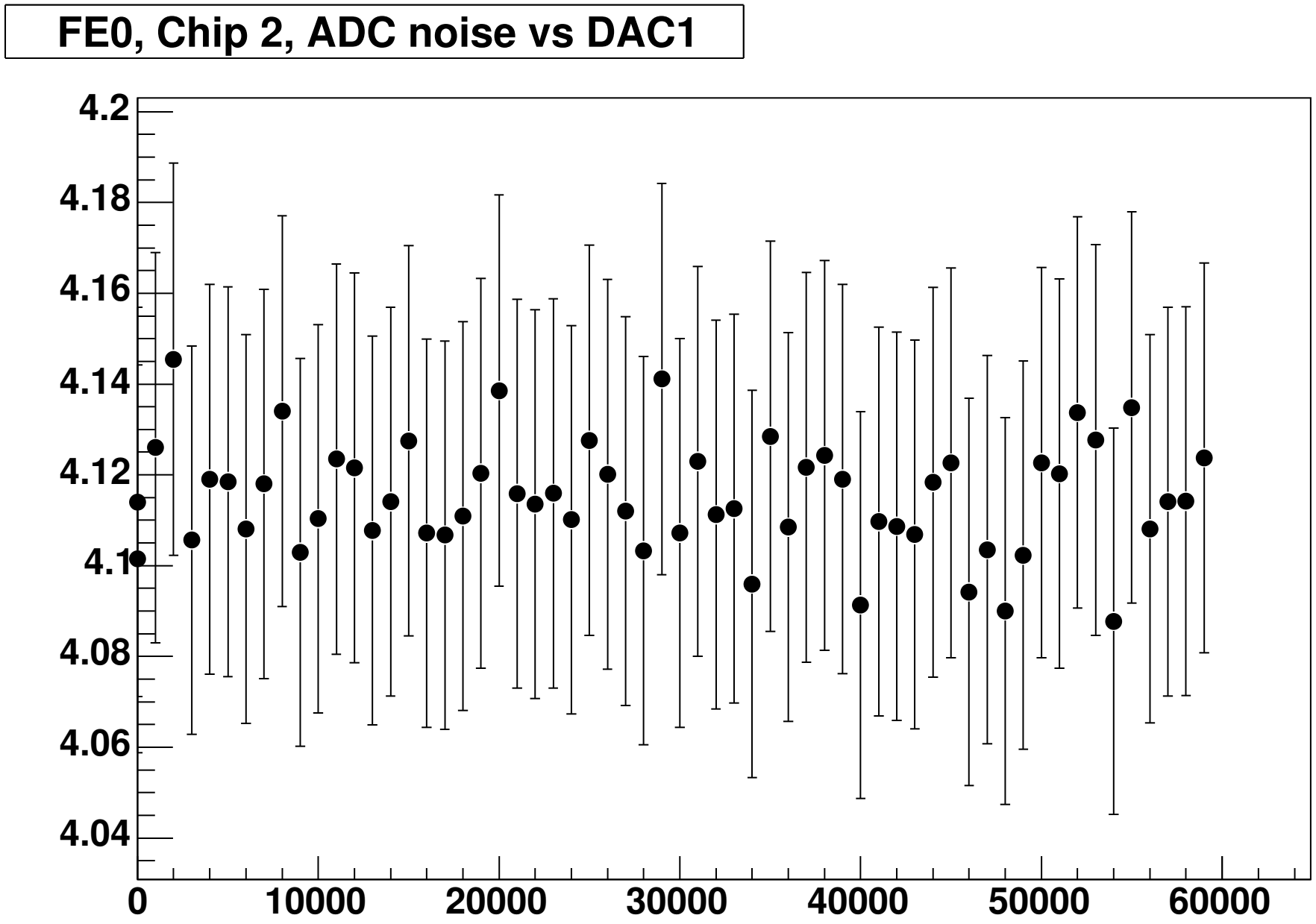

FE0, Chip 1, ADC residuals vs DAC1
0.4
0.2
0
-0.2
-0.4
-0.6
0
10000
20000
30000
40000
50000
60000

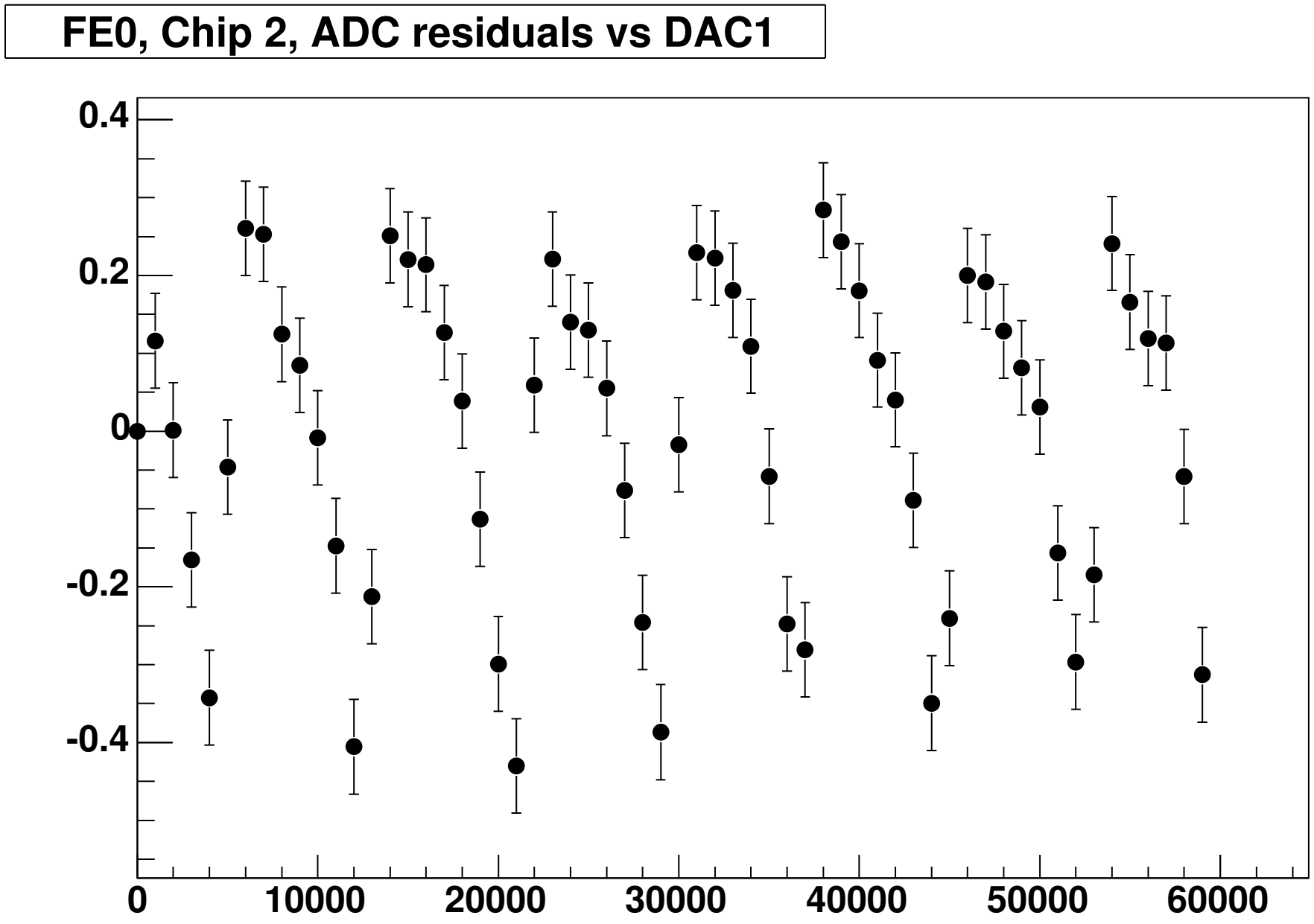

FE0, Chip 2, ADC mean vs DAC0
χ² / ndf 1.119e+05 / 57
p0 -18.03 ± 0.007163
p1 0.2307 ± 2.335e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

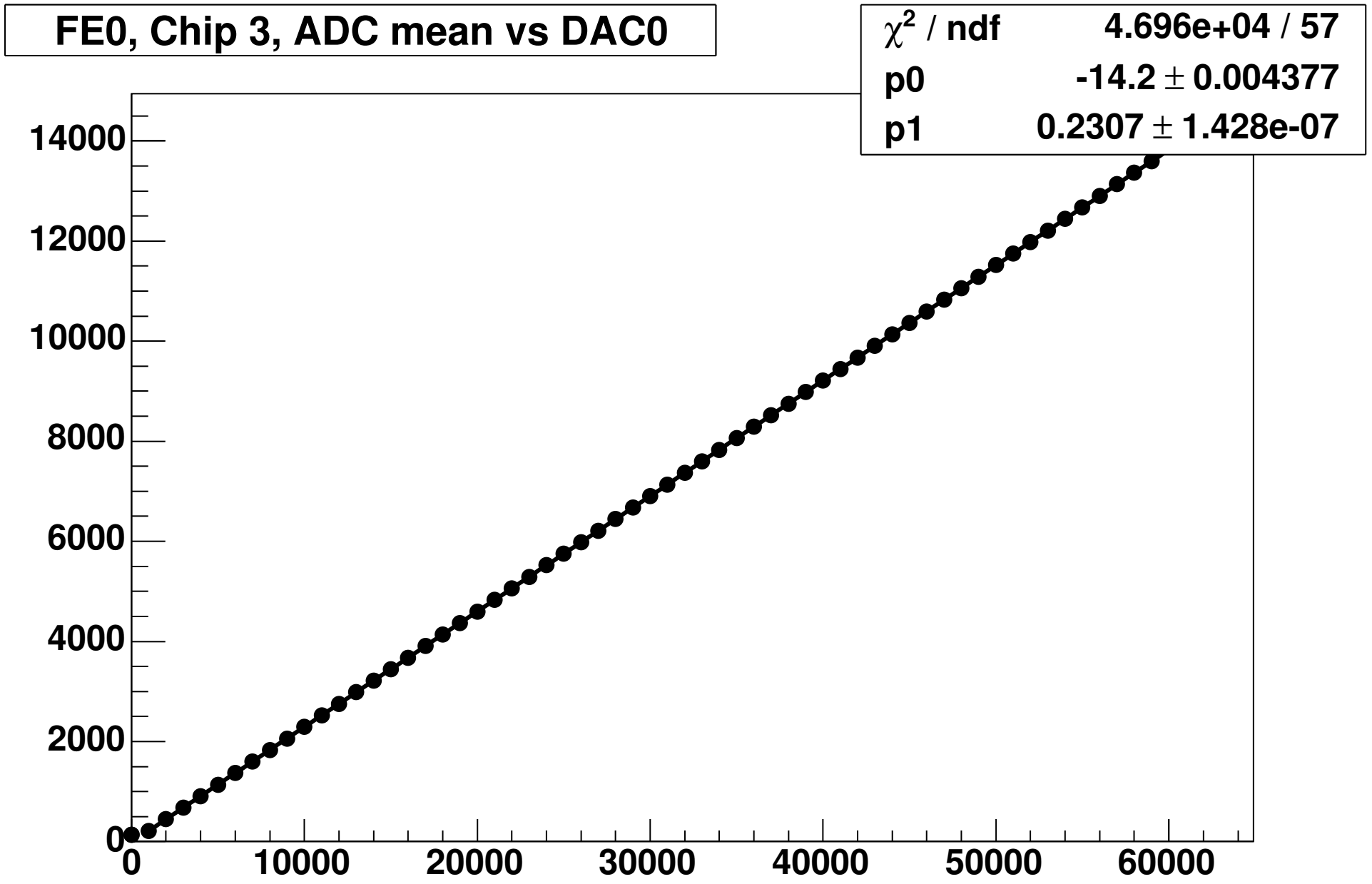

FE0, Chip 2, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

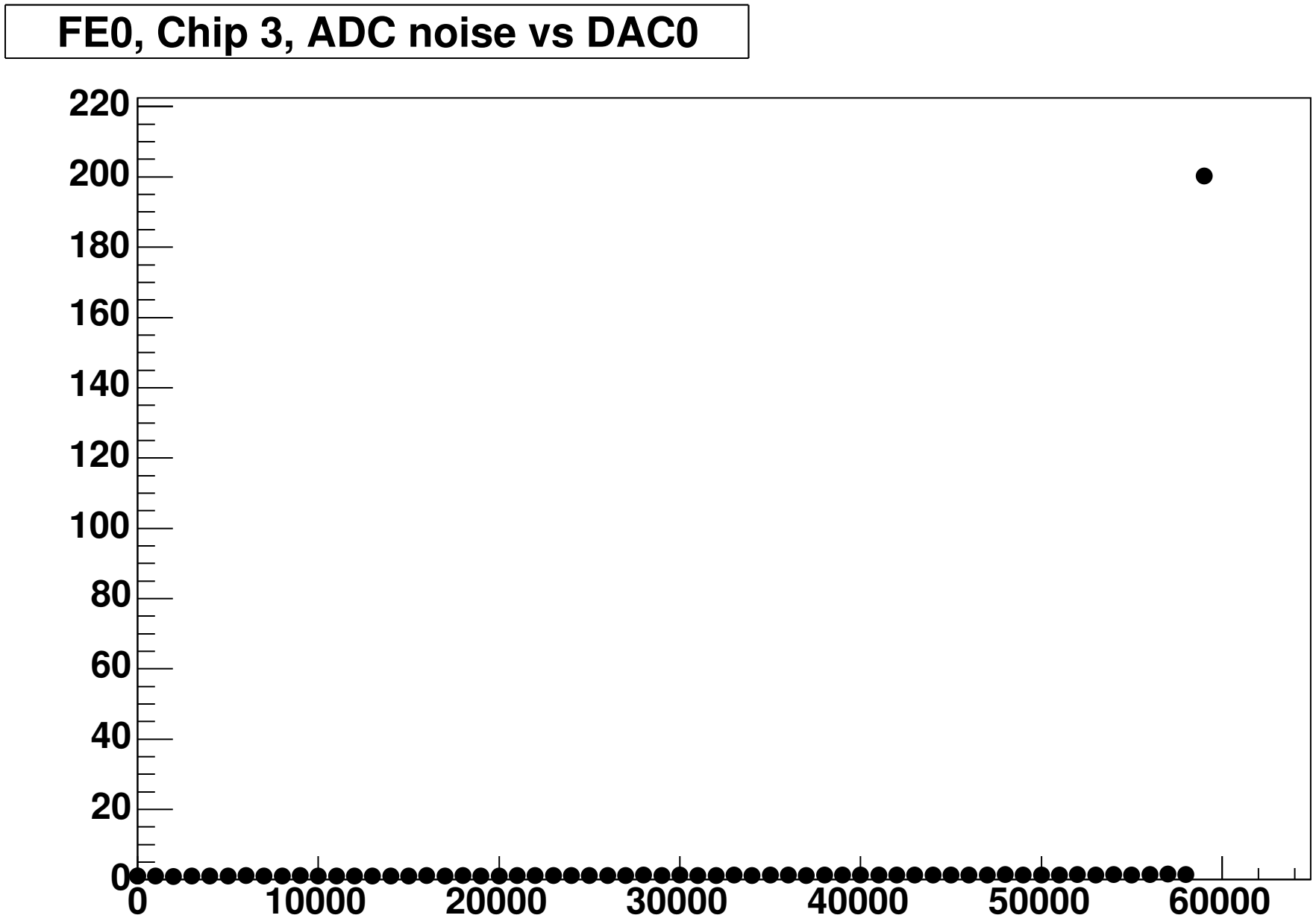

FE0, Chip 2, ADC residuals vs DAC0
4
2
0
-2
-4
0
10000
20000
30000
40000
50000
60000

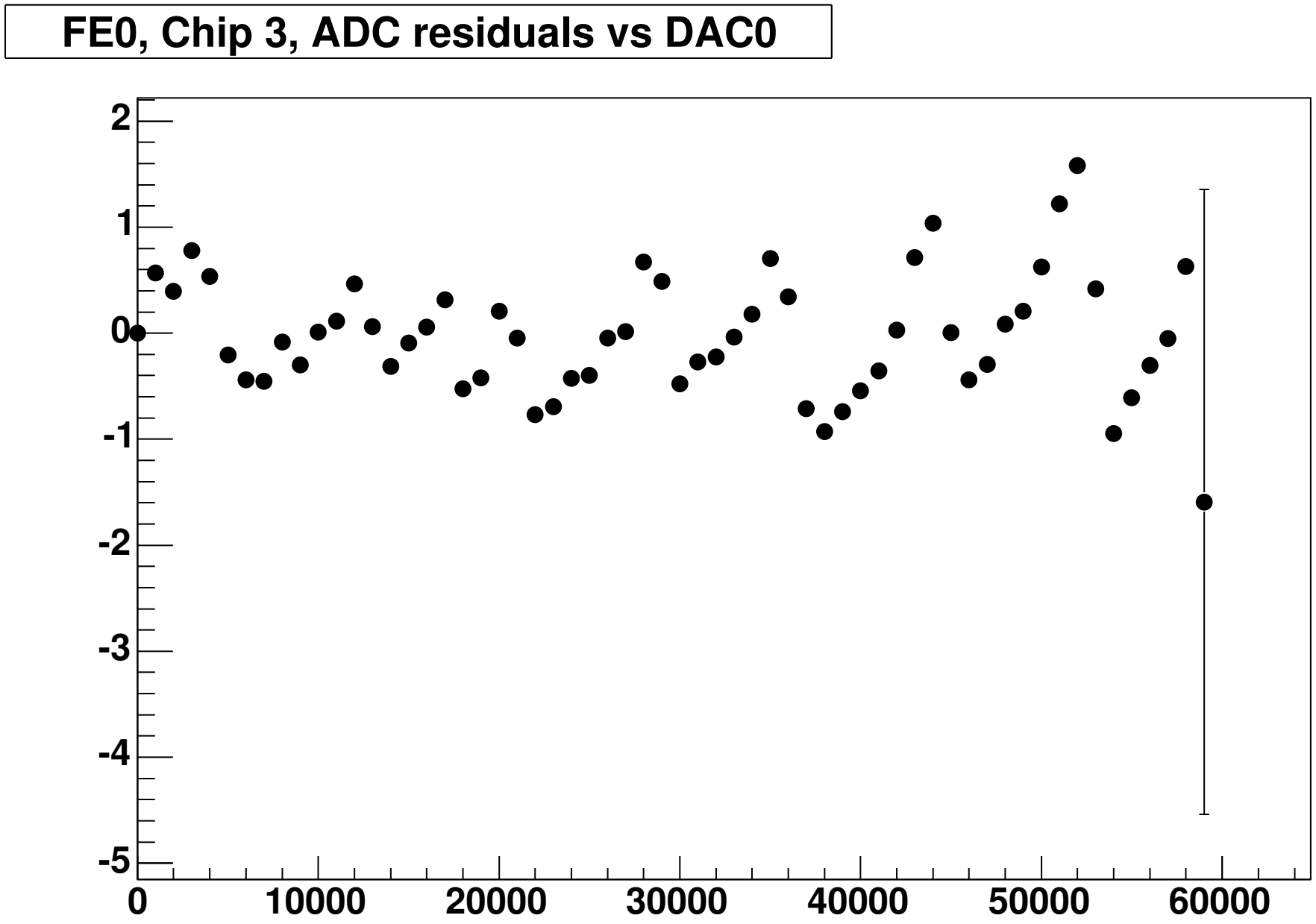

FE0, Chip 2, ADC mean vs DAC1
χ² / ndf 662.4 / 57
p0 136.5 ± 0.016
p1 2.861e-06 ± 4.636e-07
137
136.8
136.6
136.4
136.2
136
0
10000
20000
30000
40000
50000
60000

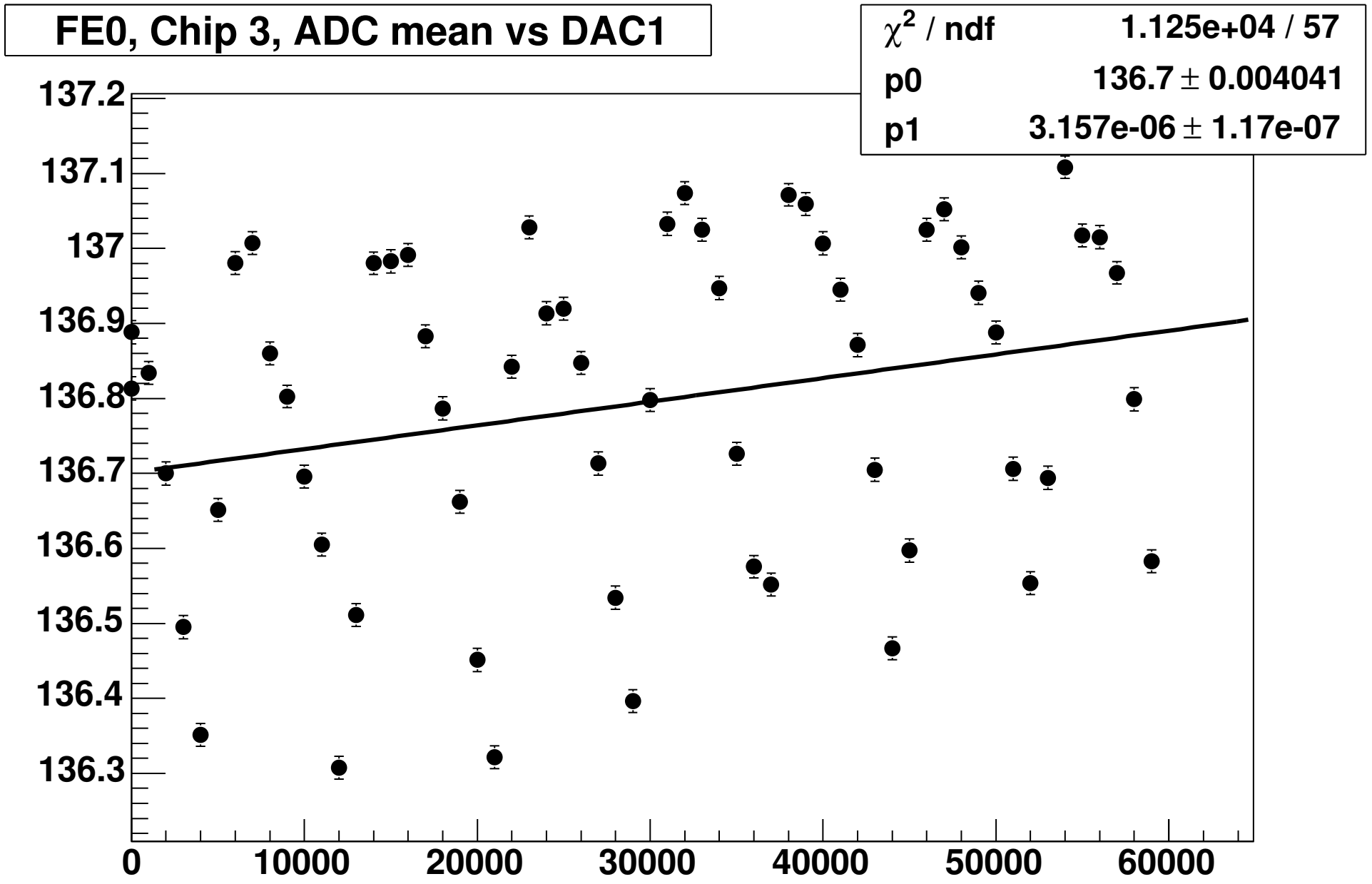

FE0, Chip 2, ADC noise vs DAC1
4.2
4.18
4.16
4.14
4.12
4.1
4.08
4.06
4.04
0
10000
20000
30000
40000
50000
60000

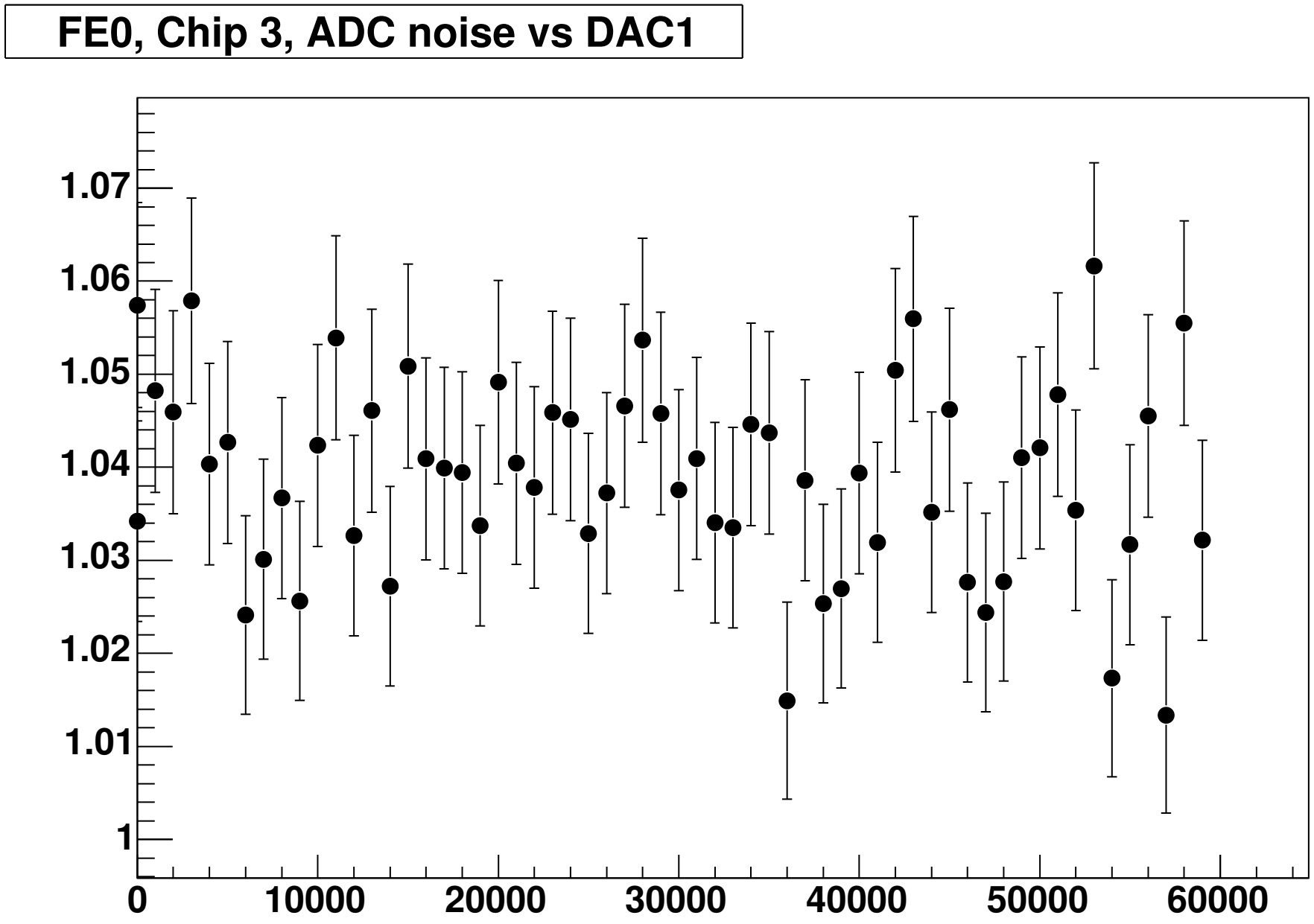

FE0, Chip 2, ADC residuals vs DAC1
0.4
0.2
0
-0.2
-0.4
0
10000
20000
30000
40000
50000
60000

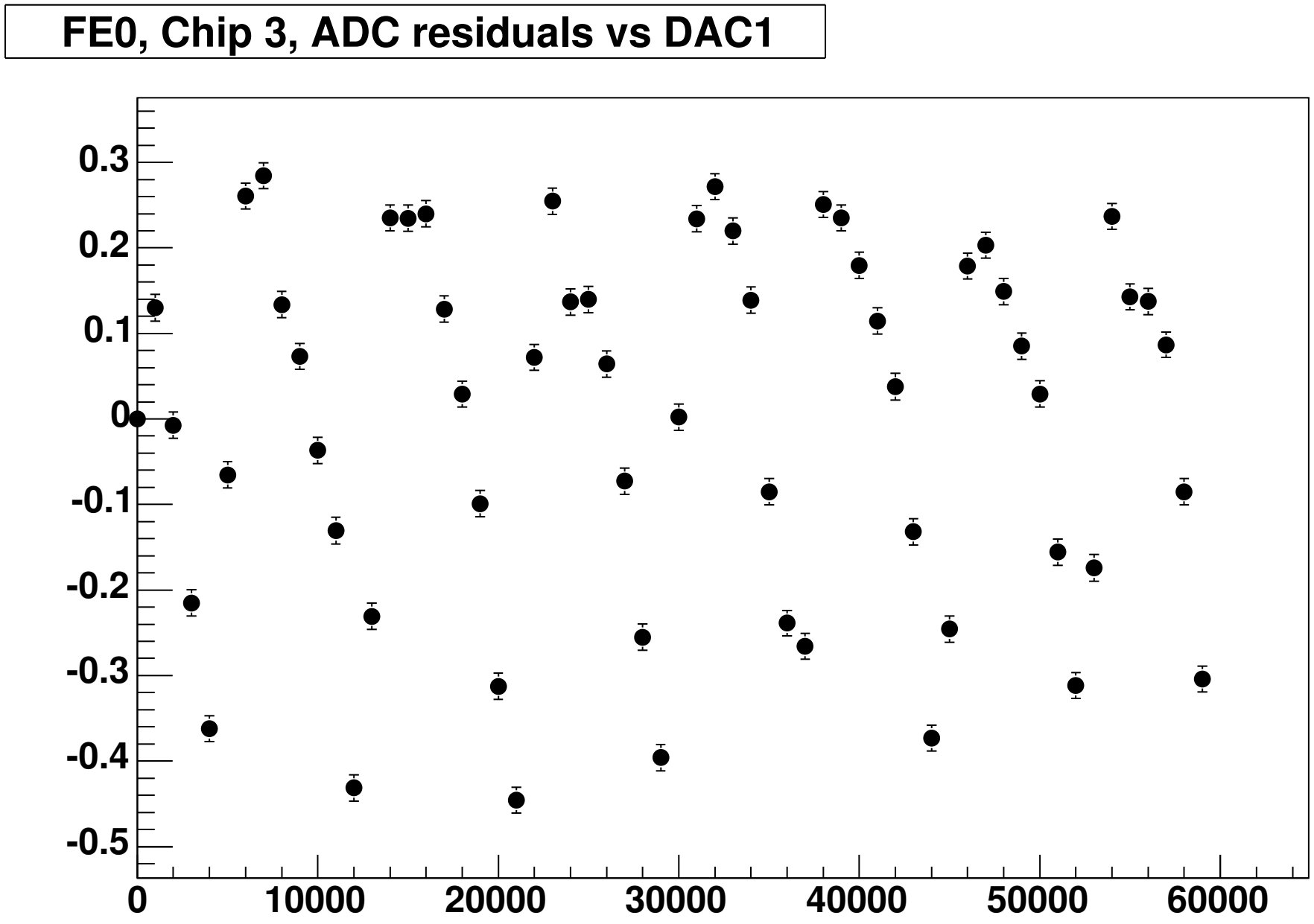

FE0, Chip 3, ADC mean vs DAC0
χ² / ndf 4.696e+04 / 57
p0 -14.2 ± 0.004377
p1 0.2307 ± 1.428e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

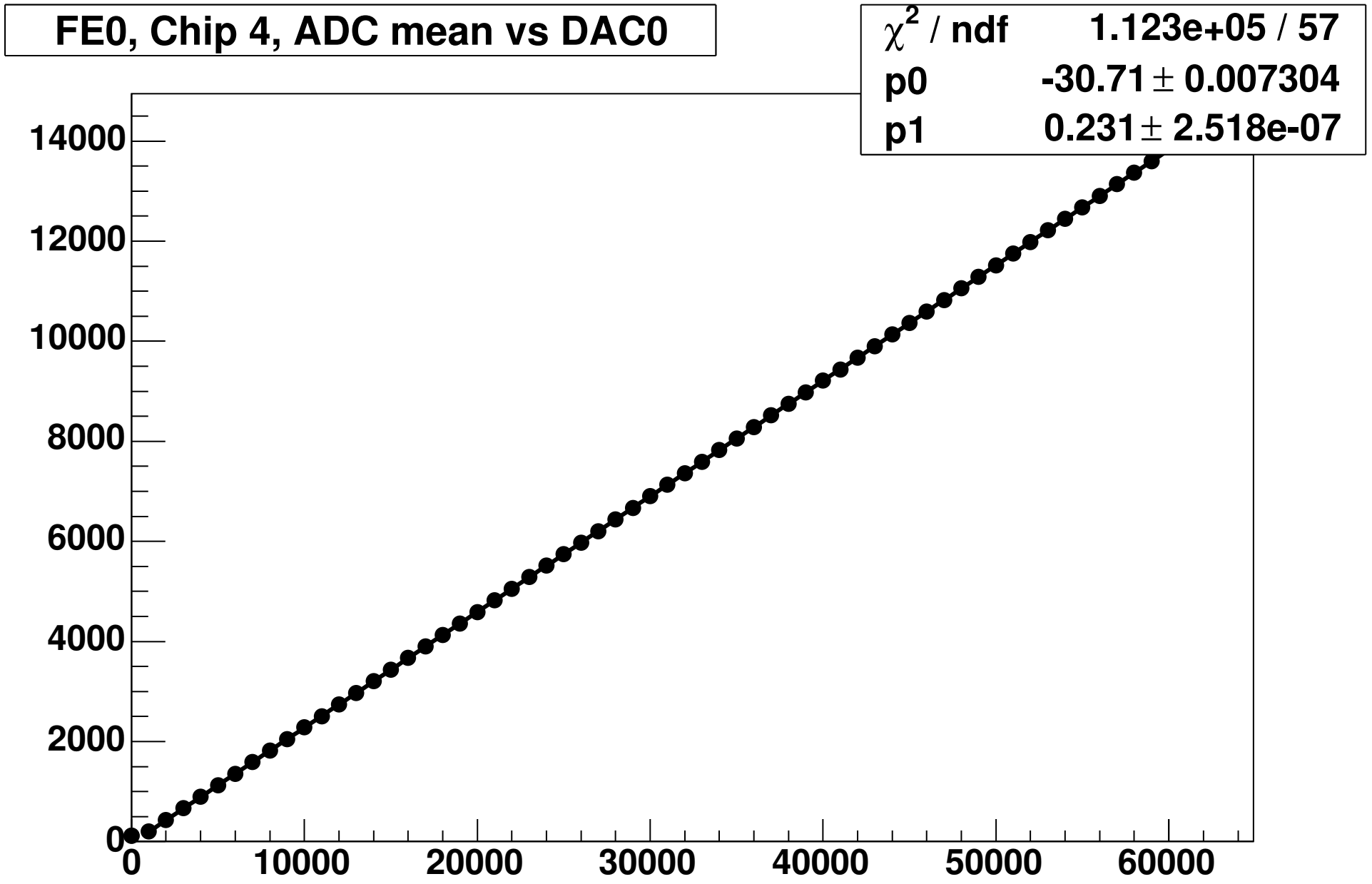

FE0, Chip 3, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

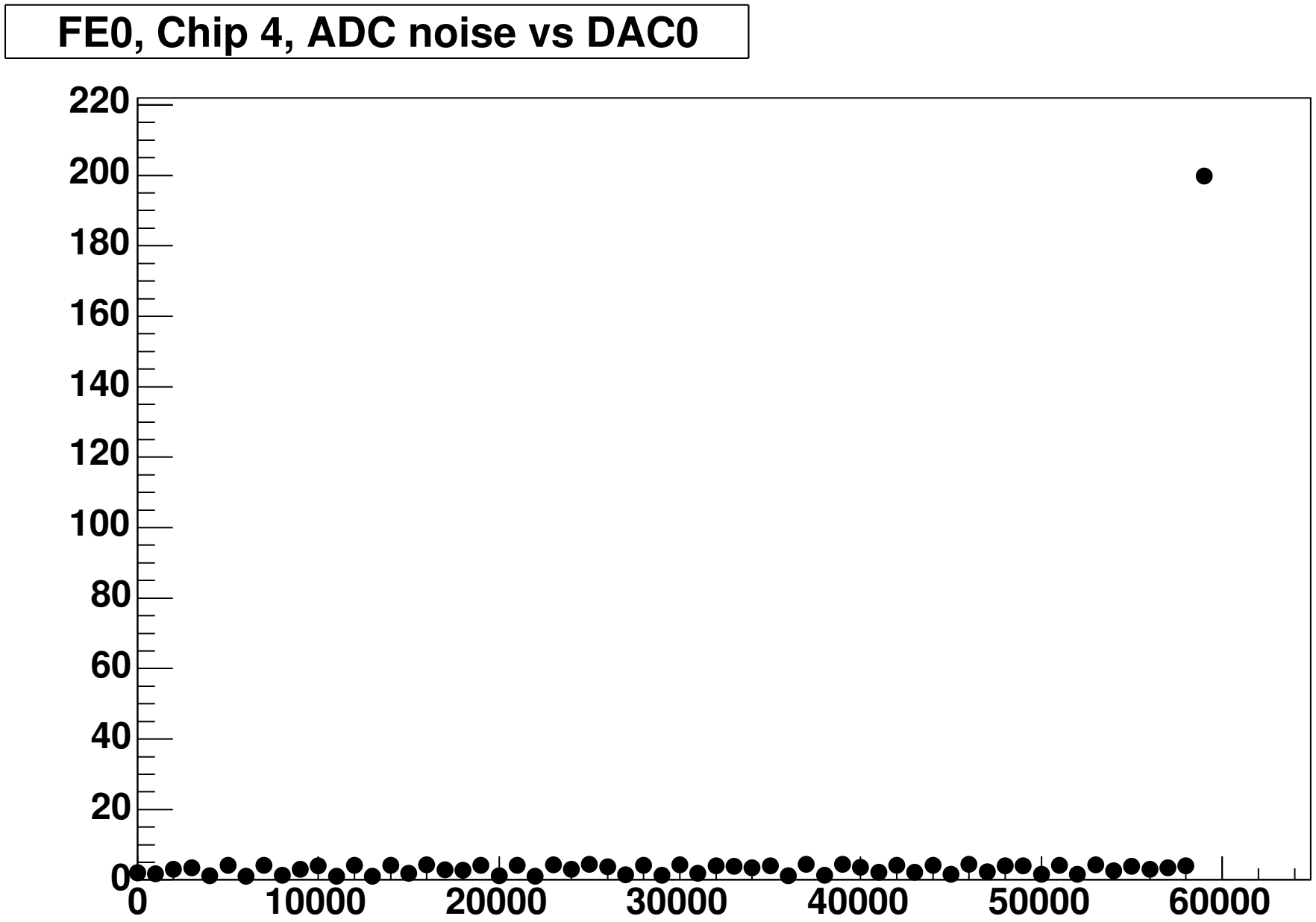

FE0, Chip 3, ADC residuals vs DAC0
2
1
0
-1
-2
-3
-4
-5
0
10000
20000
30000
40000
50000
60000

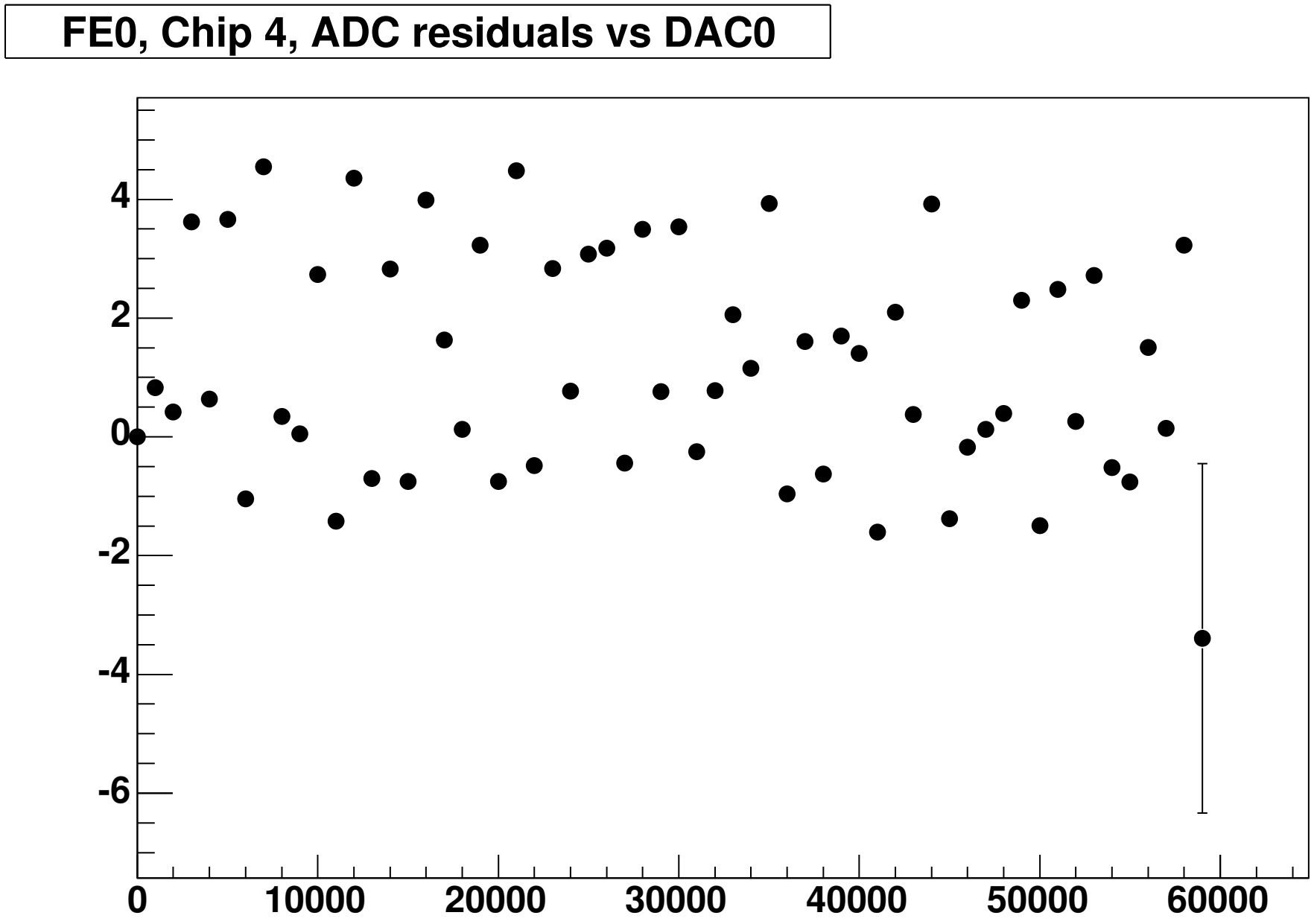

FE0, Chip 3, ADC mean vs DAC1
χ² / ndf 1.125e+04 / 57
p0 136.7 ± 0.004041
p1 3.157e-06 ± 1.17e-07
137.2
137.1
137
136.9
136.8
136.7
136.6
136.5
136.4
136.3
0
10000
20000
30000
40000
50000
60000

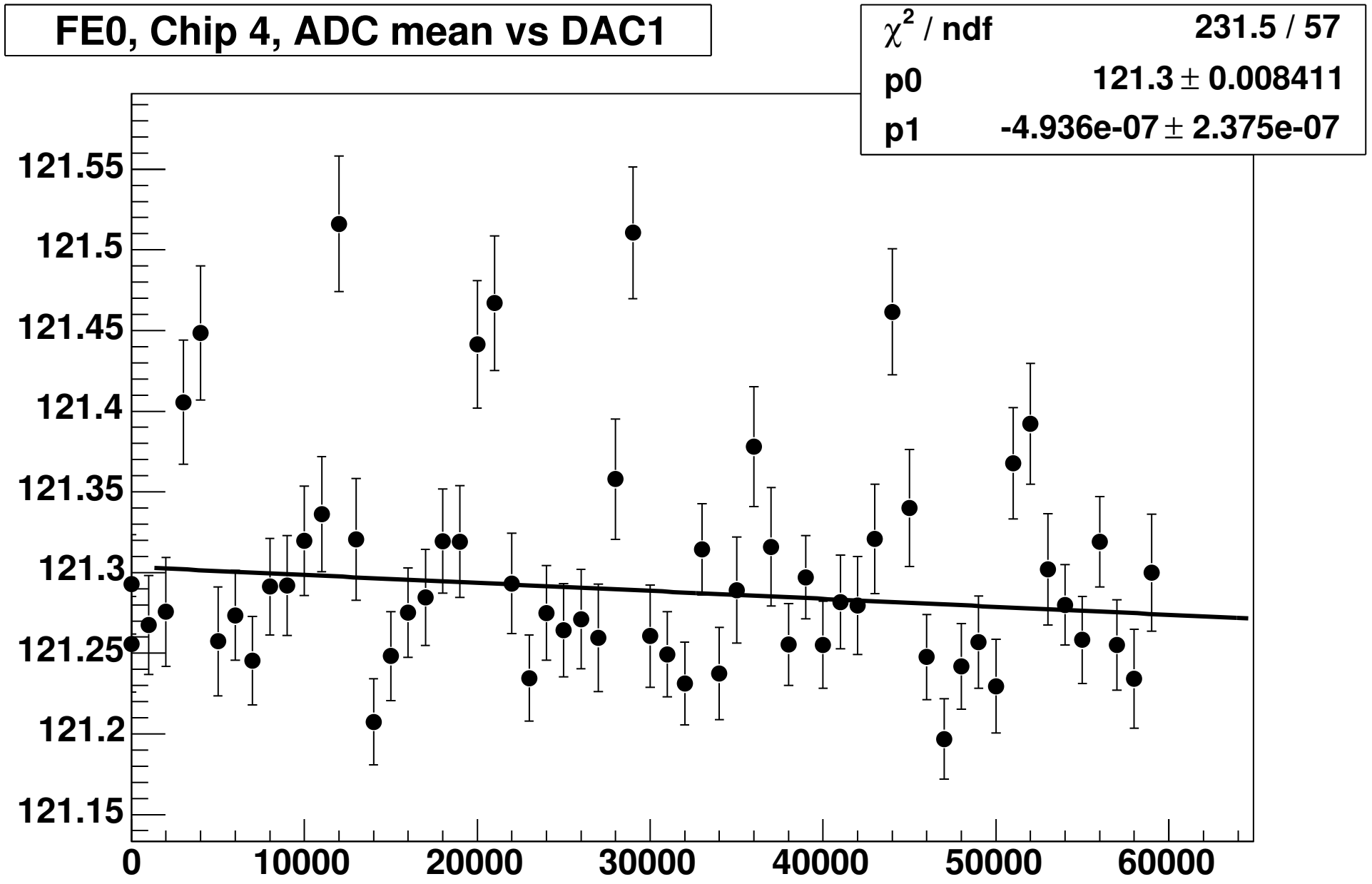

FE0, Chip 3, ADC noise vs DAC1
1.07
1.06
1.05
1.04
1.03
1.02
1.01
1
0
10000
20000
30000
40000
50000
60000

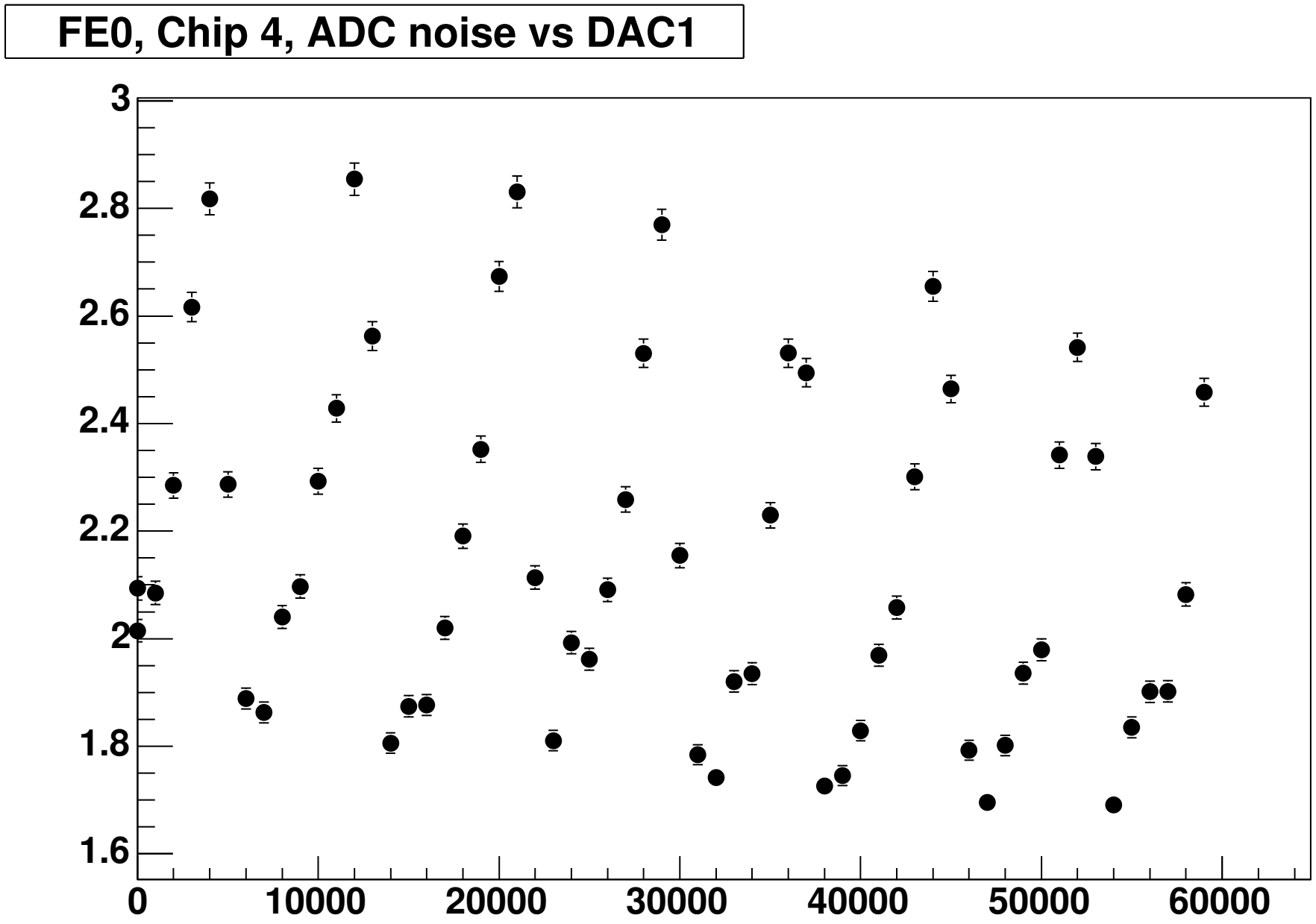

FE0, Chip 3, ADC residuals vs DAC1
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
0
10000
20000
30000
40000
50000
60000

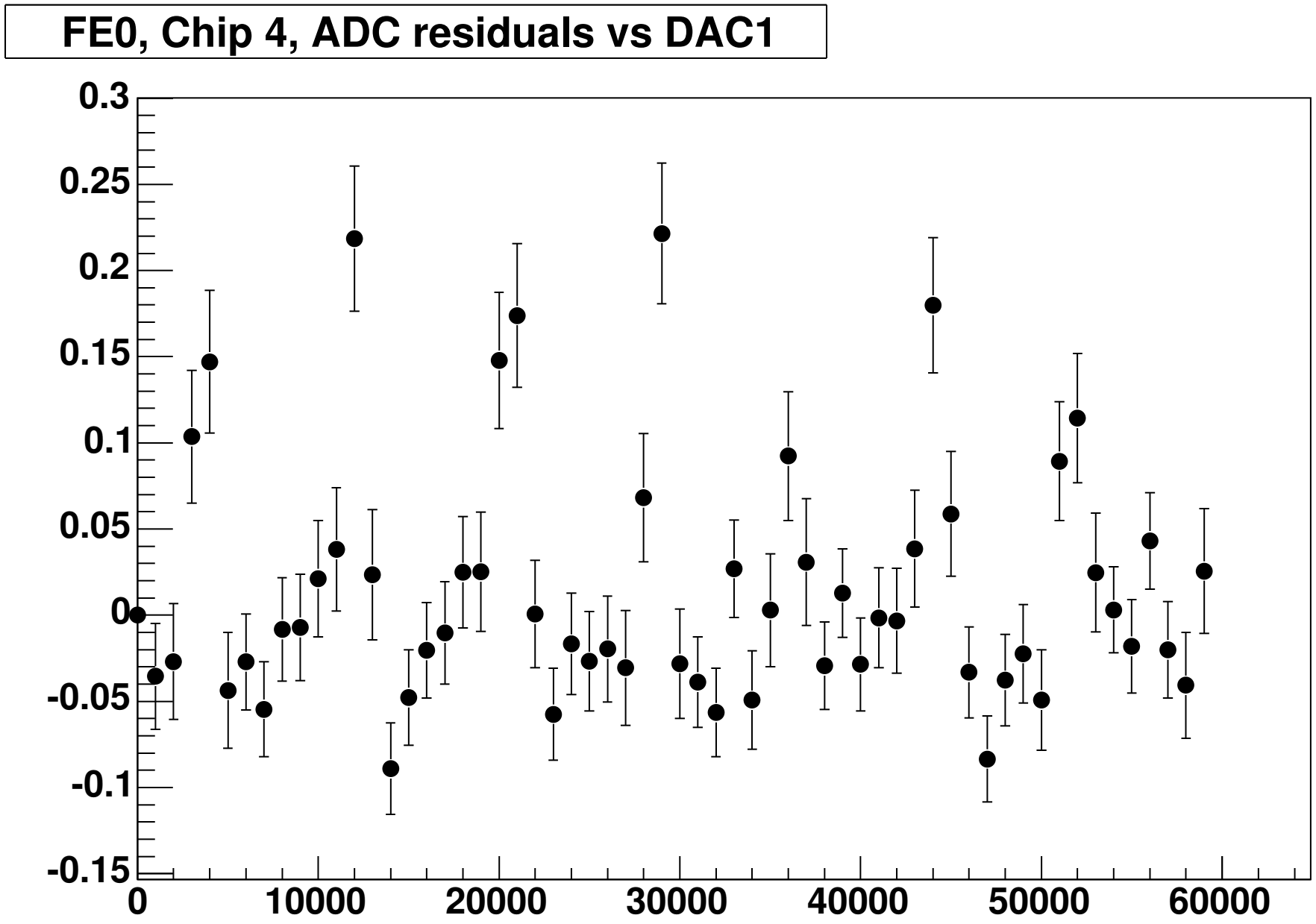

FE0, Chip 4, ADC mean vs DAC0
χ² / ndf 1.123e+05 / 57
p0 -30.71 ± 0.007304
p1 0.231 ± 2.518e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

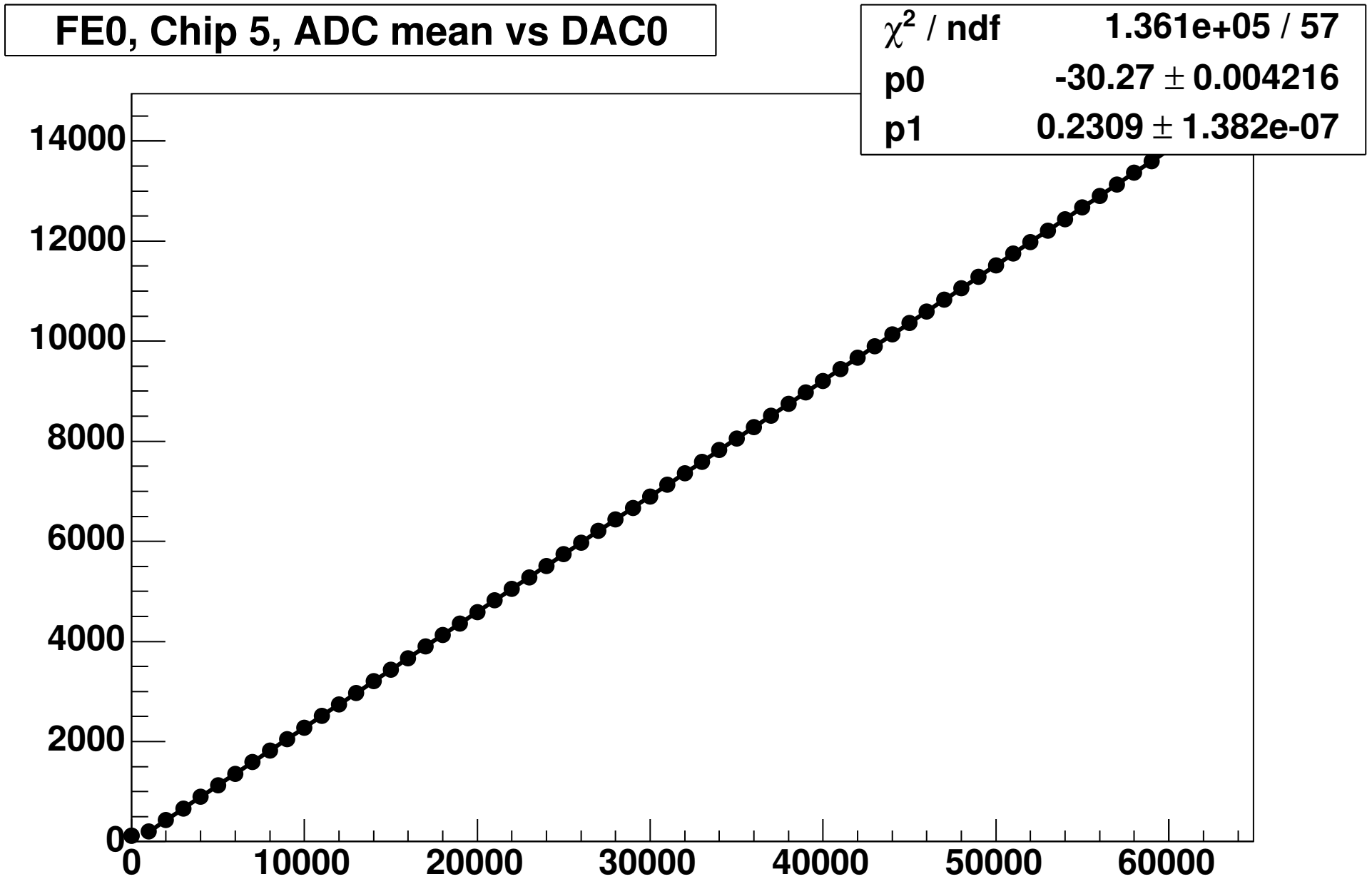

FE0, Chip 4, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

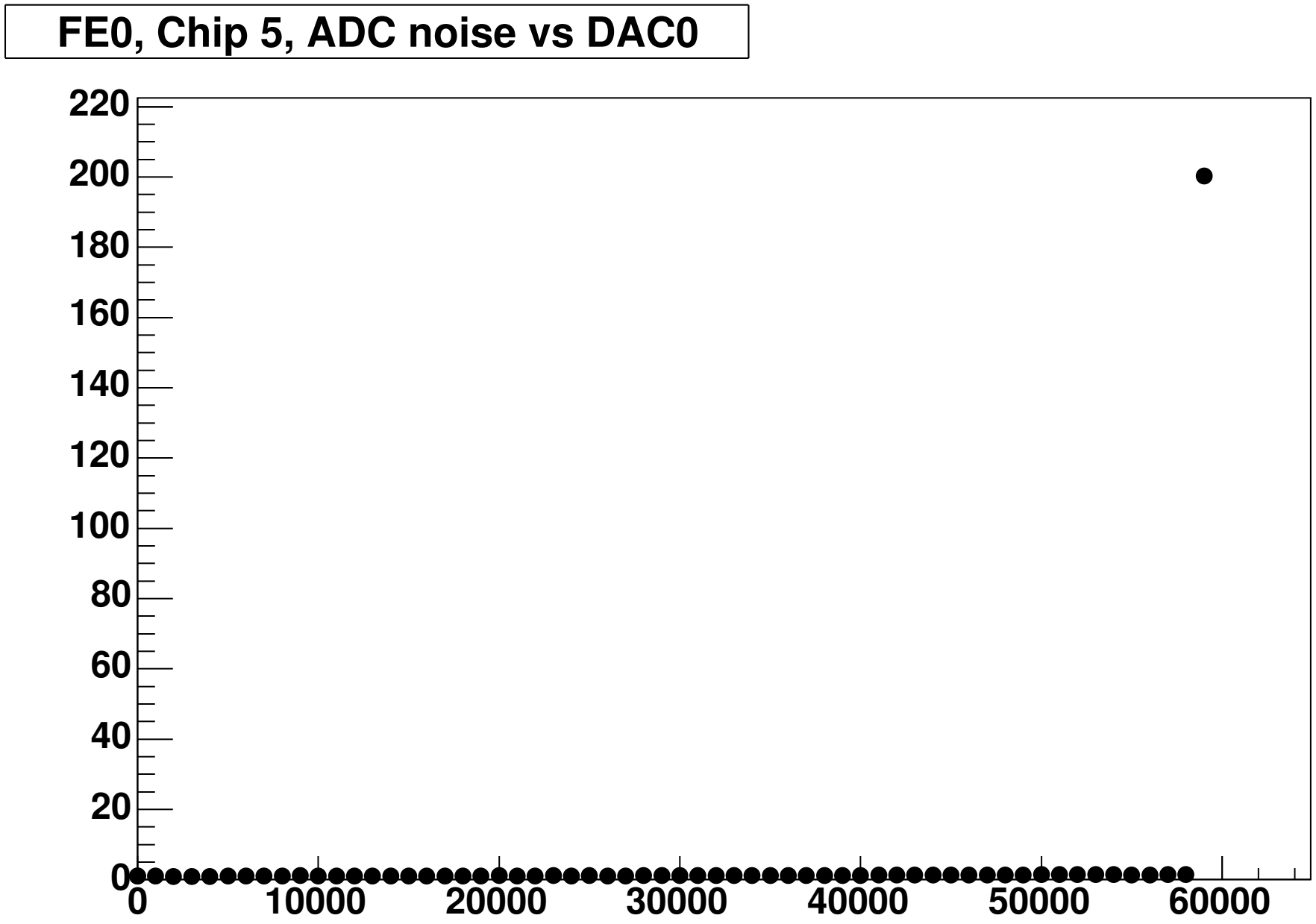

FE0, Chip 4, ADC residuals vs DAC0
4
2
0
-2
-4
-6
0
10000
20000
30000
40000
50000
60000

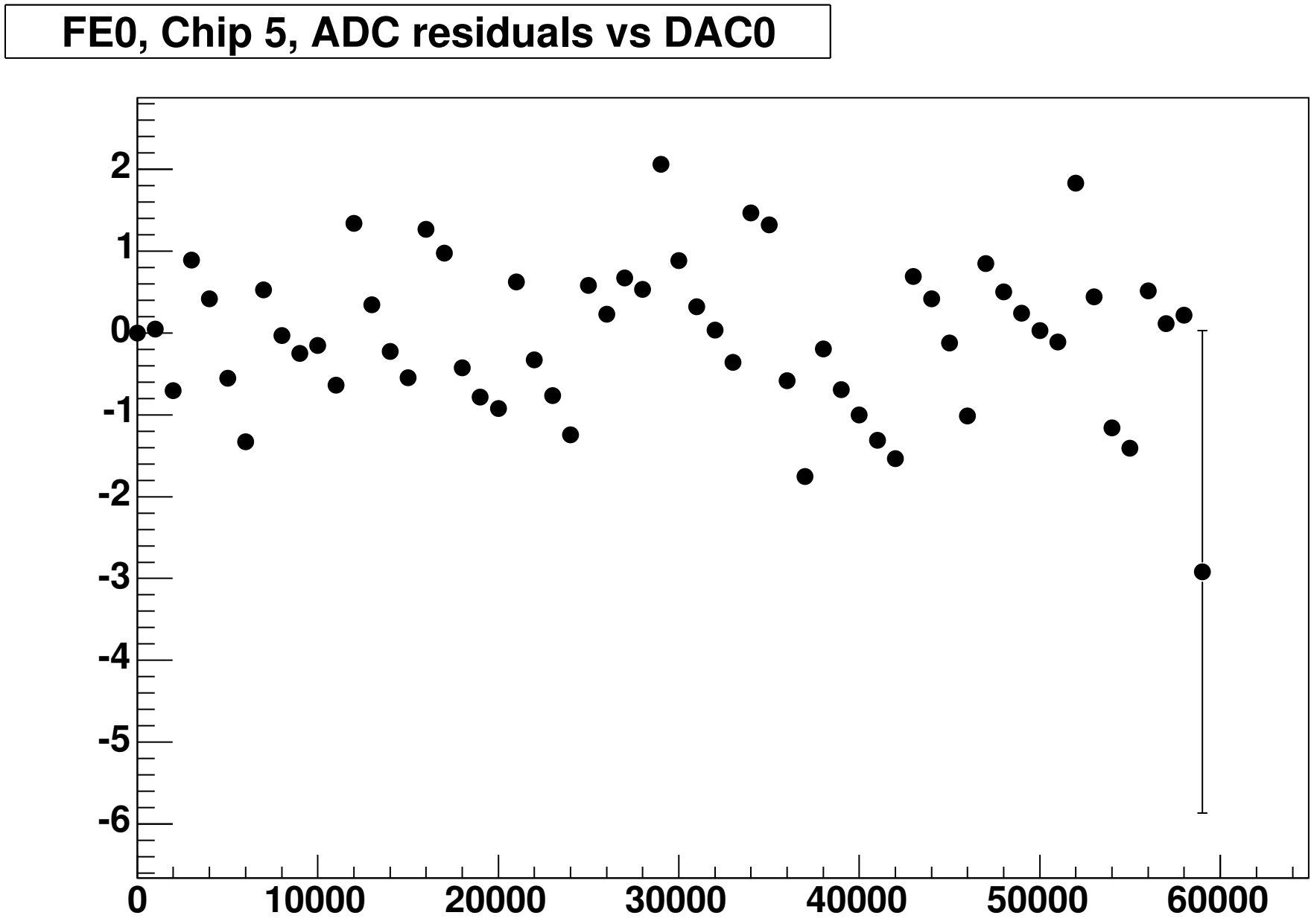

FE0, Chip 4, ADC mean vs DAC1
χ² / ndf 231.5 / 57
p0 121.3 ± 0.008411
p1 -4.936e-07 ± 2.375e-07
121.55
121.5
121.45
121.4
121.35
121.3
121.25
121.2
121.15
0
10000
20000
30000
40000
50000
60000

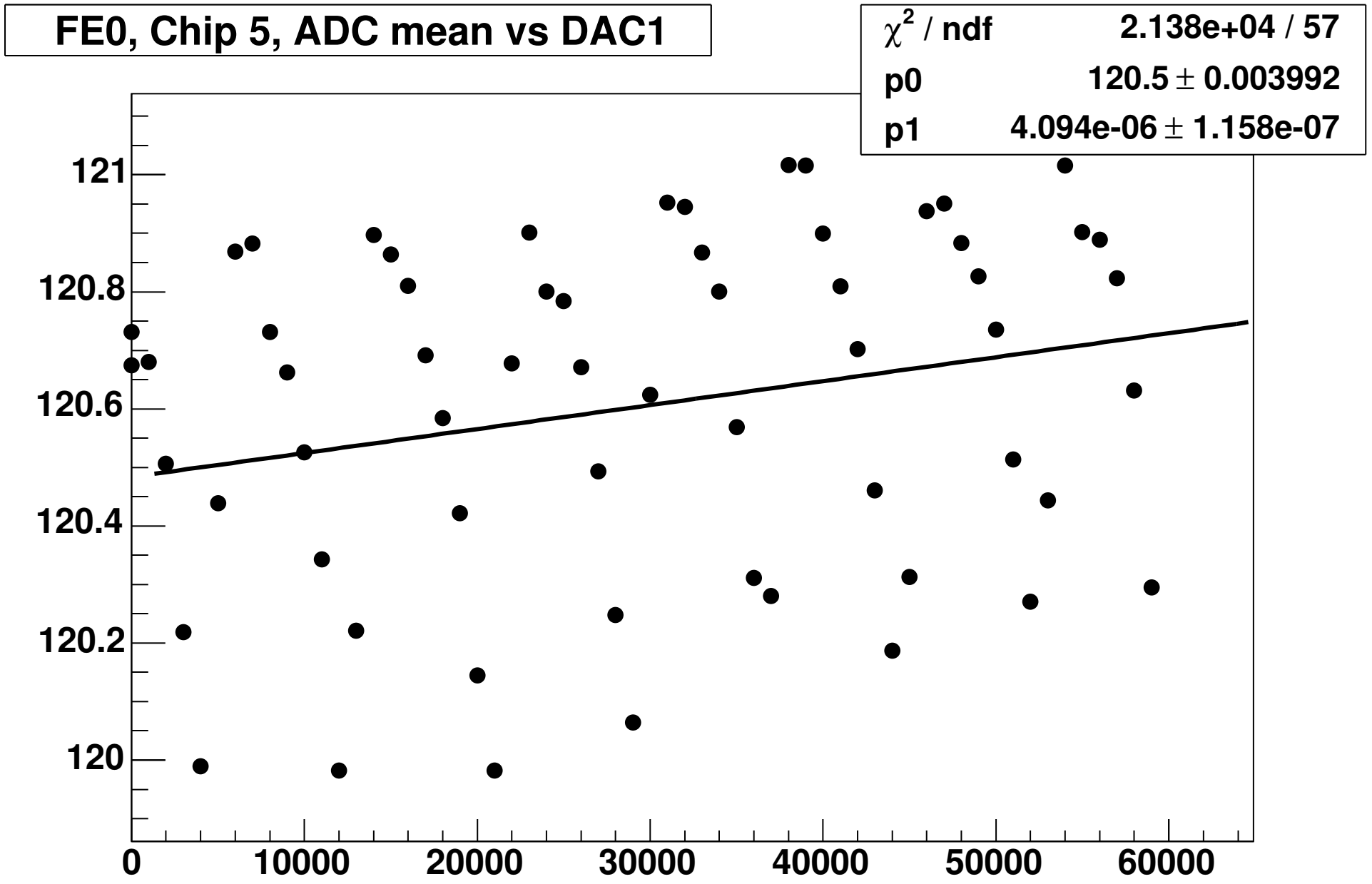

FE0, Chip 4, ADC noise vs DAC1
3
2.8
2.6
2.4
2.2
2
1.8
1.6
0
10000
20000
30000
40000
50000
60000

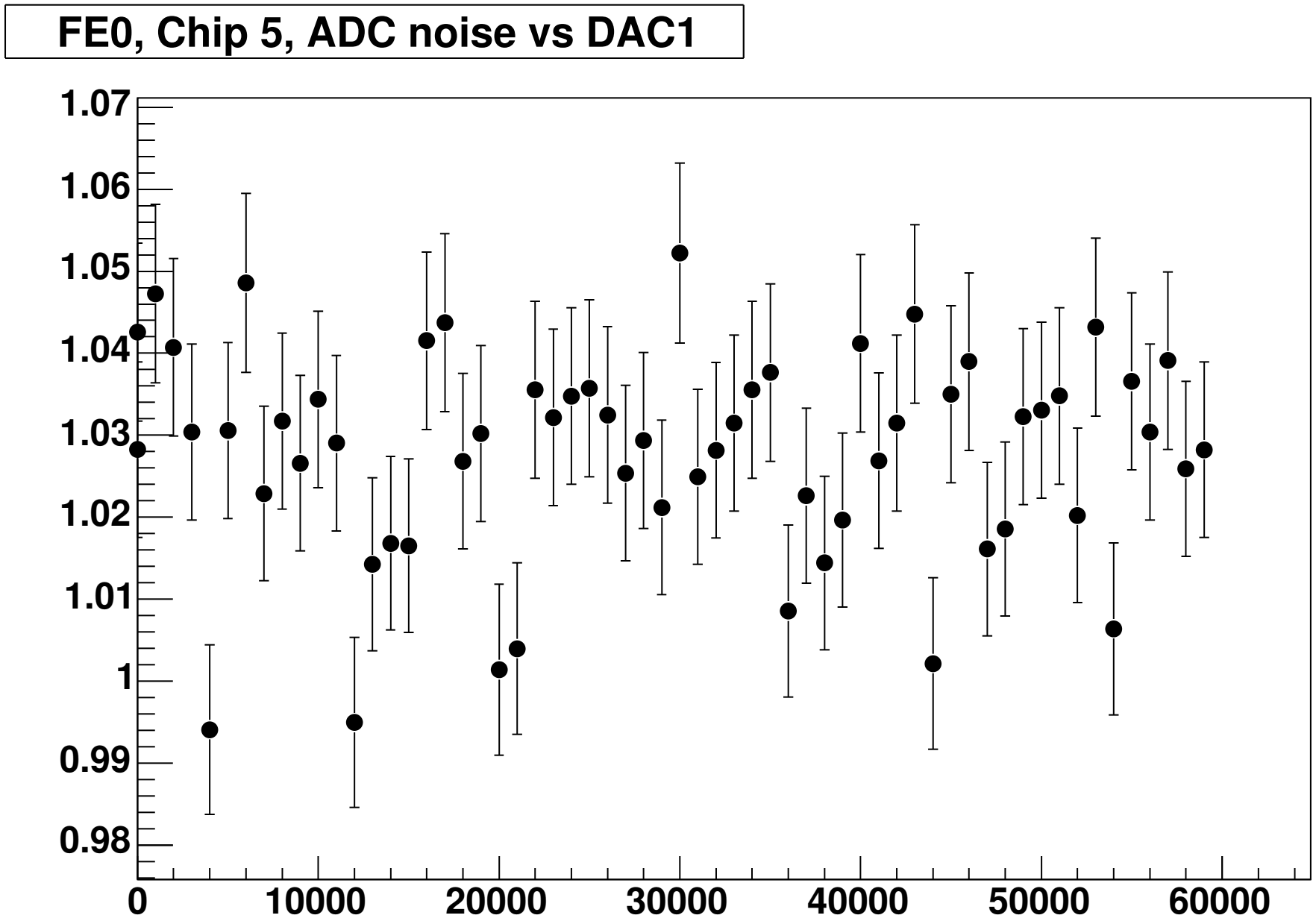

FE0, Chip 4, ADC residuals vs DAC1
0.3
0.25
0.2
0.15
0.1
0.05
0
-0.05
-0.1
-0.15
0
10000
20000
30000
40000
50000
60000

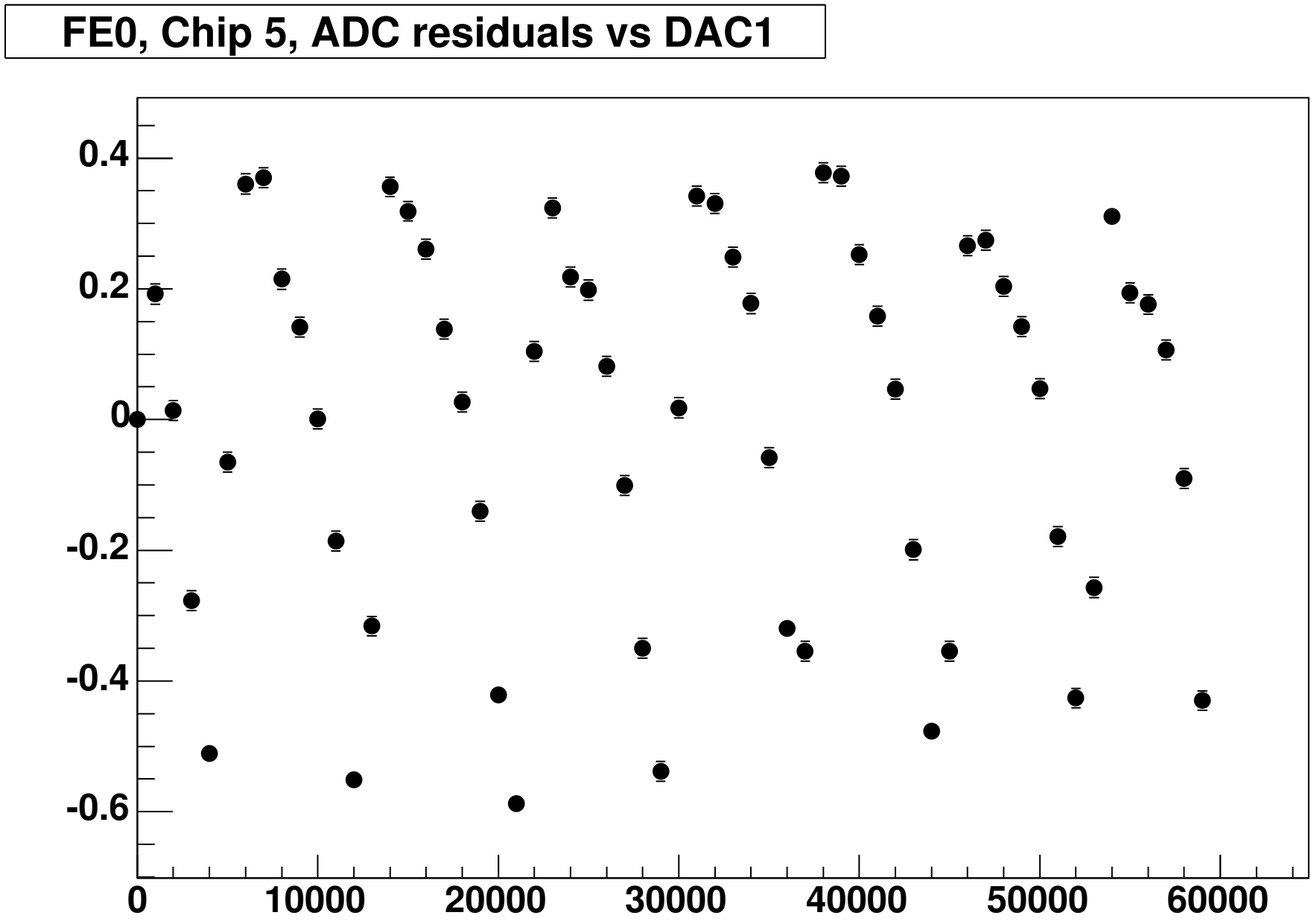

FE0, Chip 5, ADC mean vs DAC0
χ² / ndf 1.361e+05 / 57
p0 -30.27 ± 0.004216
p1 0.2309 ± 1.382e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

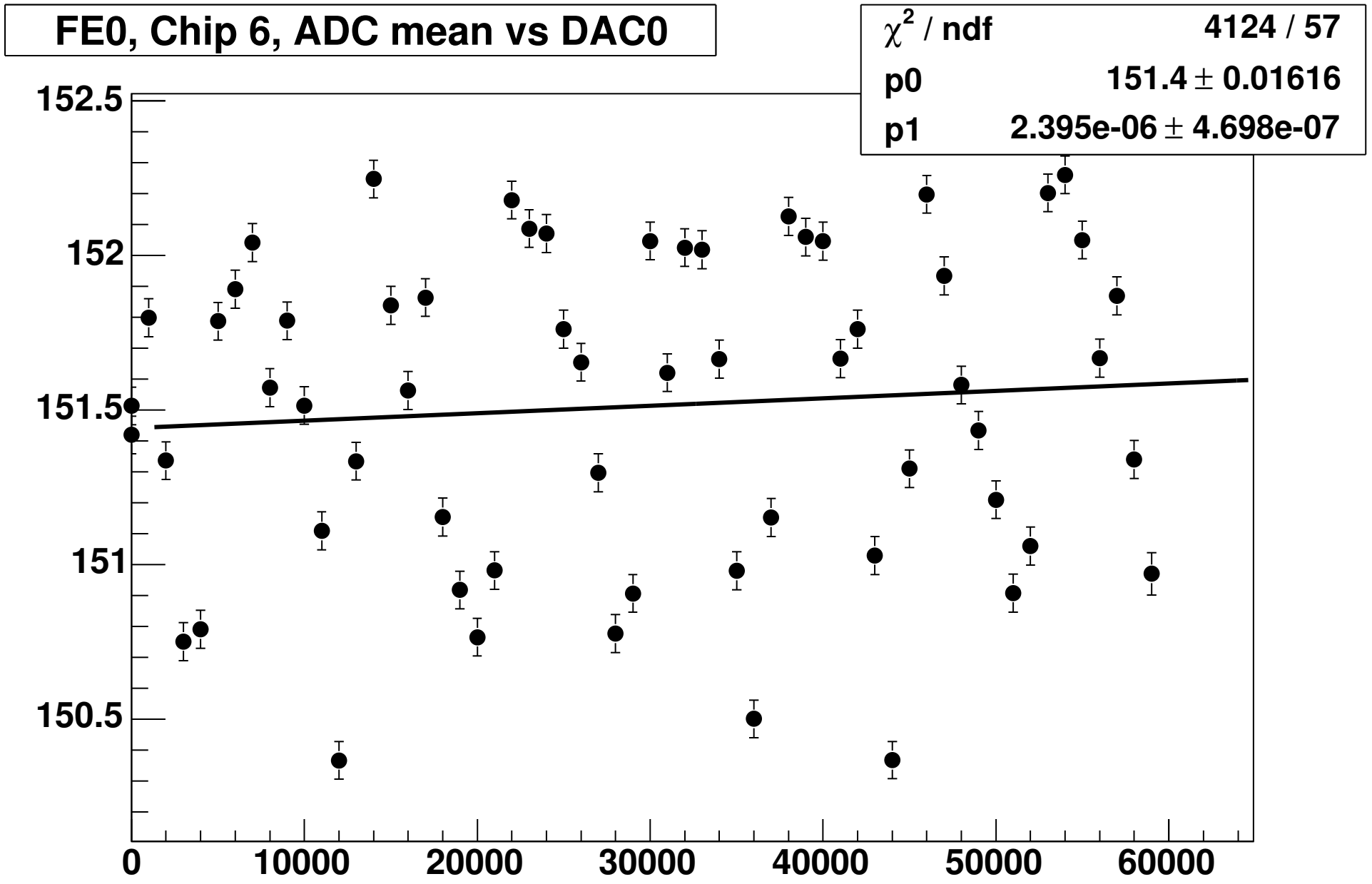

FE0, Chip 5, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

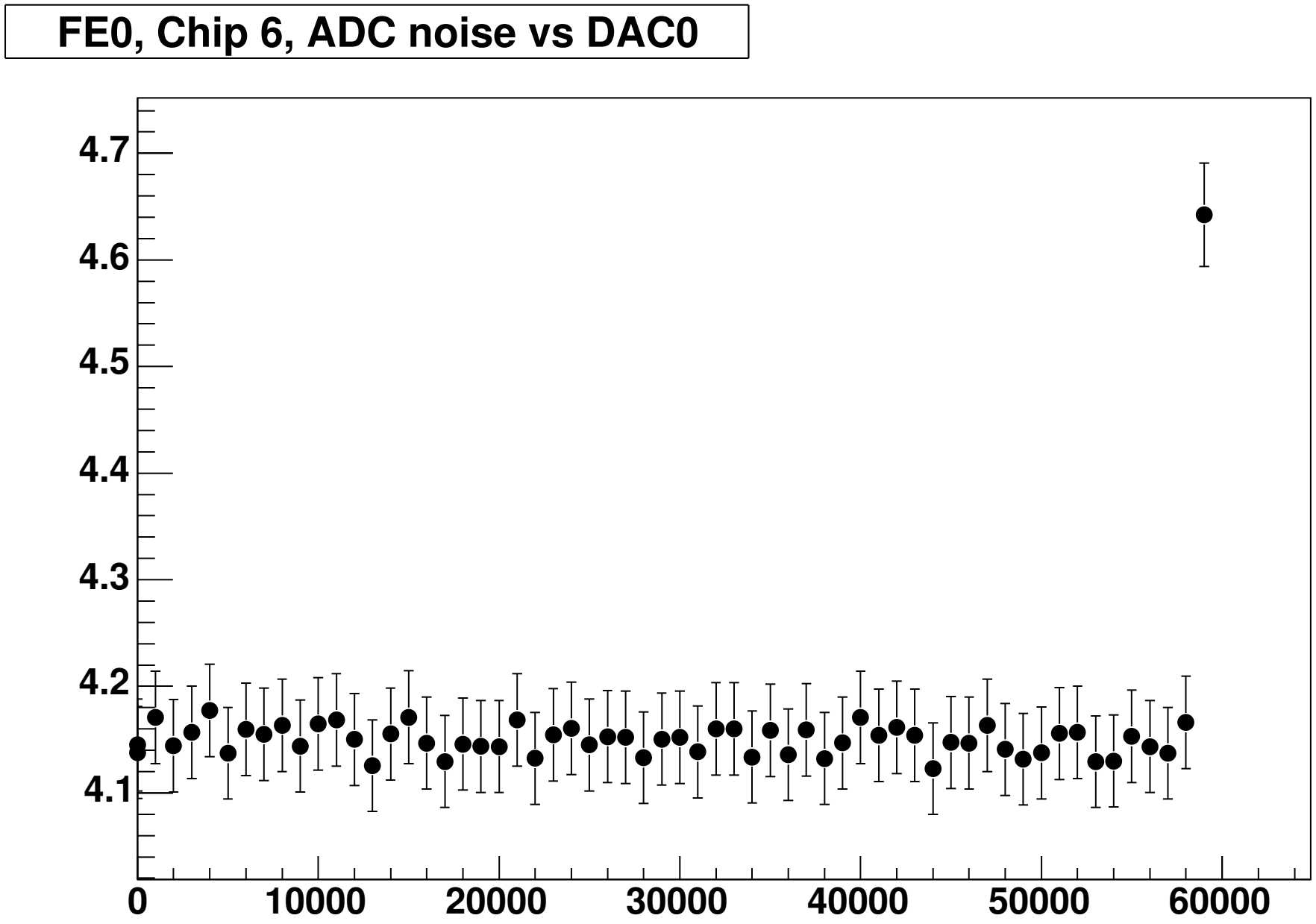

FE0, Chip 5, ADC residuals vs DAC0
2
1
0
-1
-2
-3
-4
-5
-6
0
10000
20000
30000
40000
50000
60000

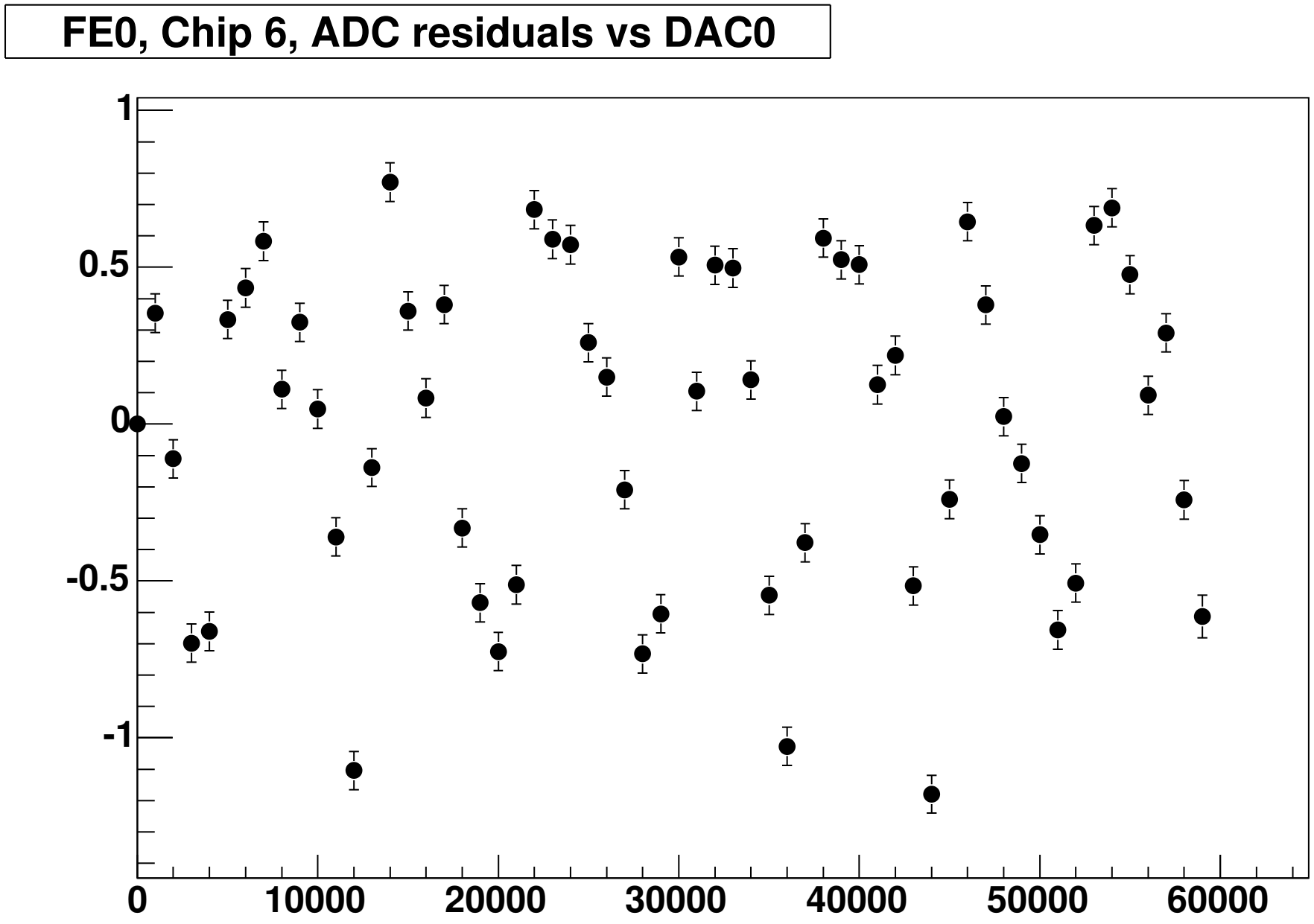

FE0, Chip 5, ADC mean vs DAC1
χ² / ndf 2.138e+04 / 57
p0 120.5 ± 0.003992
p1 4.094e-06 ± 1.158e-07
121
120.8
120.6
120.4
120.2
120
0
10000
20000
30000
40000
50000
60000

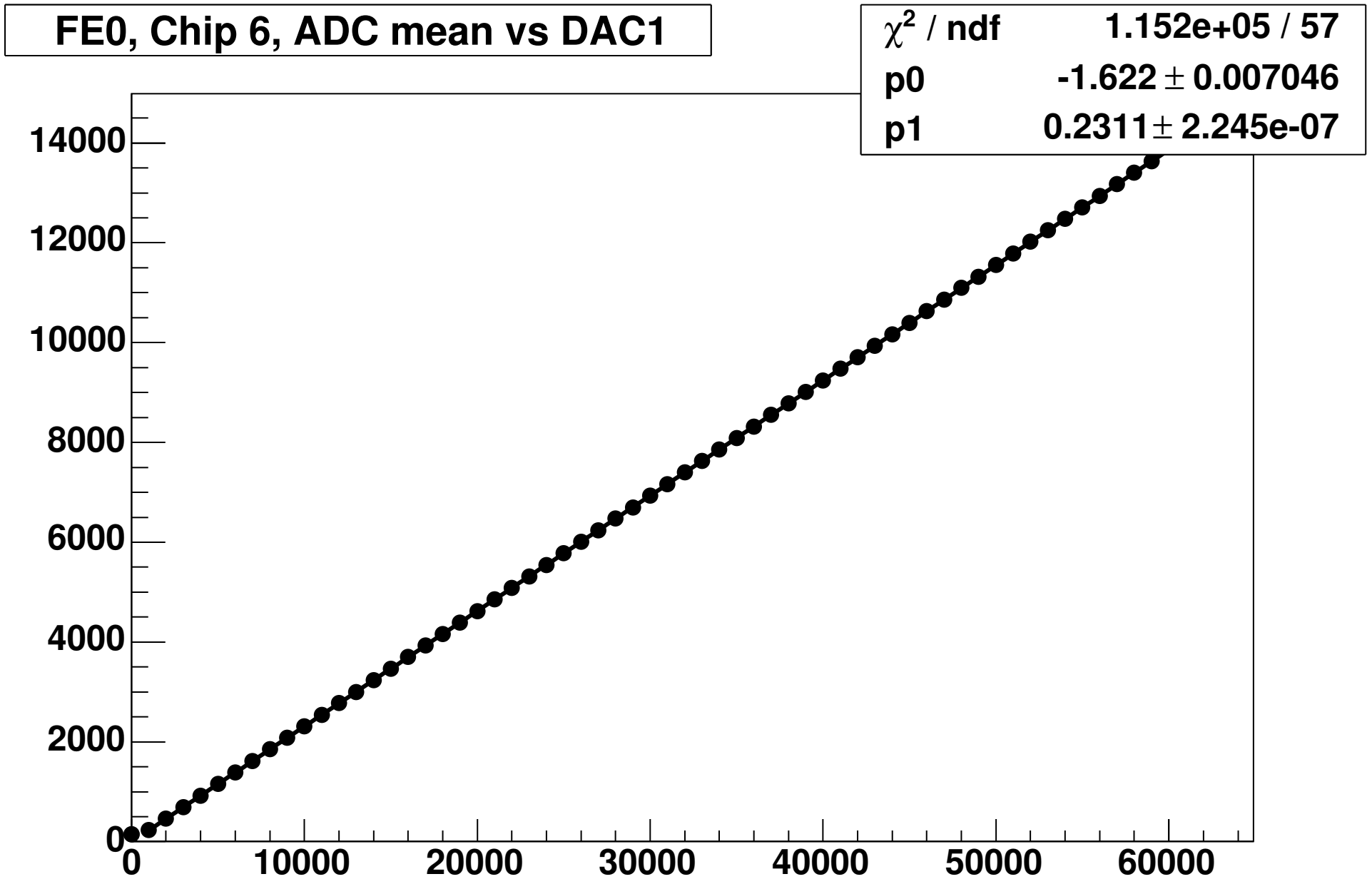

FE0, Chip 5, ADC noise vs DAC1
1.07
1.06
1.05
1.04
1.03
1.02
1.01
1
0.99
0.98
0
10000
20000
30000
40000
50000
60000

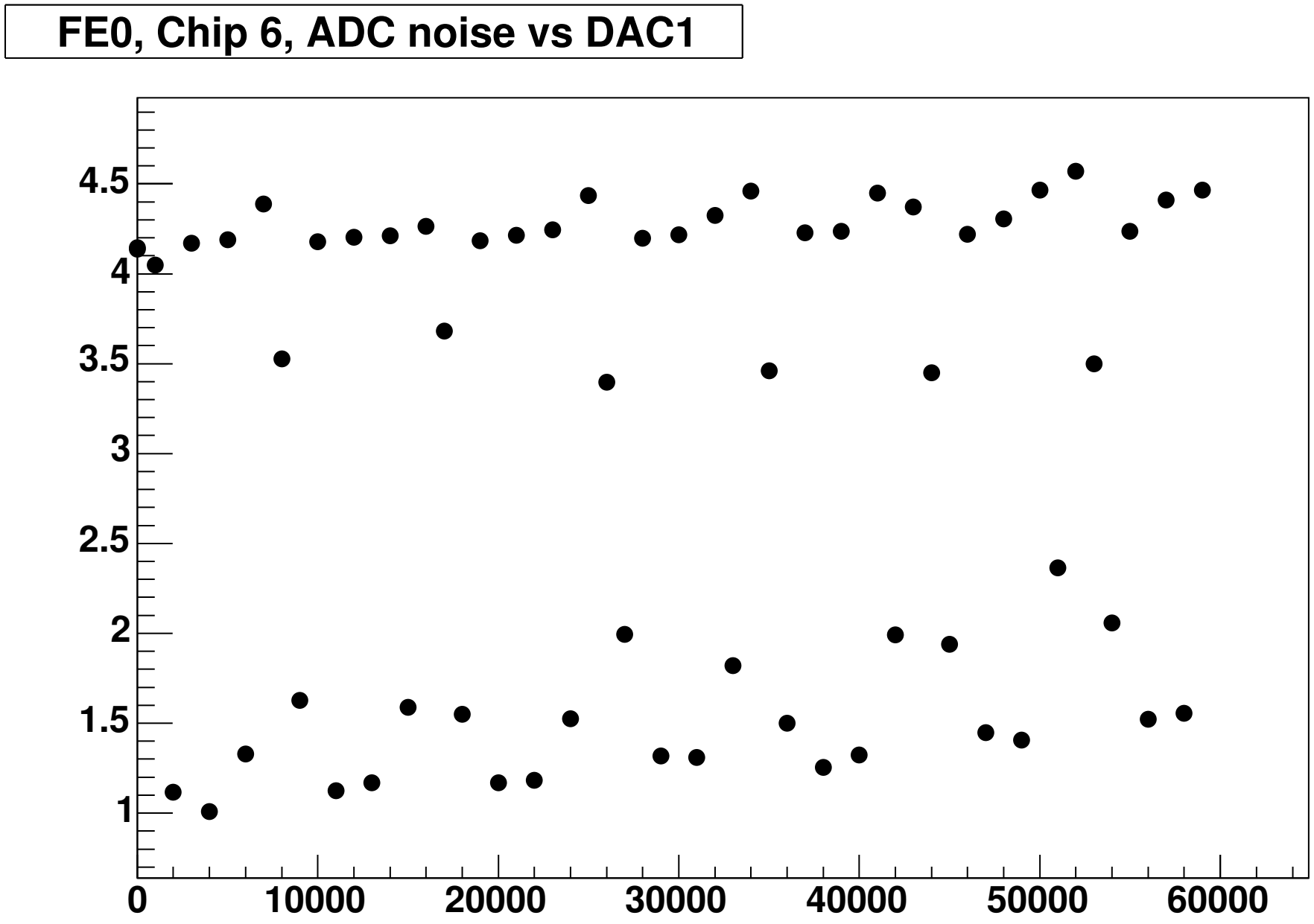

FE0, Chip 5, ADC residuals vs DAC1
0.4
0.2
0
-0.2
-0.4
-0.6
0
10000
20000
30000
40000
50000
60000

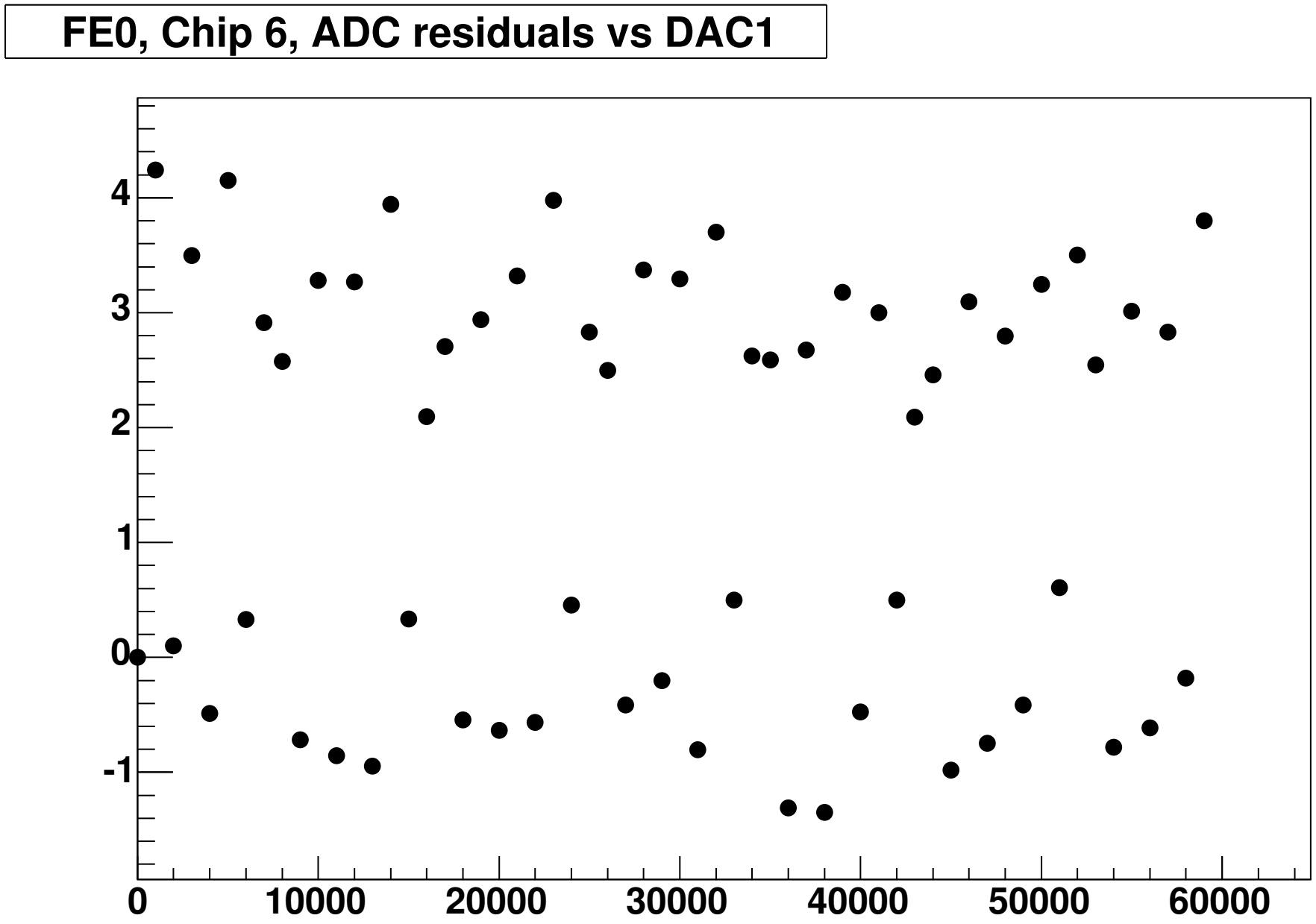

FE0, Chip 6, ADC mean vs DAC0
χ² / ndf 4124 / 57
p0 151.4 ± 0.01616
p1 2.395e-06 ± 4.698e-07
152.5
152
151.5
151
150.5
0
10000
20000
30000
40000
50000
60000

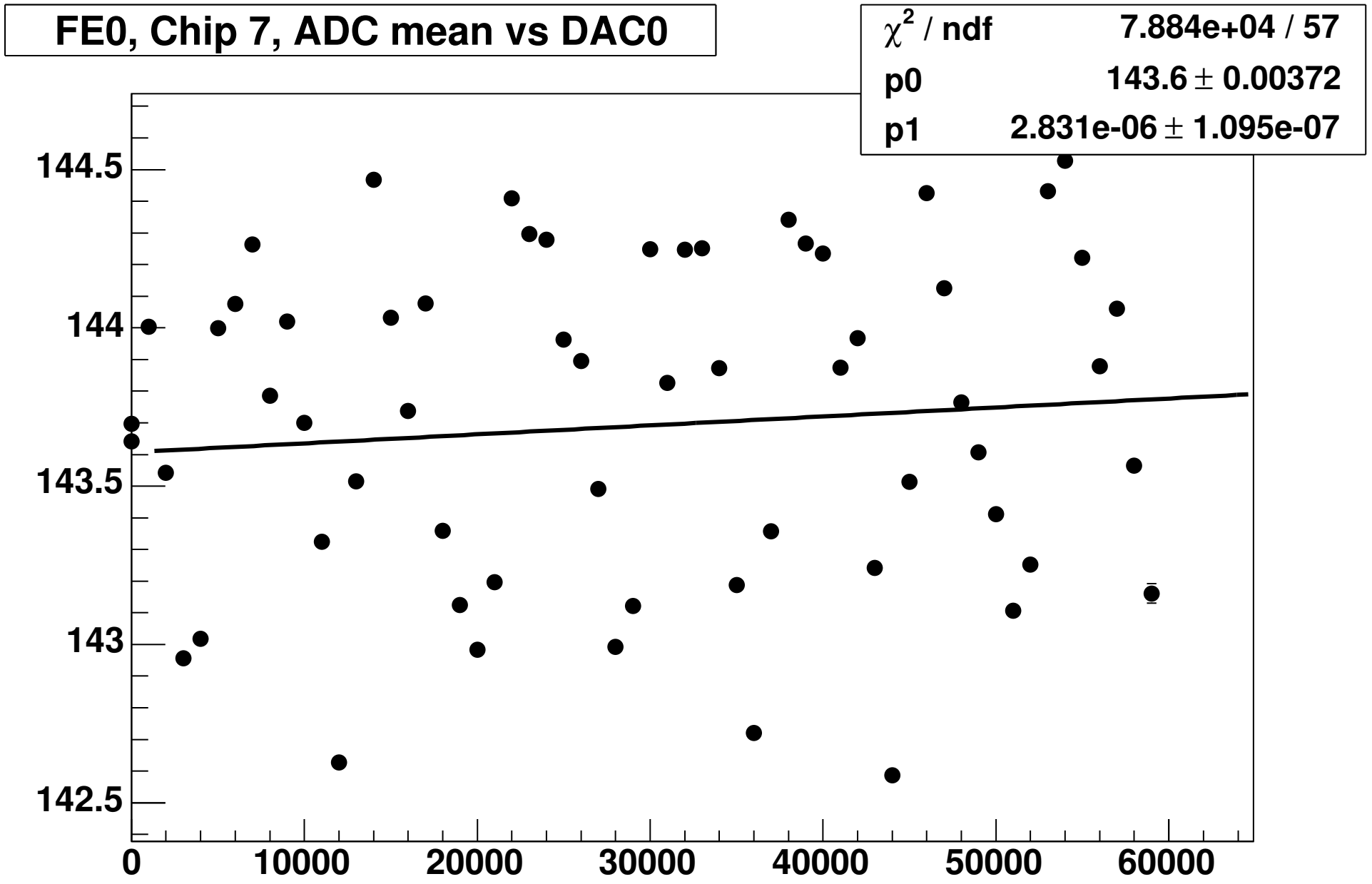

FE0, Chip 6, ADC noise vs DAC0
4.7
4.6
4.5
4.4
4.3
4.2
4.1
0
10000
20000
30000
40000
50000
60000

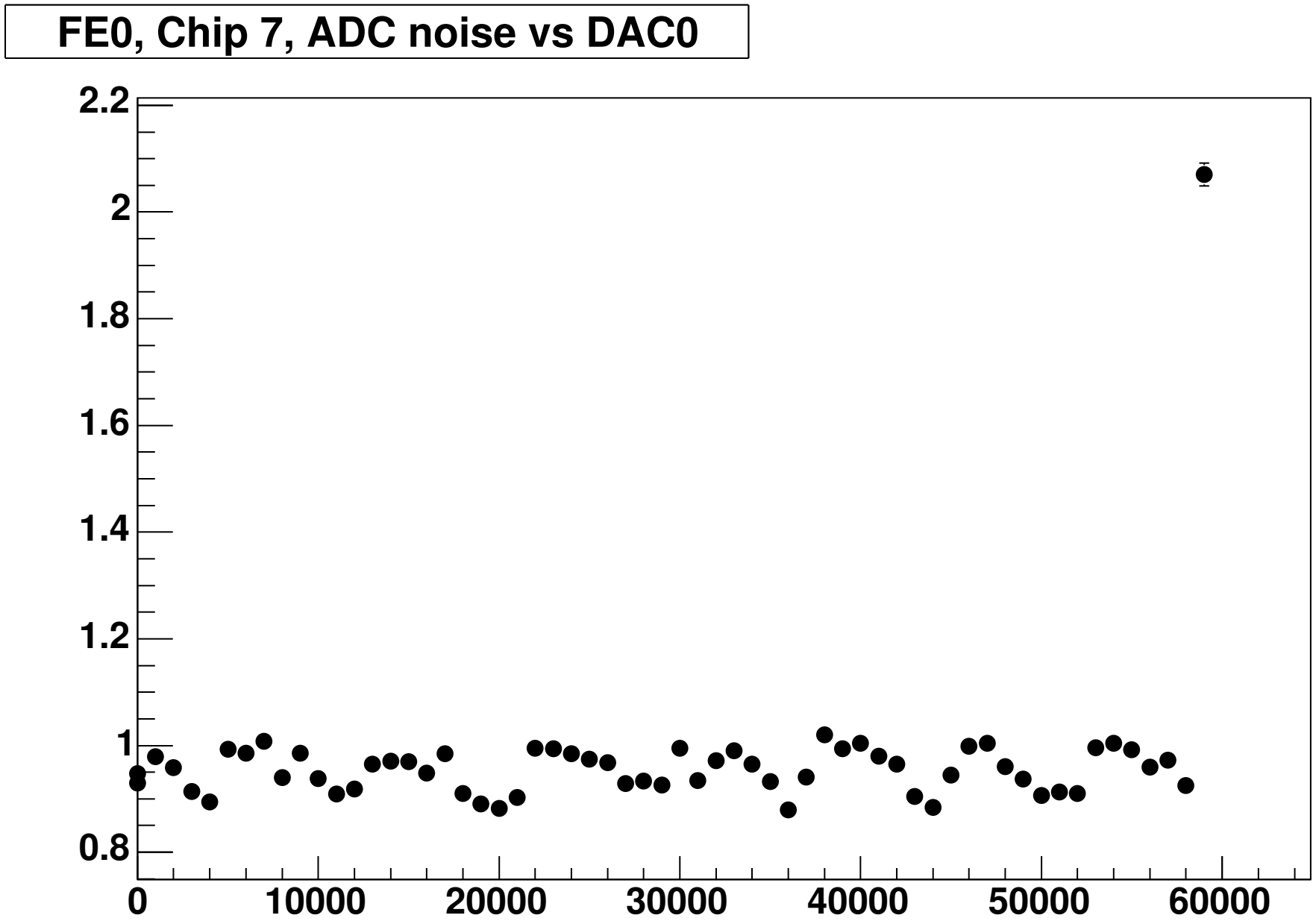

FE0, Chip 6, ADC residuals vs DAC0
1
0.5
0
-0.5
-1
0
10000
20000
30000
40000
50000
60000

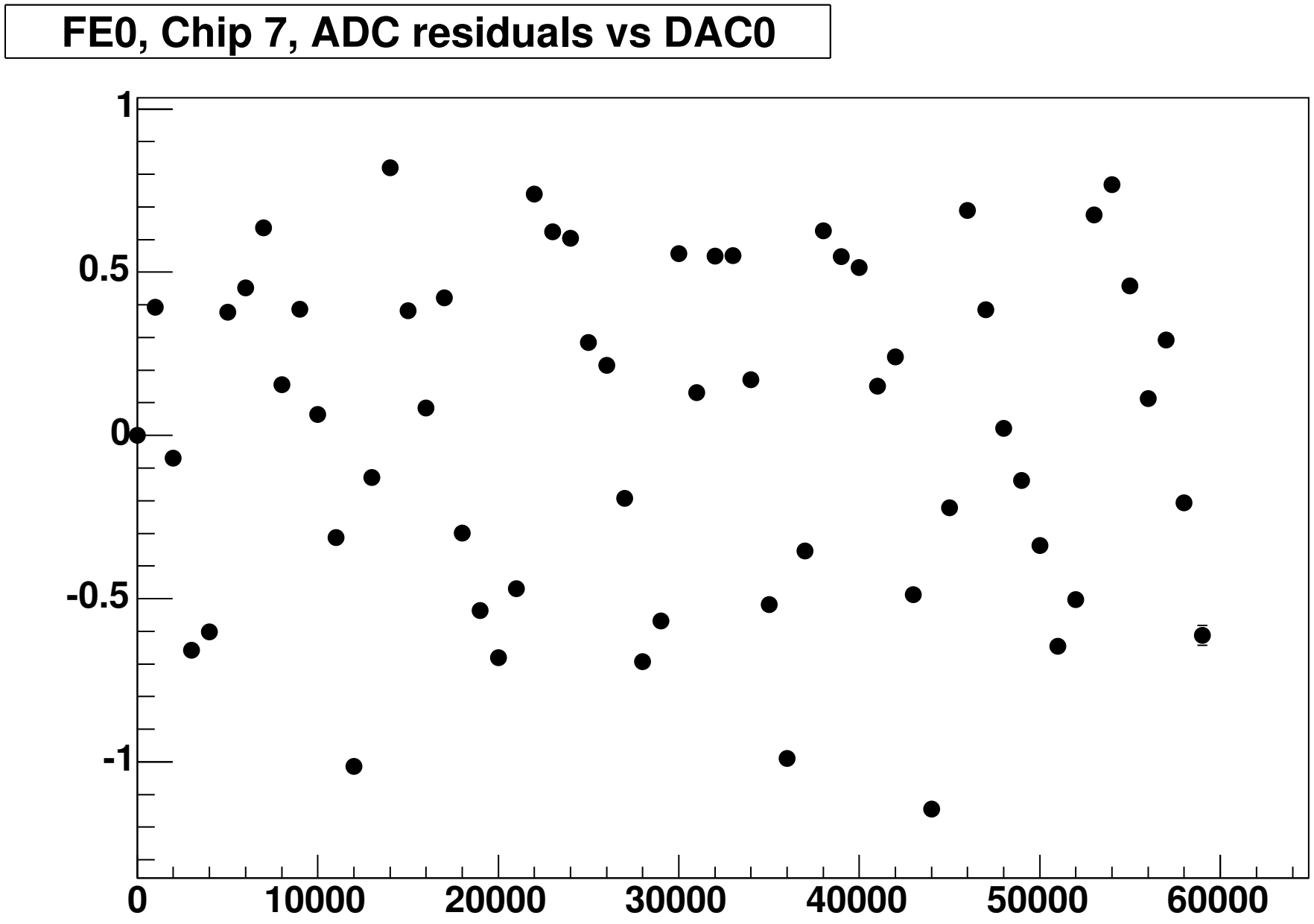

FE0, Chip 6, ADC mean vs DAC1
χ² / ndf 1.152e+05 / 57
p0 -1.622 ± 0.007046
p1 0.2311 ± 2.245e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

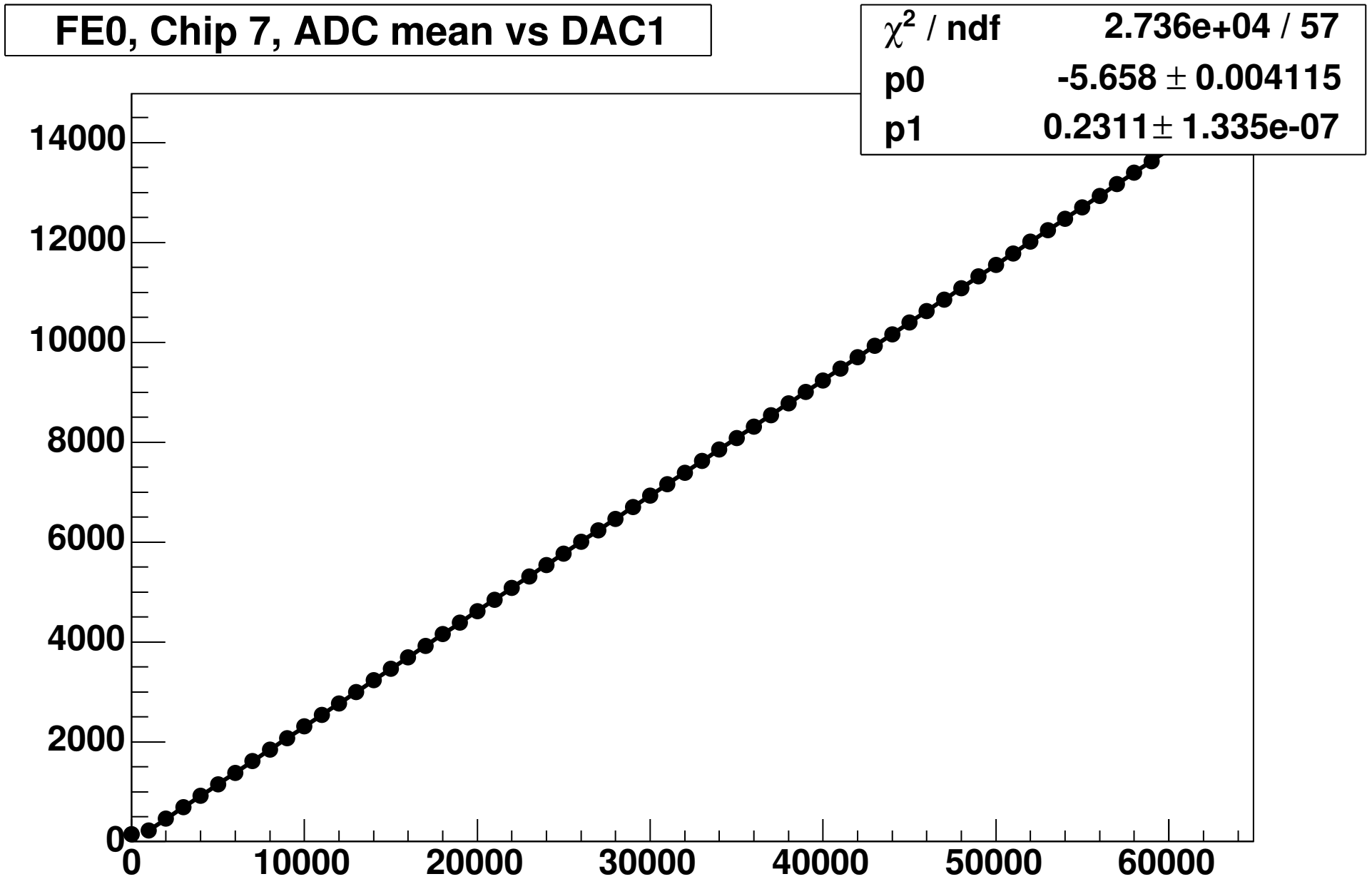

FE0, Chip 6, ADC noise vs DAC1
4.5
4
3.5
3
2.5
2
1.5
1
0
10000
20000
30000
40000
50000
60000

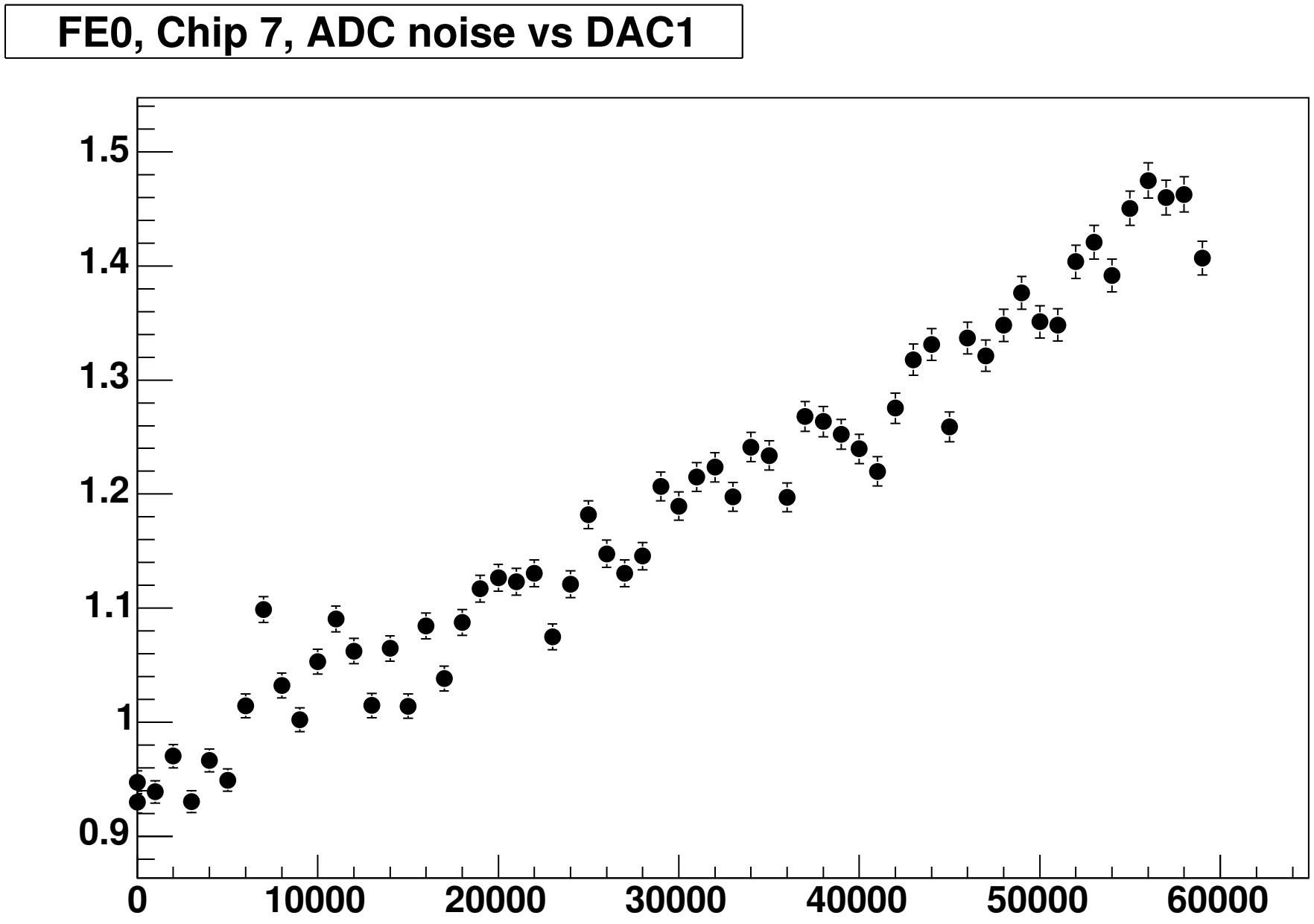

FE0, Chip 6, ADC residuals vs DAC1
4
3
2
1
0
-1
0
10000
20000
30000
40000
50000
60000

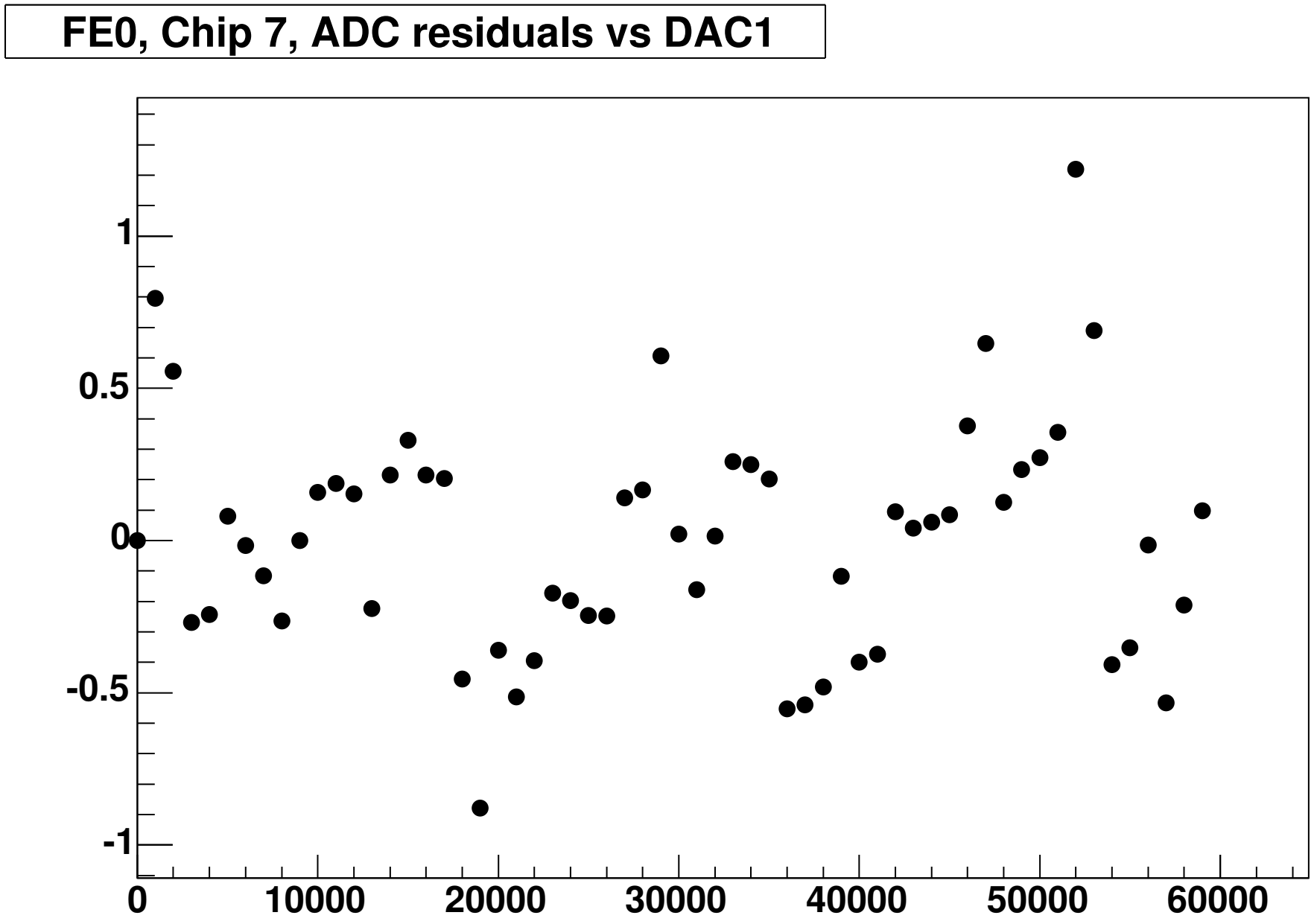

FE0, Chip 7, ADC mean vs DAC0
χ² / ndf 7.884e+04 / 57
p0 143.6 ± 0.00372
p1 2.831e-06 ± 1.095e-07
144.5
144
143.5
143
142.5
0
10000
20000
30000
40000
50000
60000

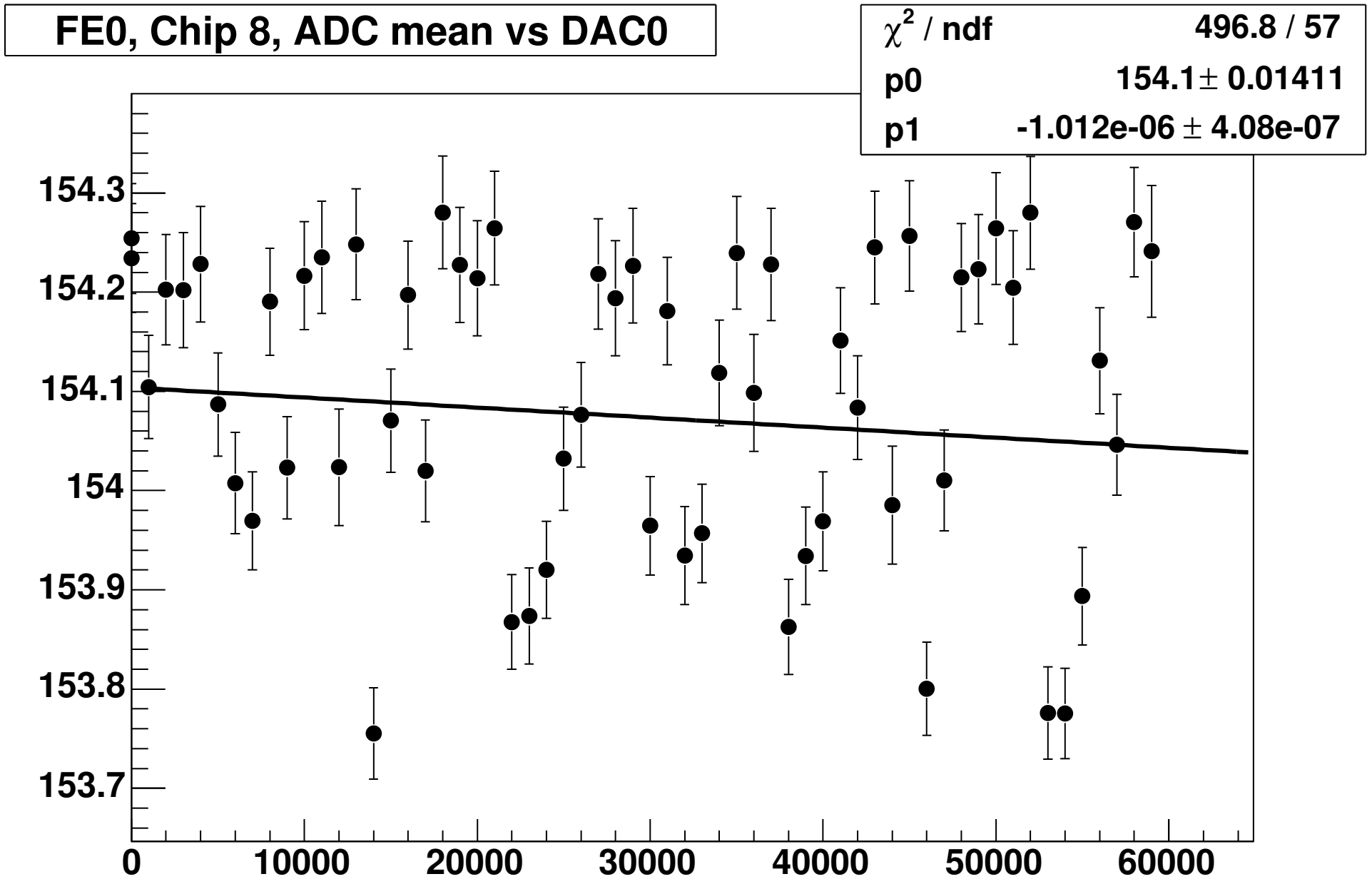

FE0, Chip 7, ADC noise vs DAC0
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0
10000
20000
30000
40000
50000
60000

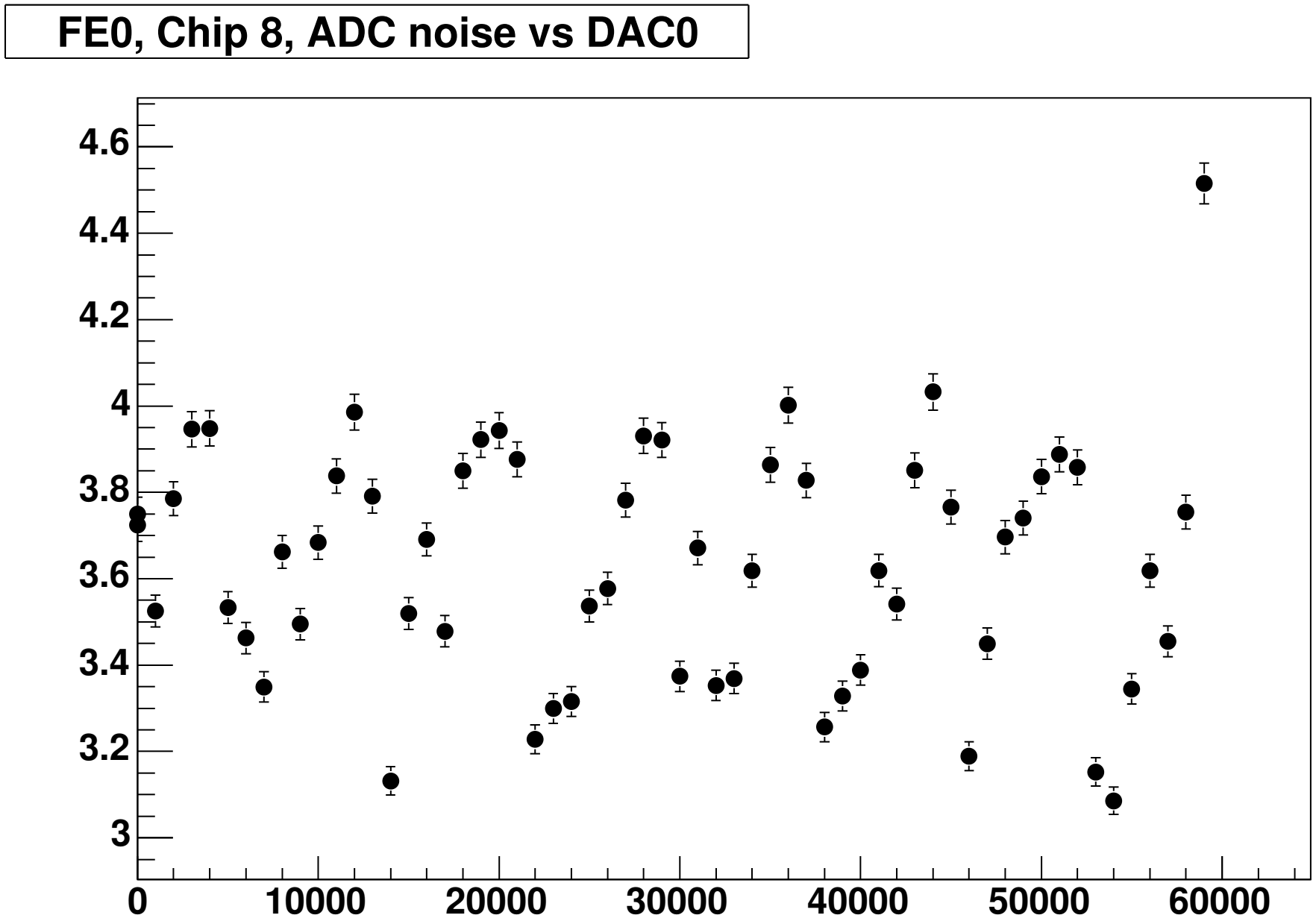

FE0, Chip 7, ADC residuals vs DAC0
1
0.5
0
-0.5
-1
0
10000
20000
30000
40000
50000
60000

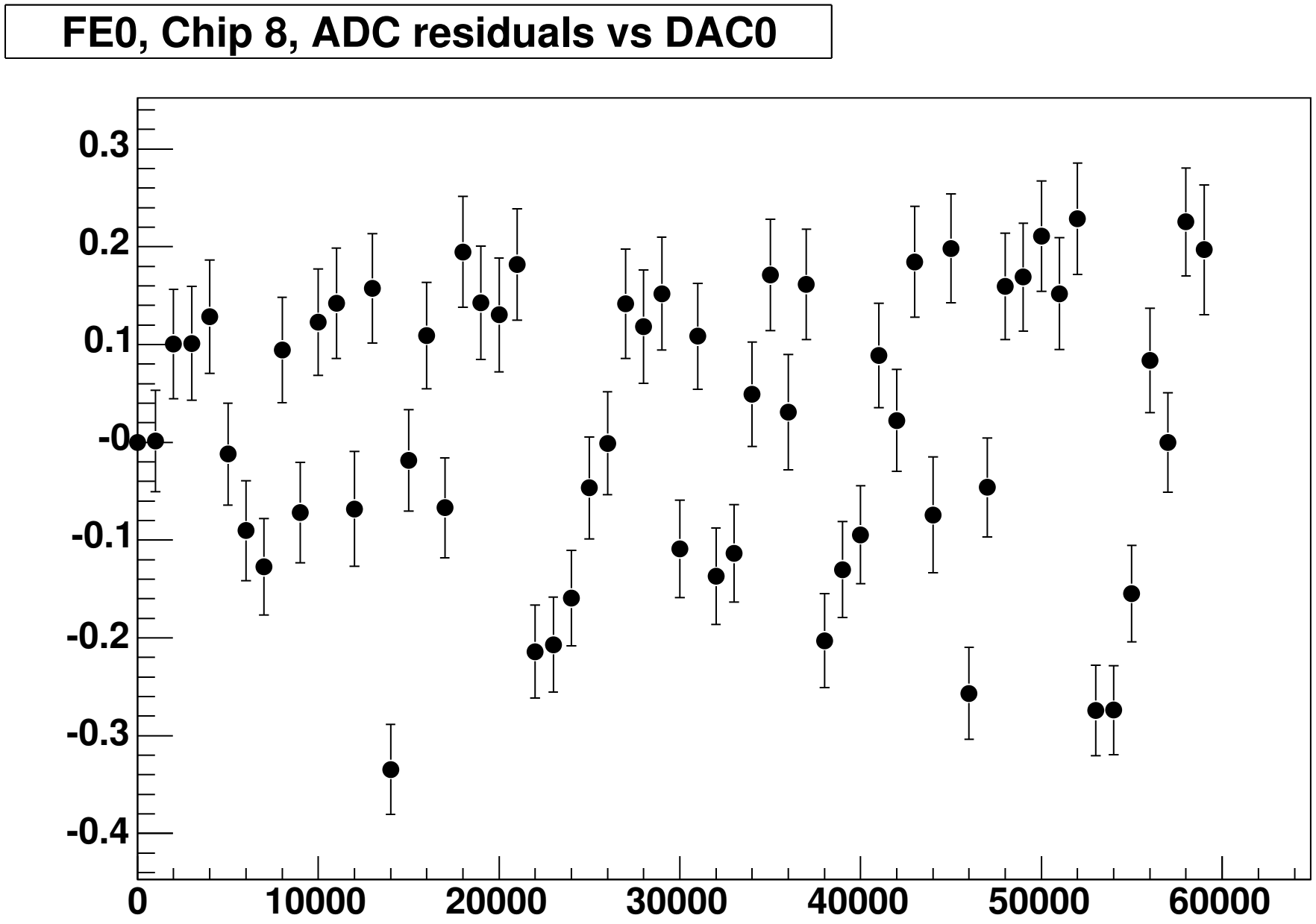

FE0, Chip 7, ADC mean vs DAC1
χ² / ndf 2.736e+04 / 57
p0 -5.658 ± 0.004115
p1 0.2311 ± 1.335e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

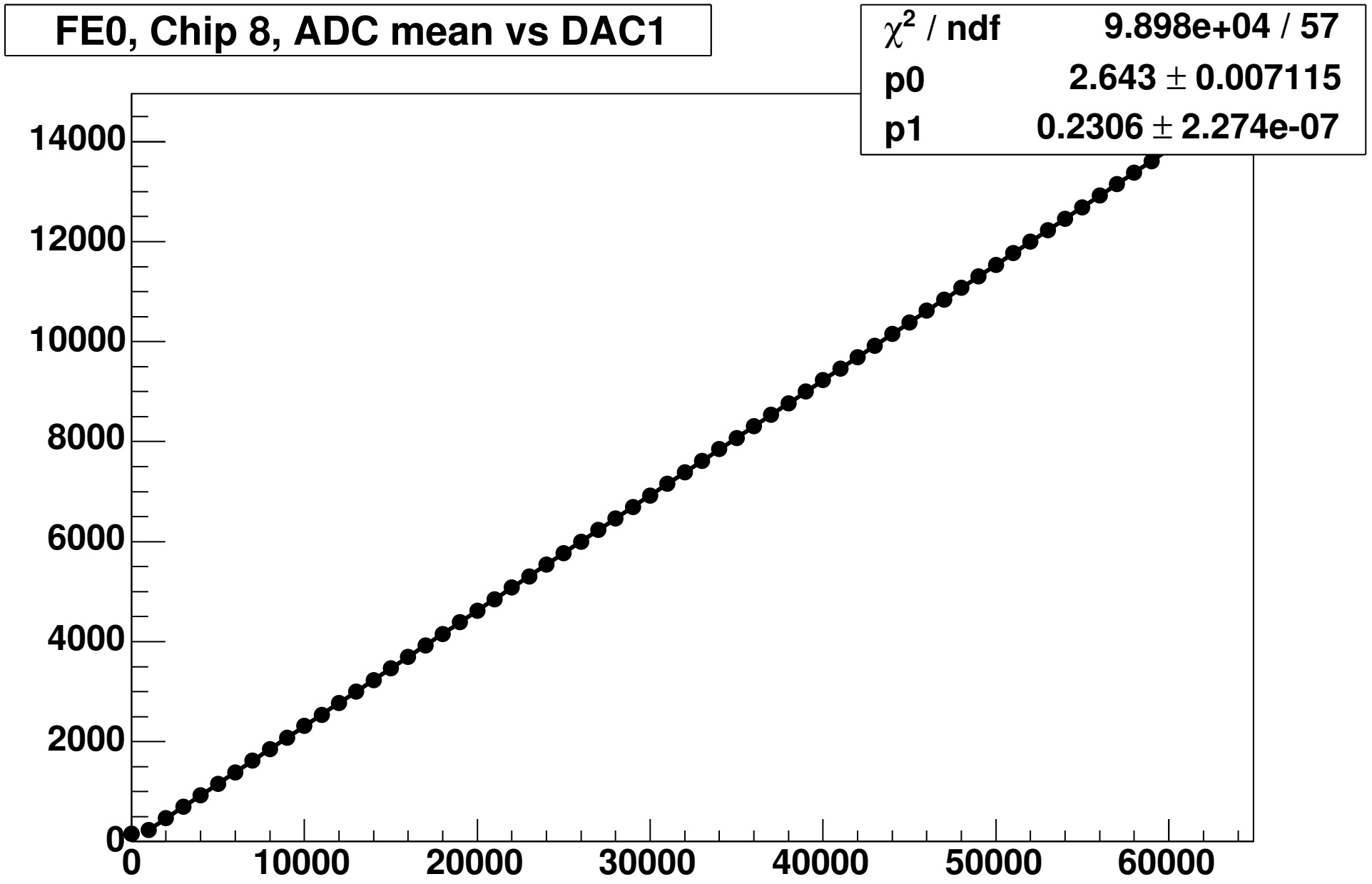

FE0, Chip 7, ADC noise vs DAC1
1.5
1.4
1.3
1.2
1.1
1
0.9
0
10000
20000
30000
40000
50000
60000

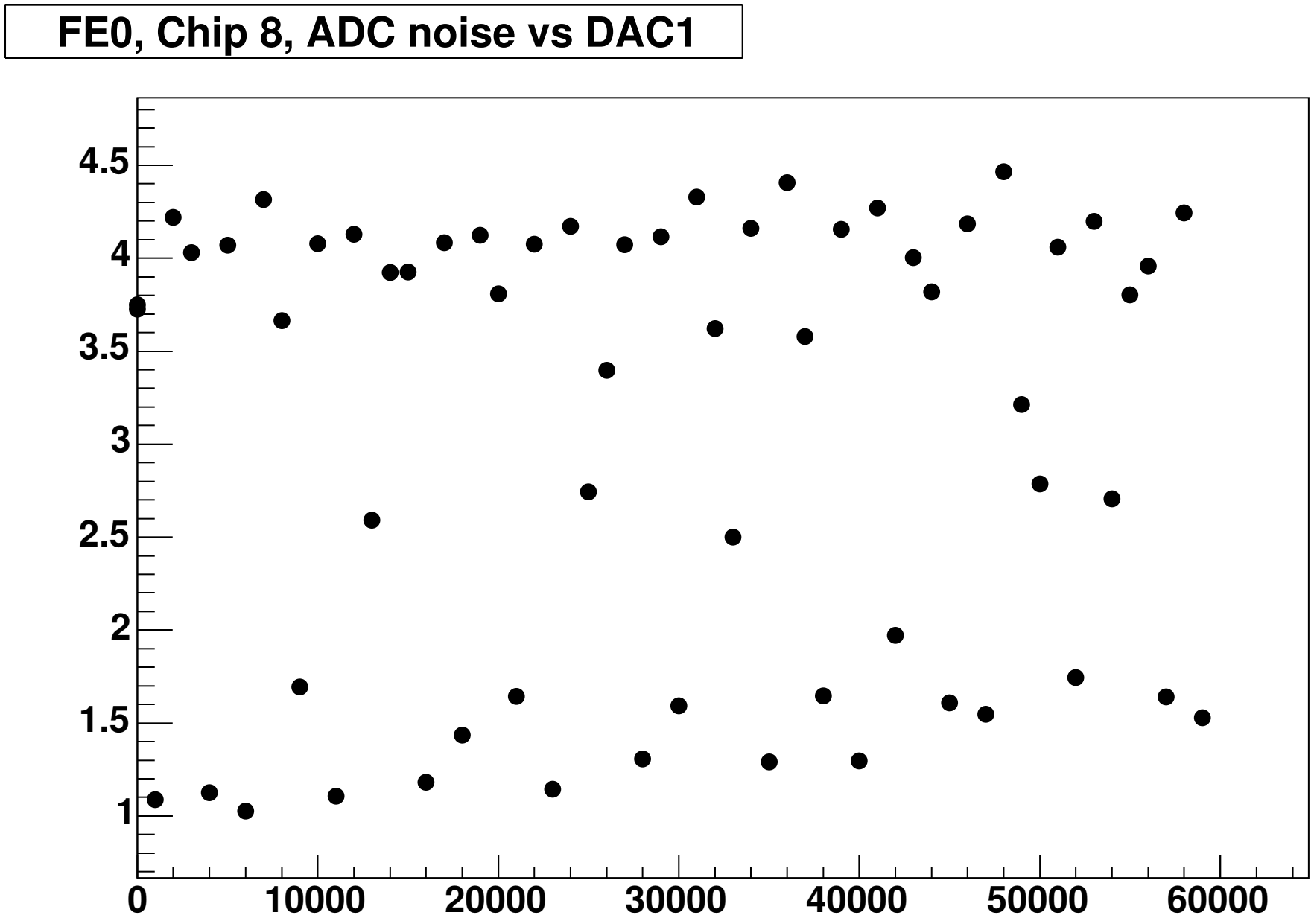

FE0, Chip 7, ADC residuals vs DAC1
1
0.5
0
-0.5
-1
0
10000
20000
30000
40000
50000
60000

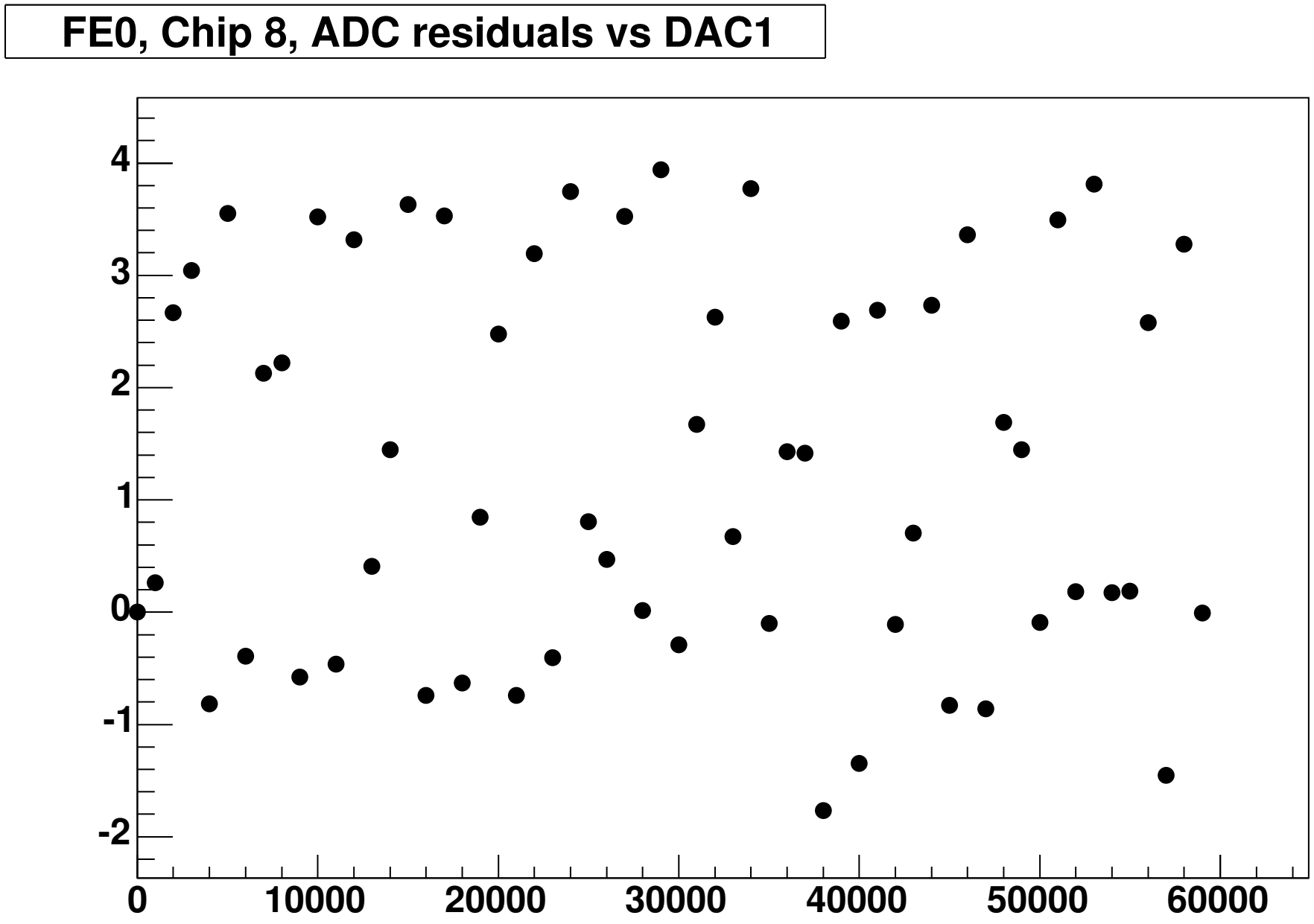

FE0, Chip 8, ADC mean vs DAC0
χ² / ndf 496.8 / 57
p0 154.1 ± 0.01411
p1 -1.012e-06 ± 4.08e-07
154.3
154.2
154.1
154
153.9
153.8
153.7
0
10000
20000
30000
40000
50000
60000

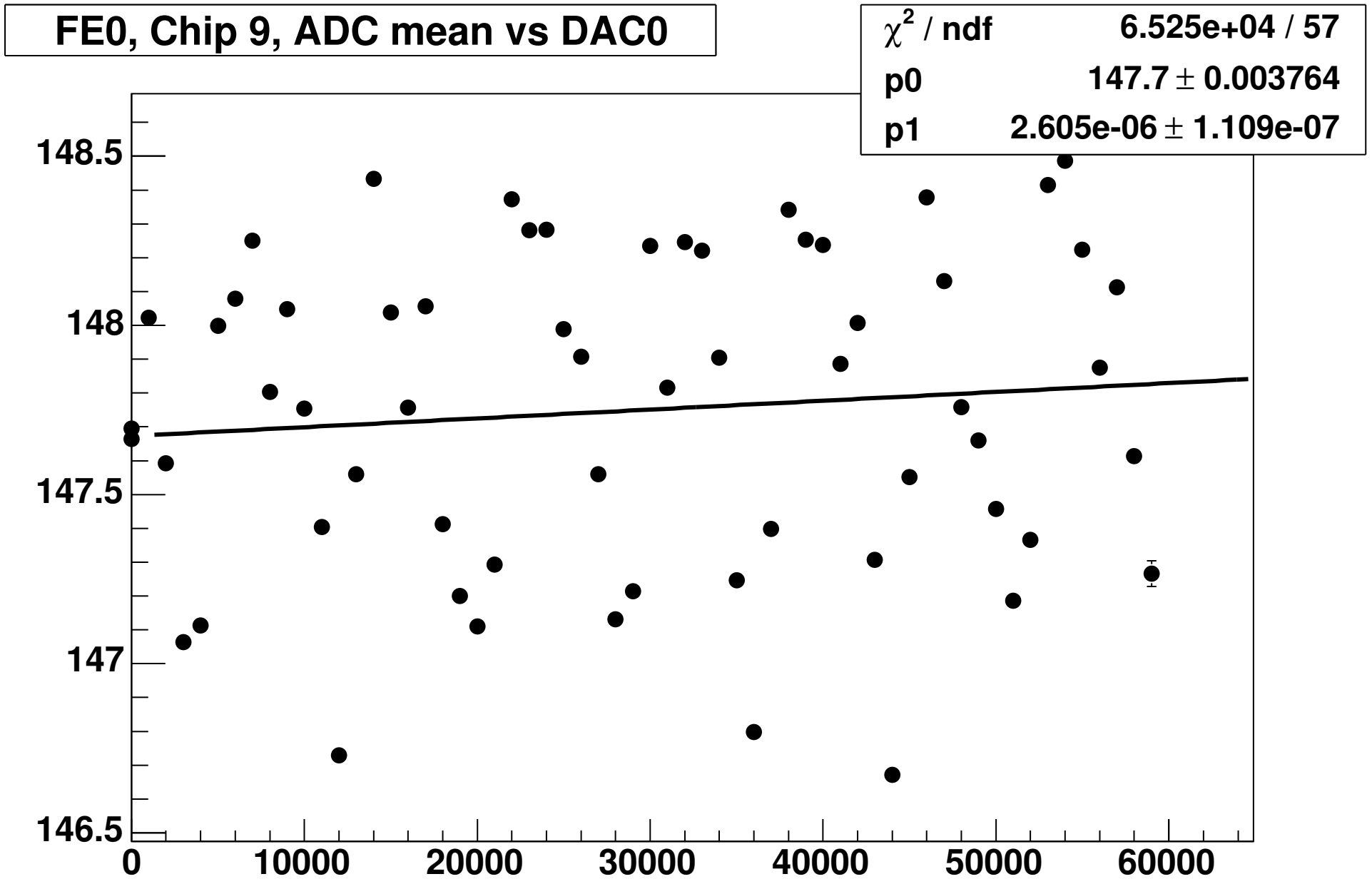

FE0, Chip 8, ADC noise vs DAC0
4.6
4.4
4.2
4
3.8
3.6
3.4
3.2
3
0
10000
20000
30000
40000
50000
60000

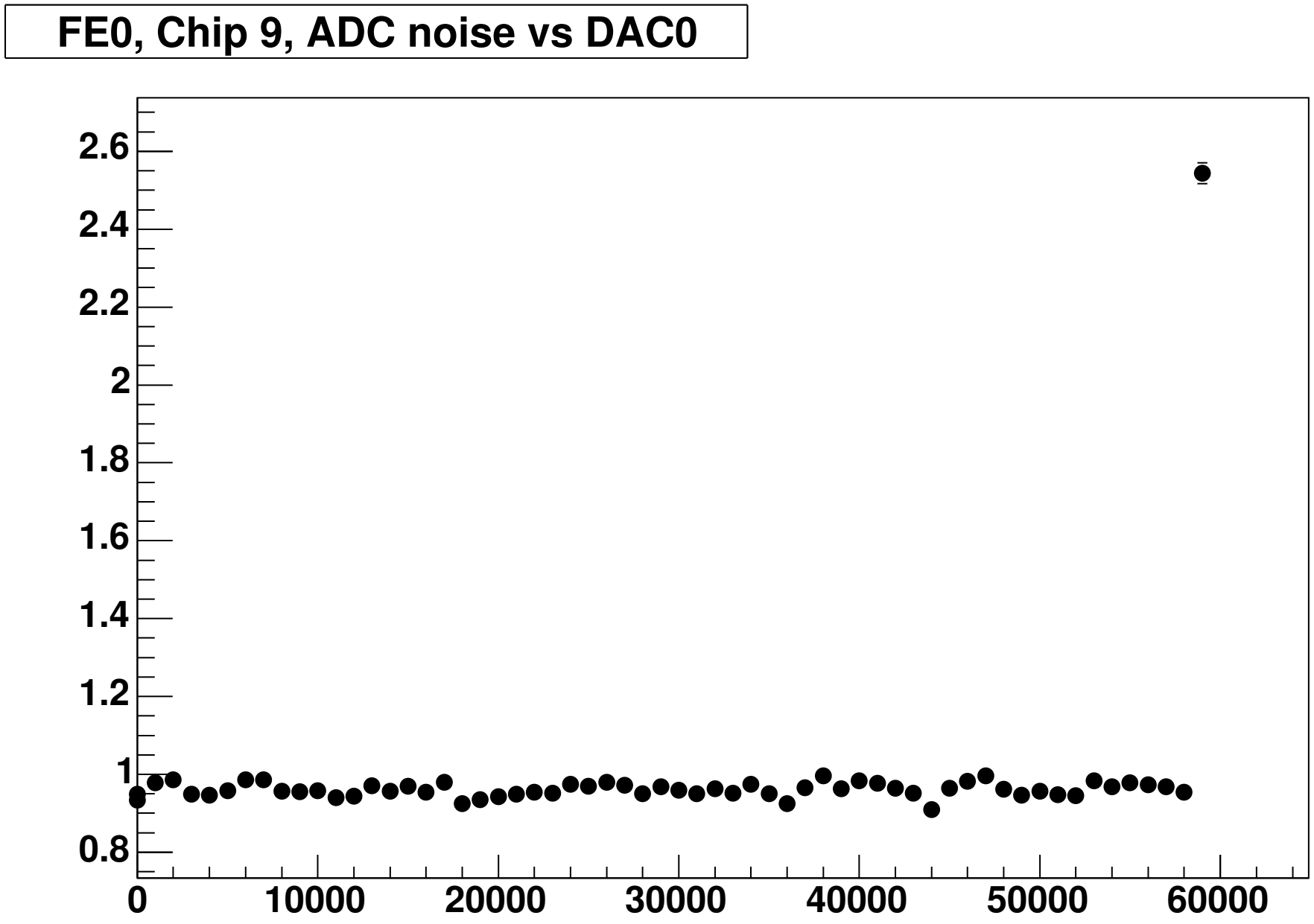

FE0, Chip 8, ADC residuals vs DAC0
0.3
0.2
0.1
-0
-0.1
-0.2
-0.3
-0.4
0
10000
20000
30000
40000
50000
60000

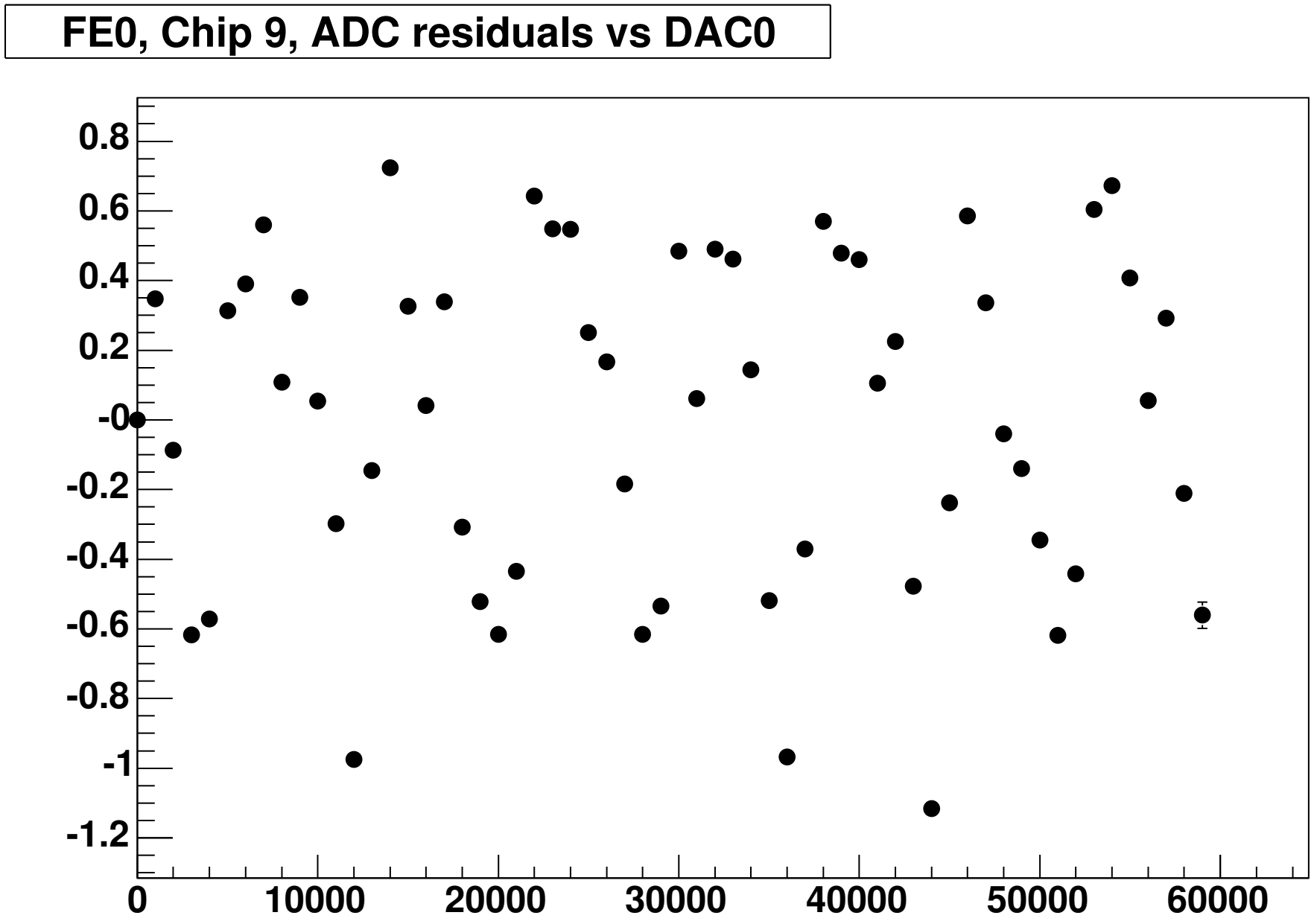

FE0, Chip 8, ADC mean vs DAC1
χ² / ndf 9.898e+04 / 57
p0 2.643 ± 0.007115
p1 0.2306 ± 2.274e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

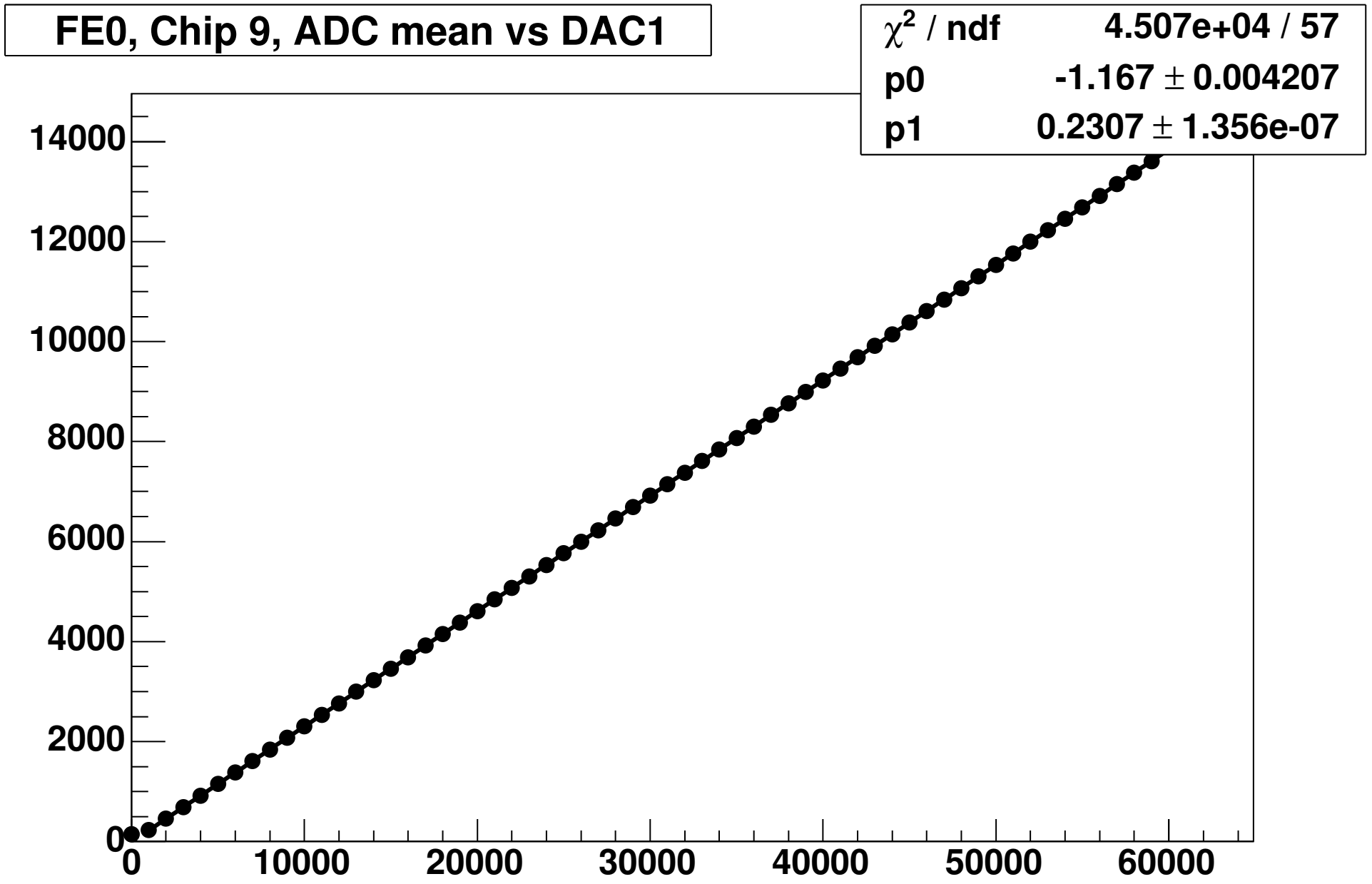

FE0, Chip 8, ADC noise vs DAC1
4.5
4
3.5
3
2.5
2
1.5
1
0
10000
20000
30000
40000
50000
60000

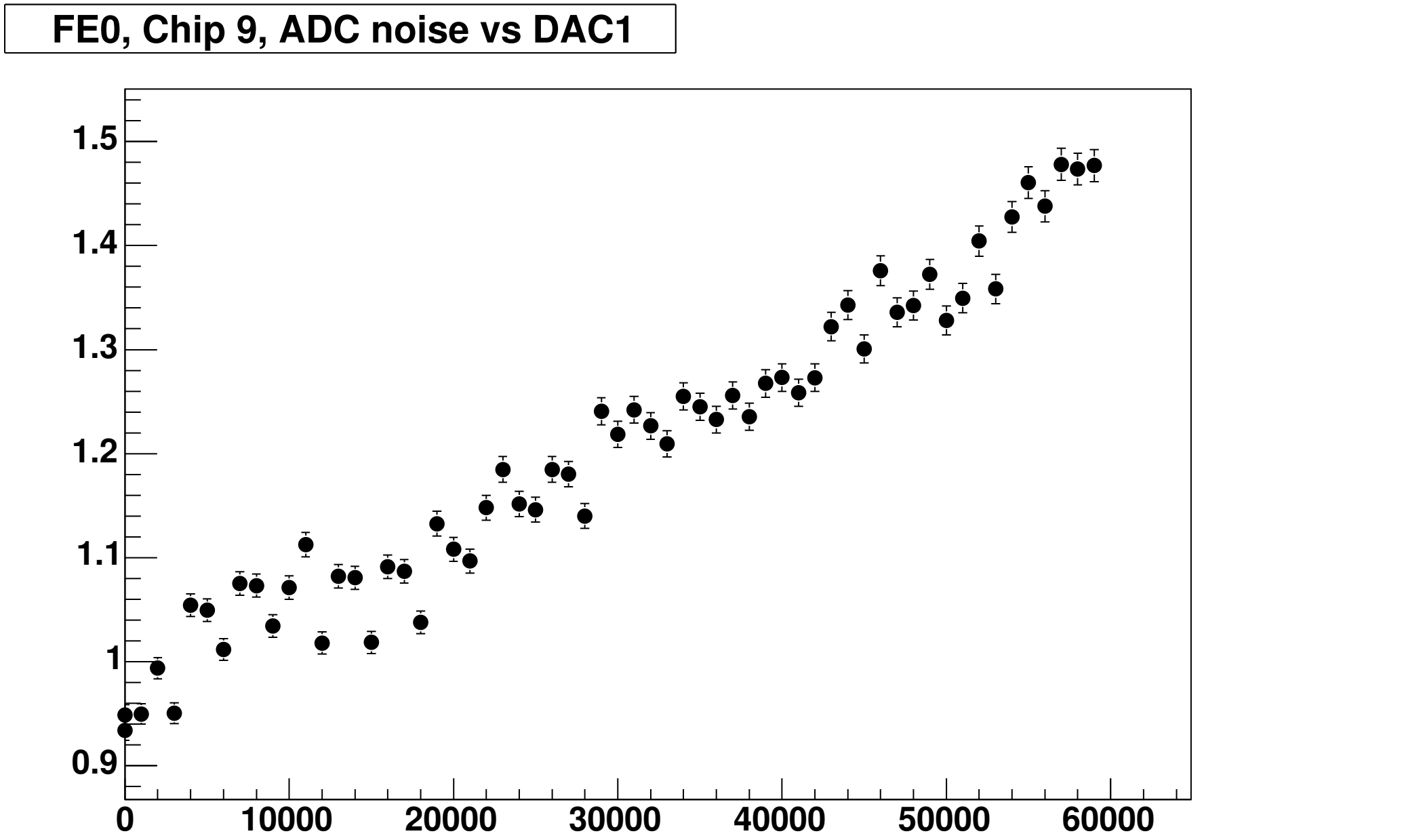

FE0, Chip 8, ADC residuals vs DAC1
4
3
2
1
0
-1
-2
0
10000
20000
30000
40000
50000
60000

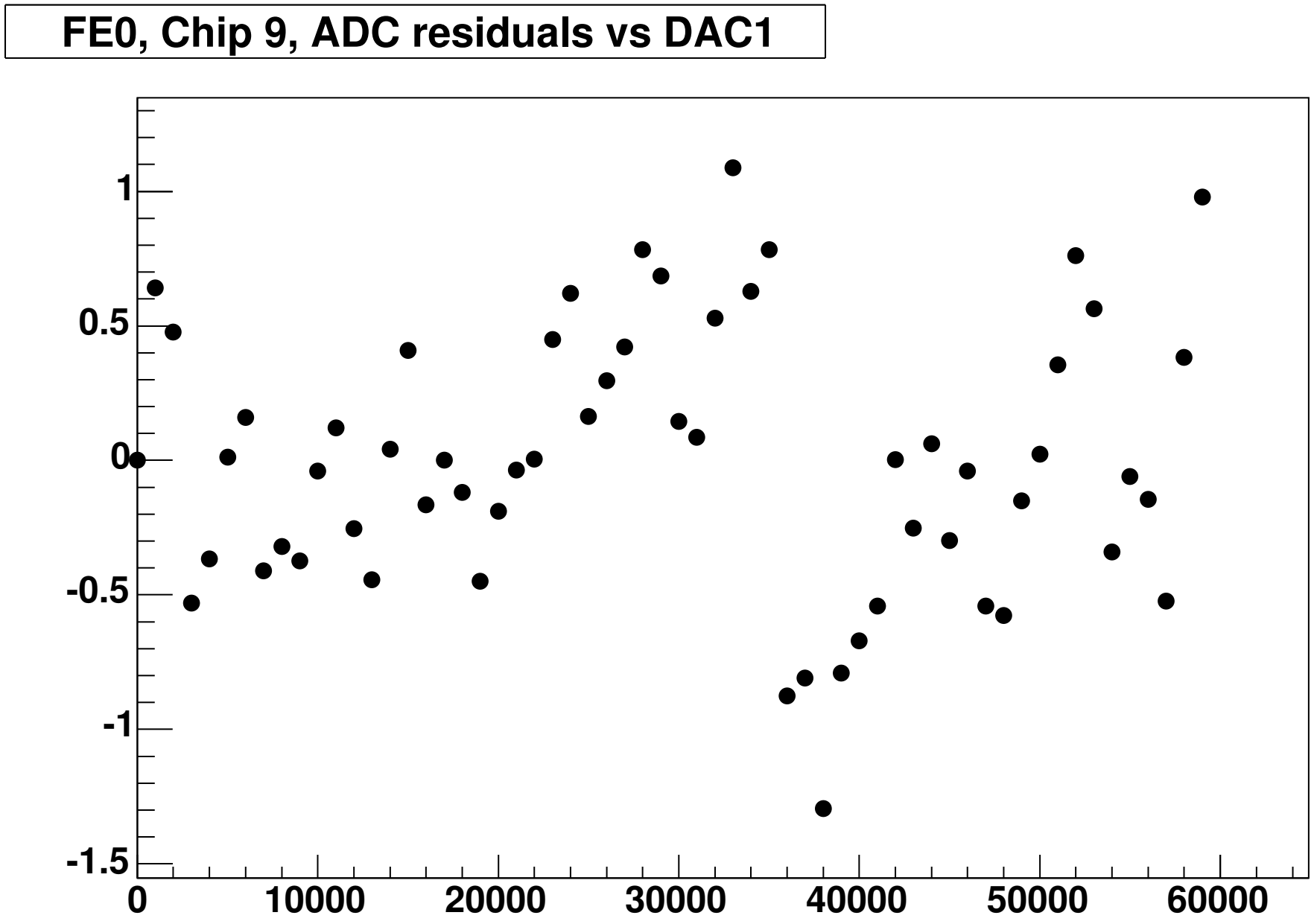

FE0, Chip 9, ADC mean vs DAC0
χ² / ndf 6.525e+04 / 57
p0 147.7 ± 0.003764
p1 2.605e-06 ± 1.109e-07
148.5
148
147.5
147
146.5
0
10000
20000
30000
40000
50000
60000

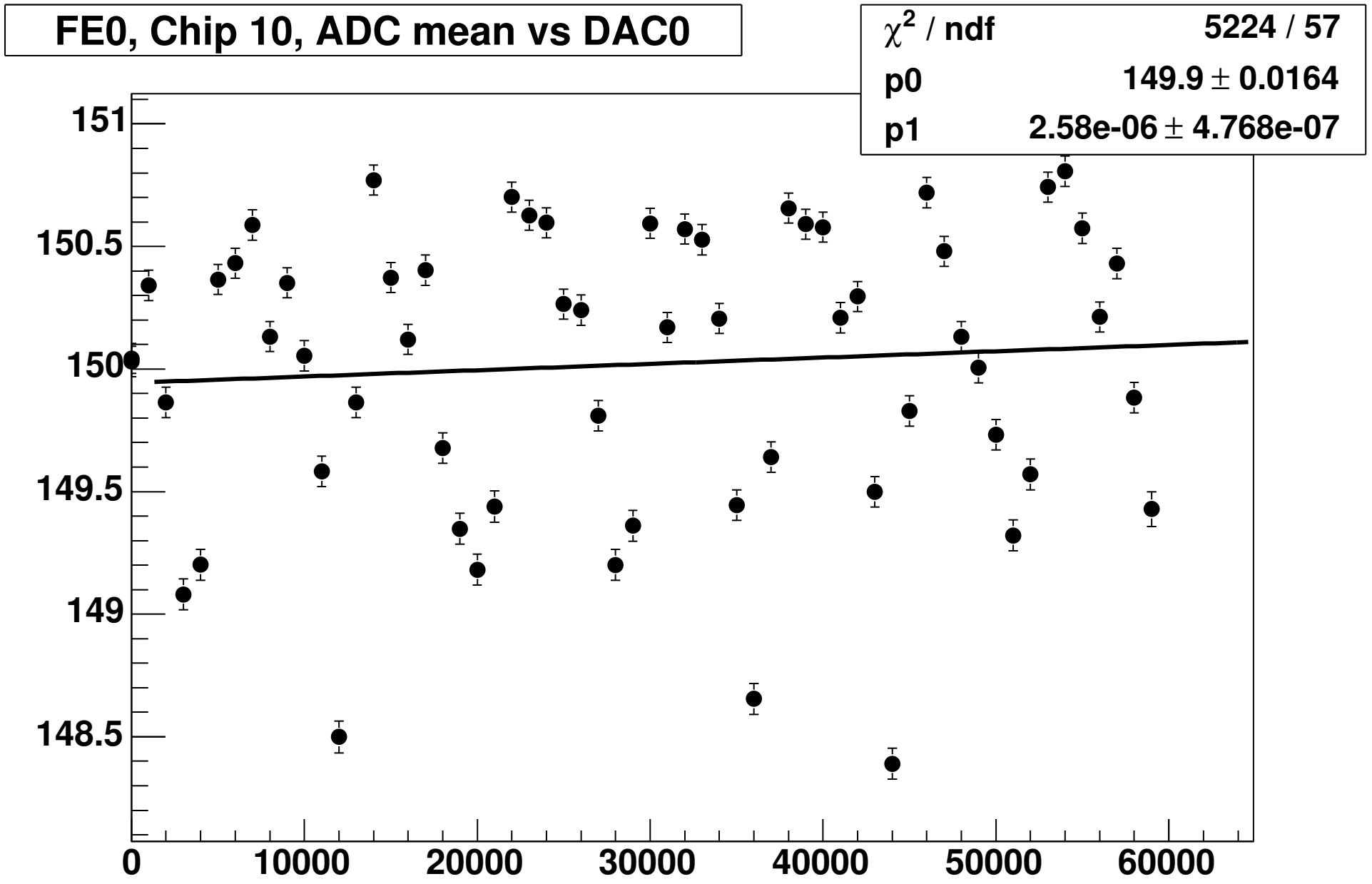

FE0, Chip 9, ADC noise vs DAC0
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0
10000
20000
30000
40000
50000
60000

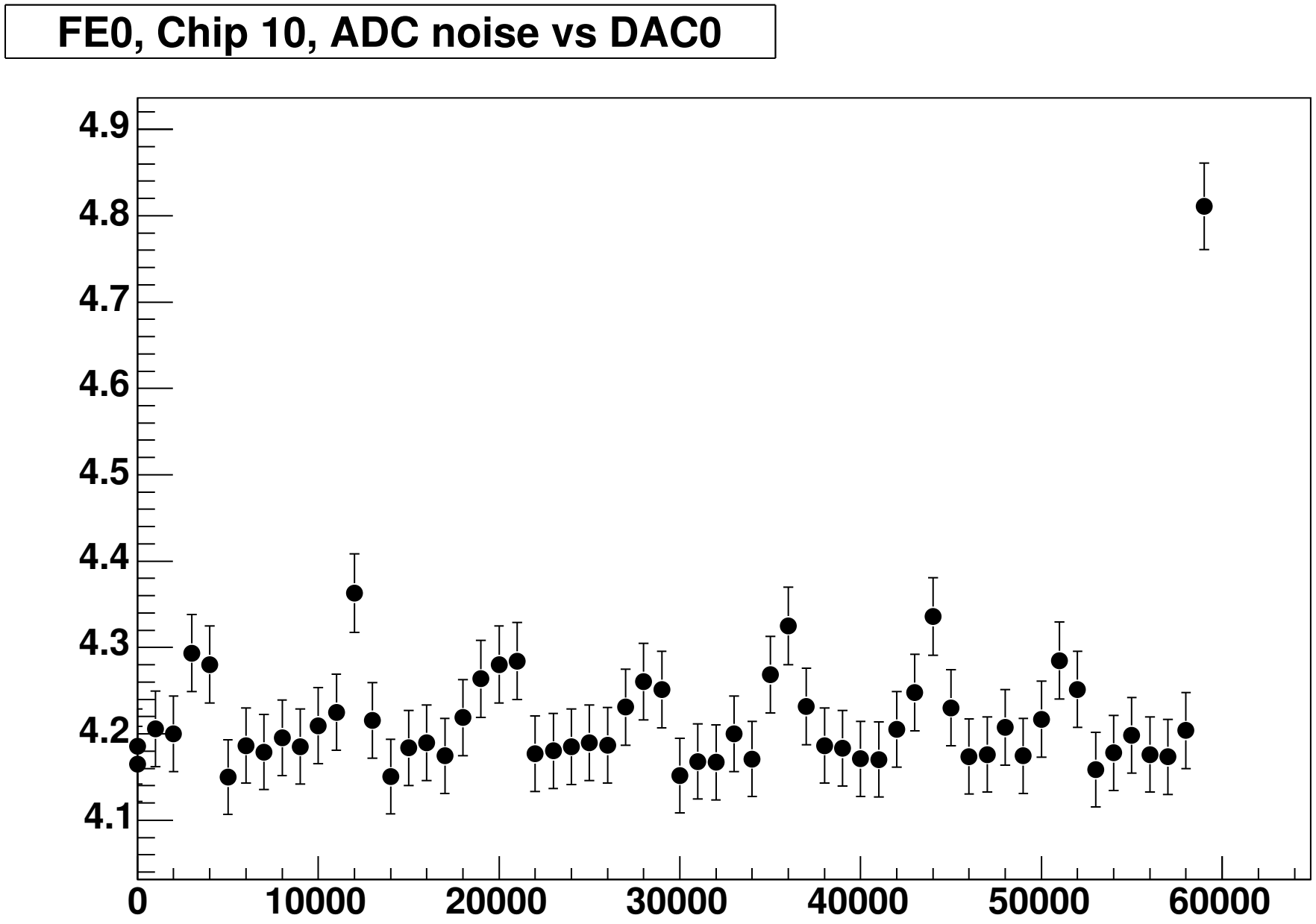

FE0, Chip 9, ADC residuals vs DAC0
0.8
0.6
0.4
0.2
-0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
0
10000
20000
30000
40000
50000
60000

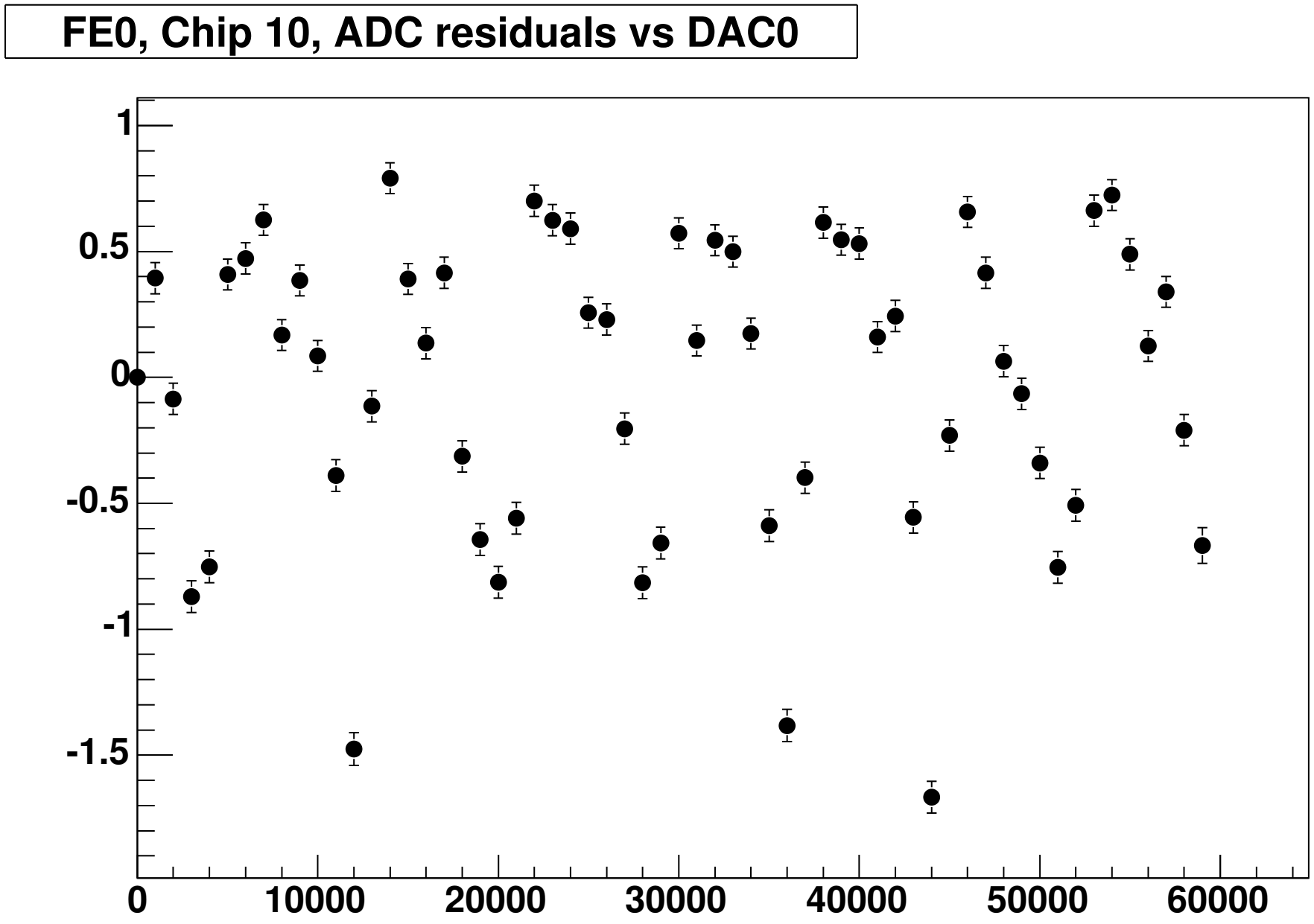

FE0, Chip 9, ADC mean vs DAC1
χ² / ndf 4.507e+04 / 57
p0 -1.167 ± 0.004207
p1 0.2307 ± 1.356e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

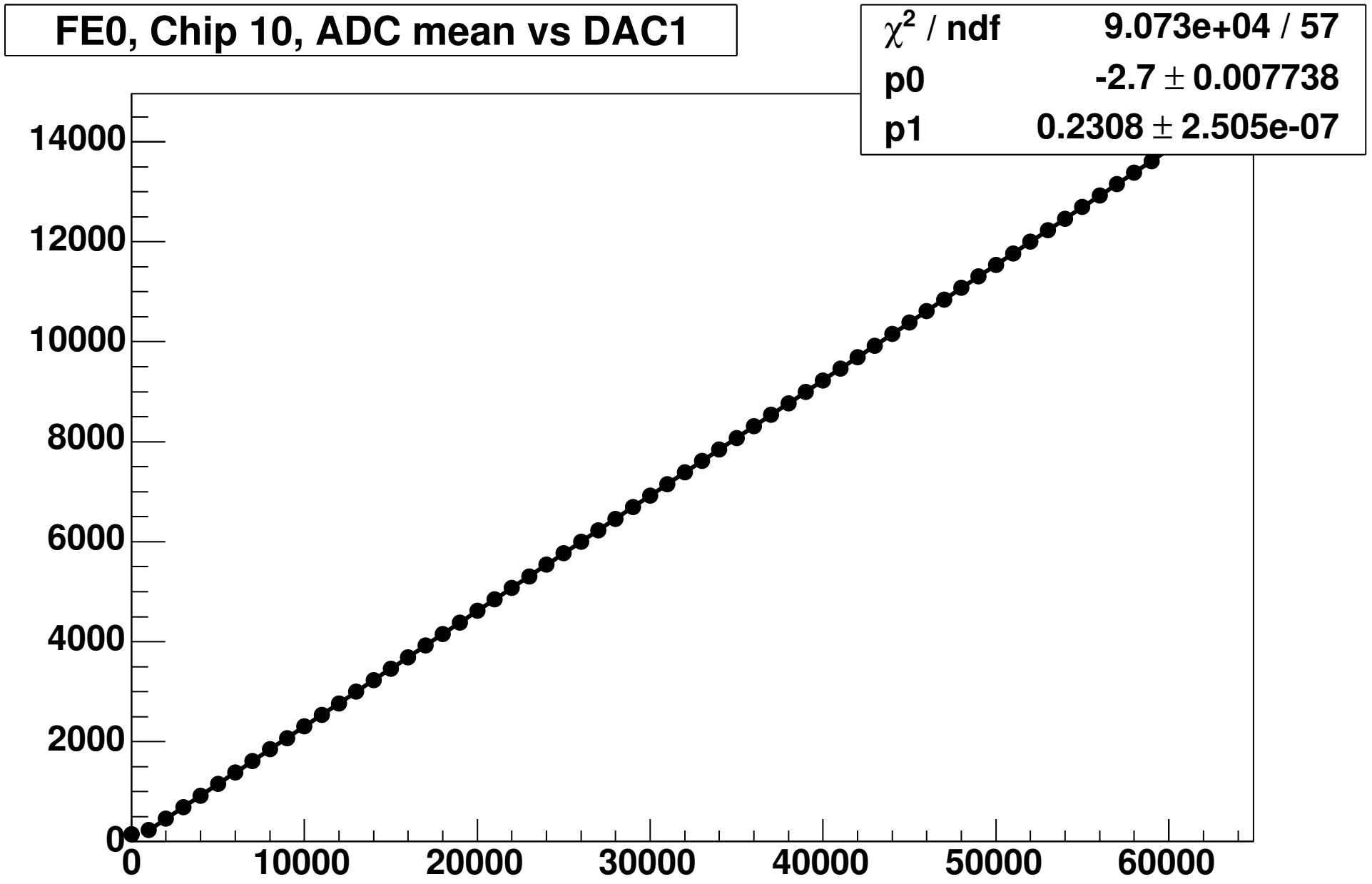

FE0, Chip 9, ADC noise vs DAC1
1.5
1.4
1.3
1.2
1.1
1
0.9
0
10000
20000
30000
40000
50000
60000

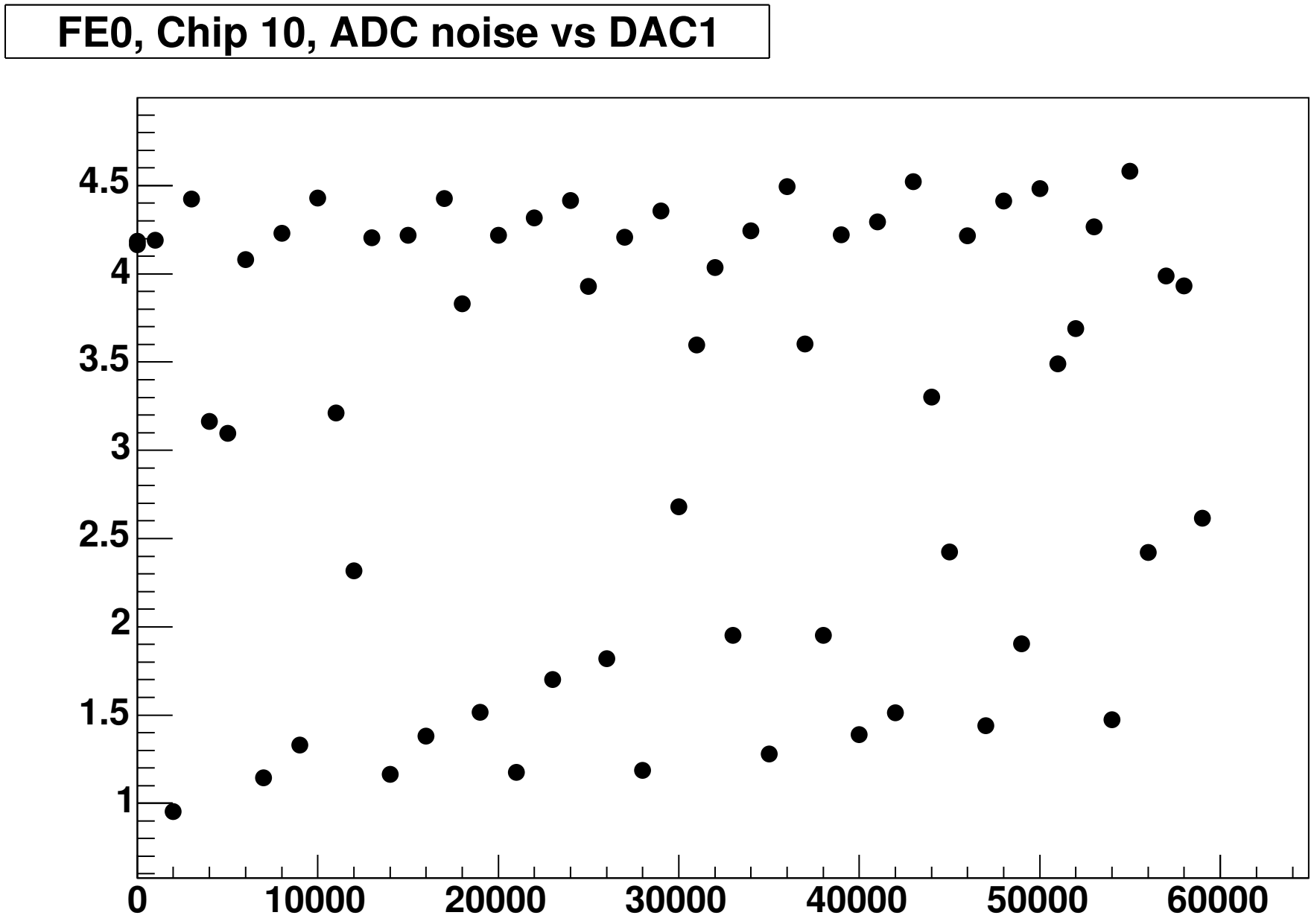

FE0, Chip 9, ADC residuals vs DAC1
1
0.5
0
-0.5
-1
-1.5
0
10000
20000
30000
40000
50000
60000


FE0, Chip 10, ADC mean vs DAC0
χ² / ndf 5224 / 57
p0 149.9 ± 0.0164
p1 2.58e-06 ± 4.768e-07
151
150.5
150
149.5
149
148.5
0
10000
20000
30000
40000
50000
60000

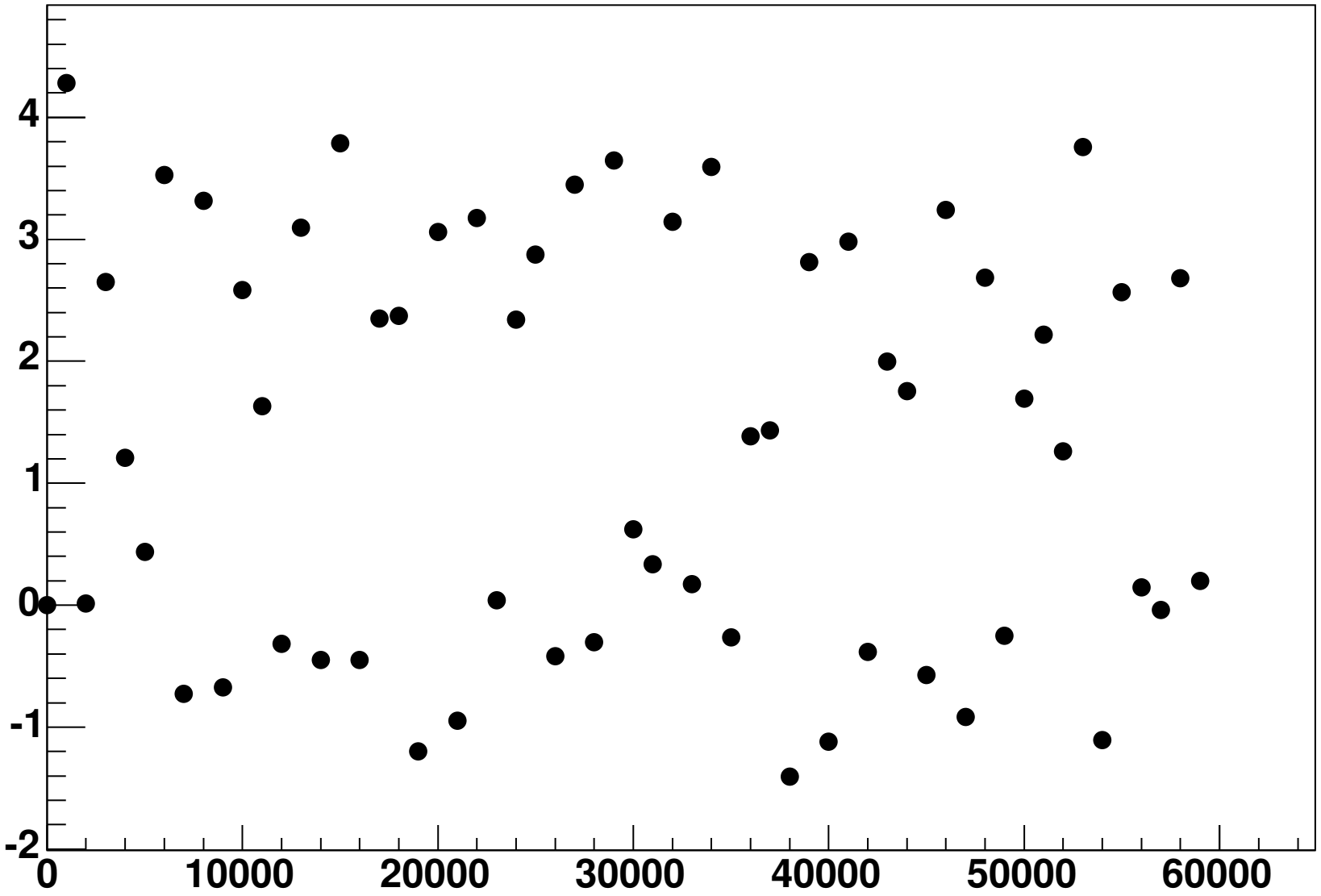

FE0, Chip 10, ADC noise vs DAC0
4.9
4.8
4.7
4.6
4.5
4.4
4.3
4.2
4.1
0
10000
20000
30000
40000
50000
60000

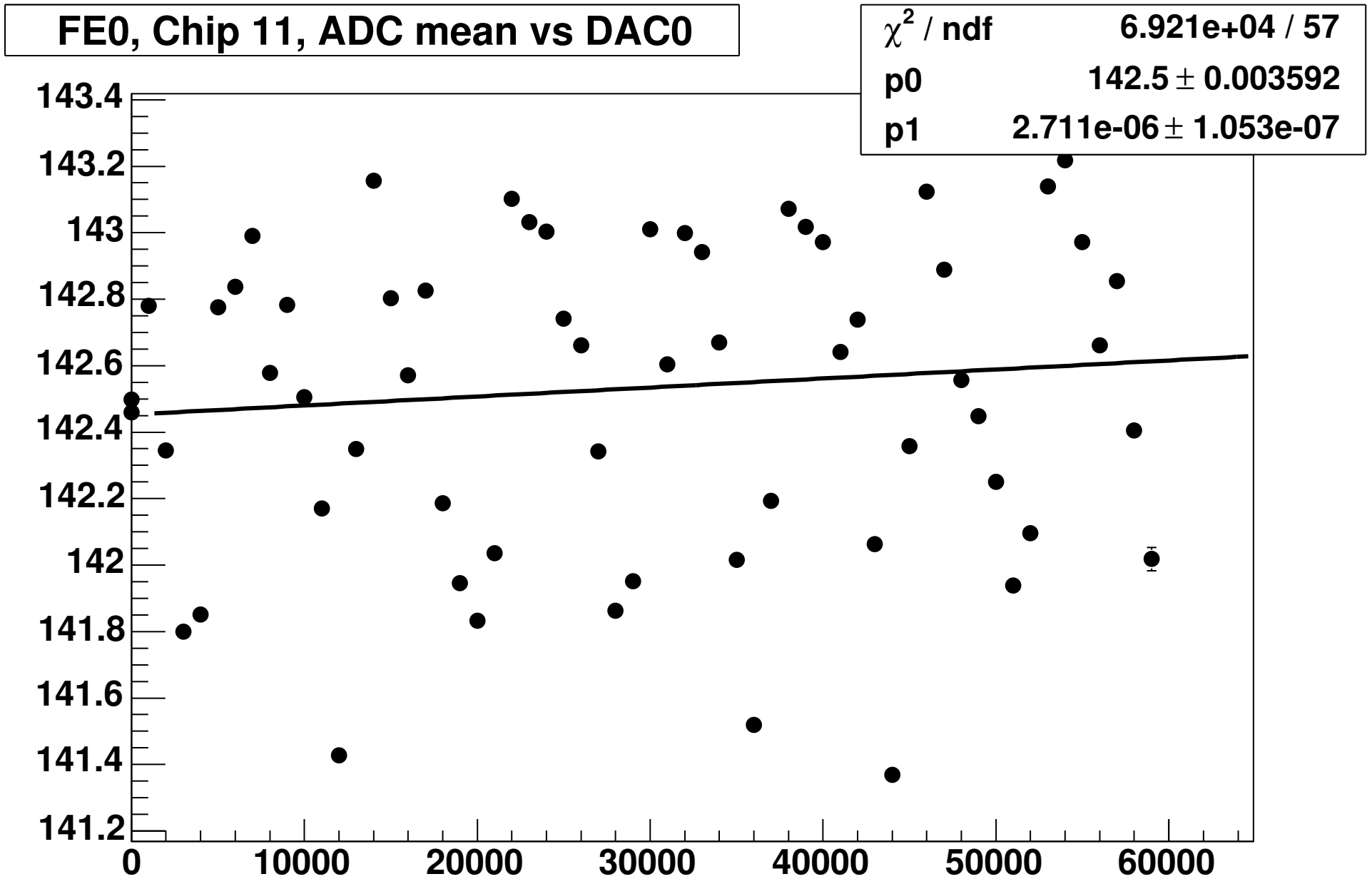

FE0, Chip 10, ADC residuals vs DAC0
1
0.5
0
-0.5
-1
-1.5
0
10000
20000
30000
40000
50000
60000

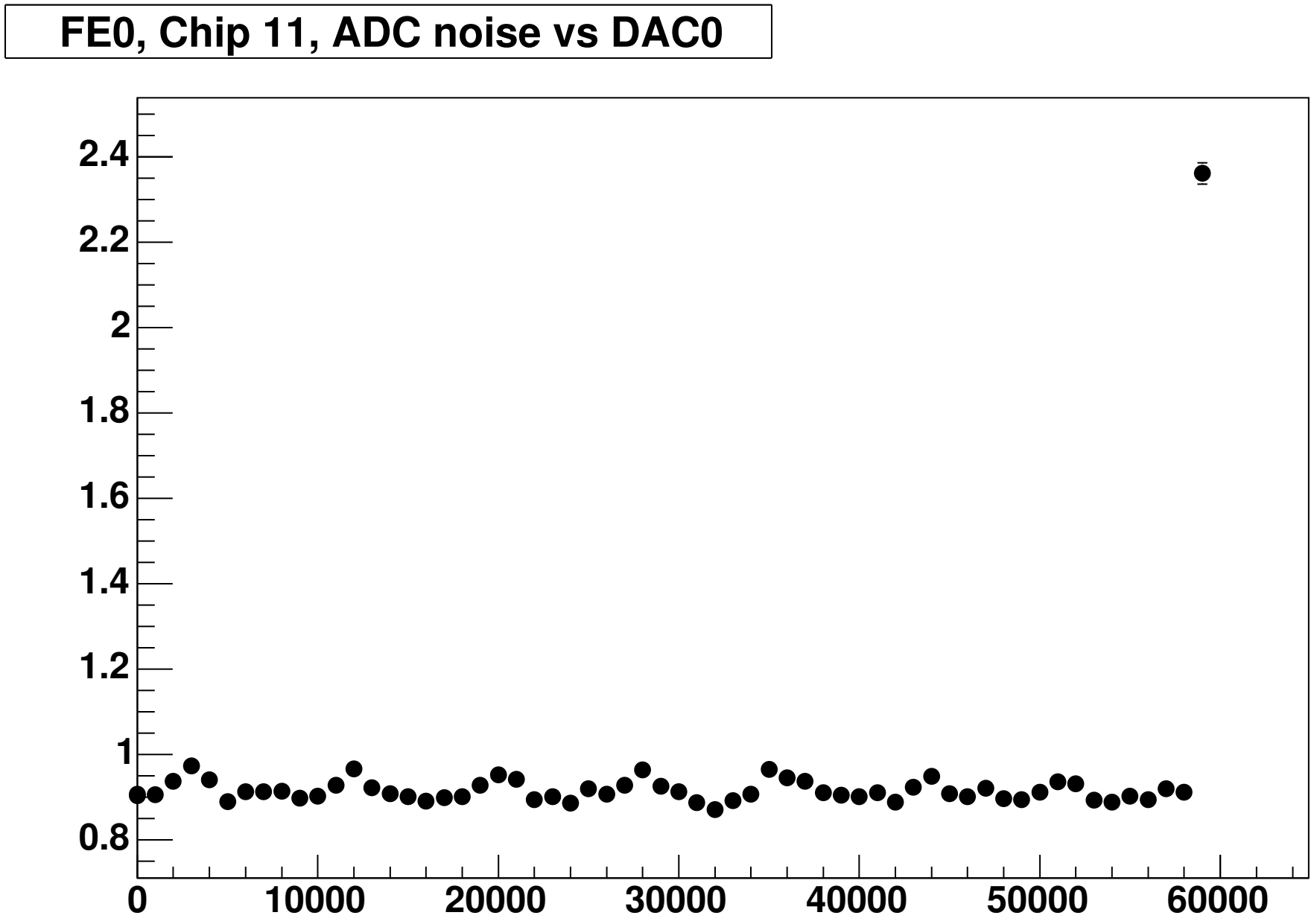

FE0, Chip 10, ADC mean vs DAC1
χ² / ndf 9.073e+04 / 57
p0 -2.7 ± 0.007738
p1 0.2308 ± 2.505e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

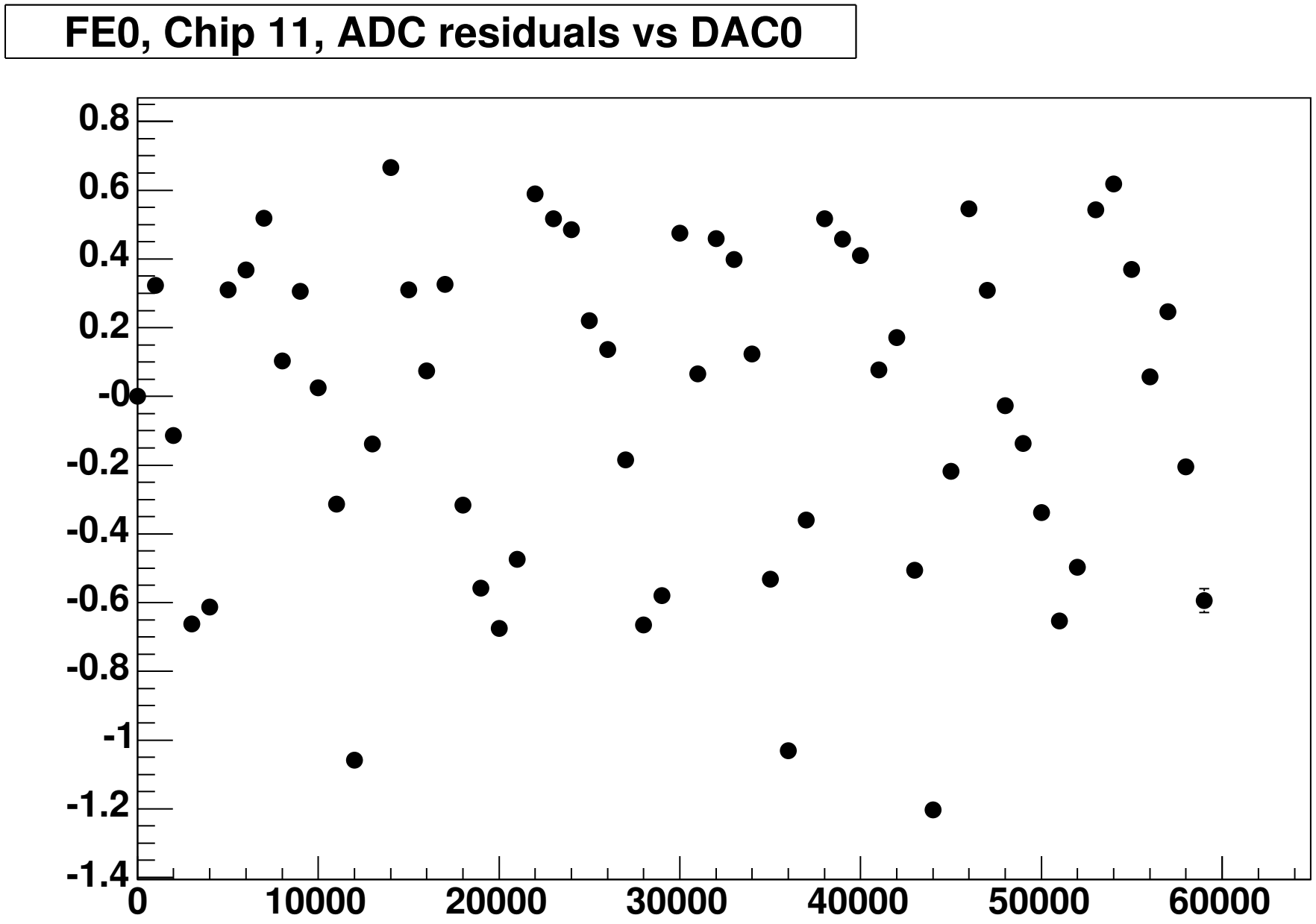

FE0, Chip 10, ADC noise vs DAC1
4.5
4
3.5
3
2.5
2
1.5
1
0
10000
20000
30000
40000
50000
60000

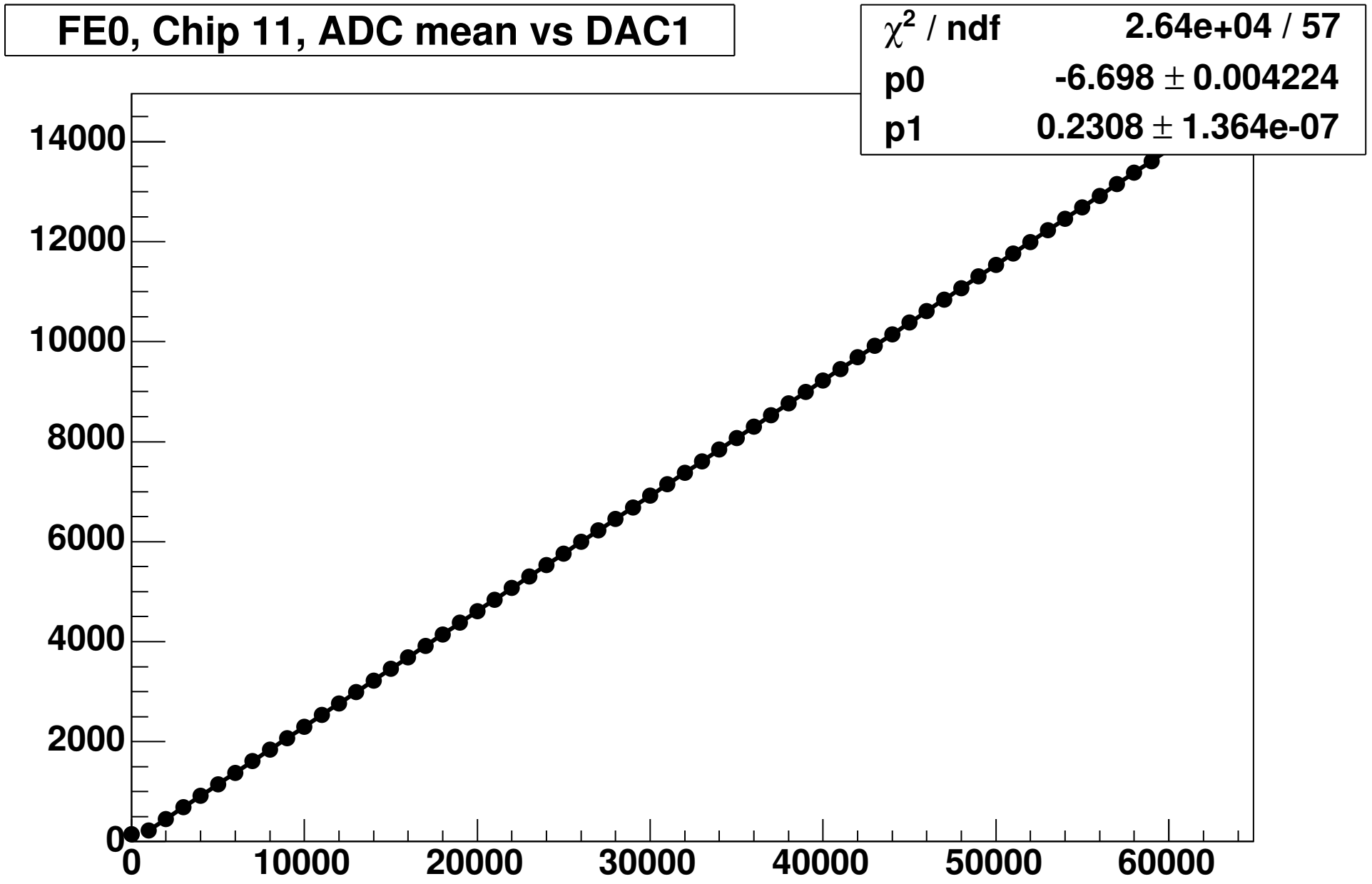
FE0, Chip 10, ADC residuals vs DAC1

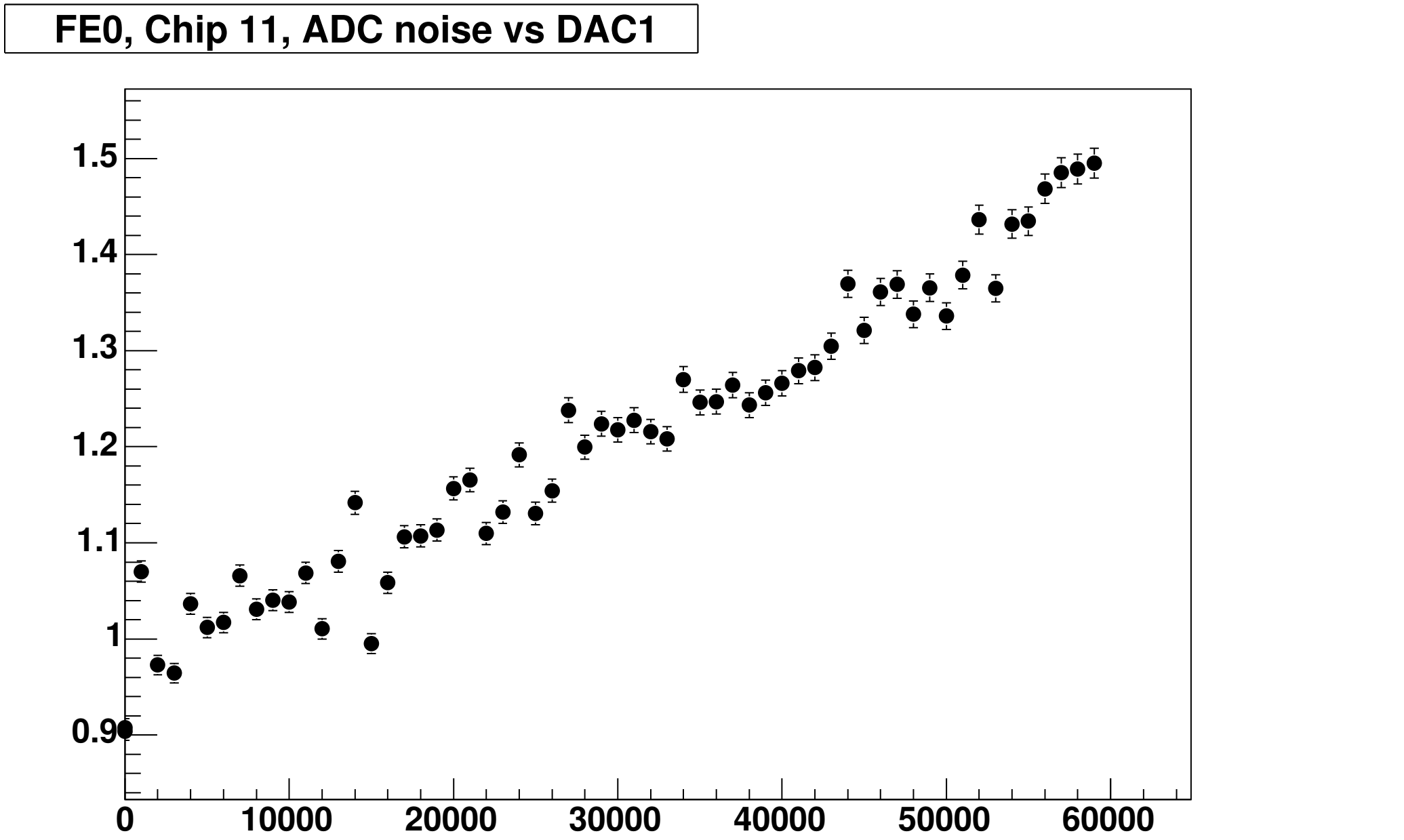


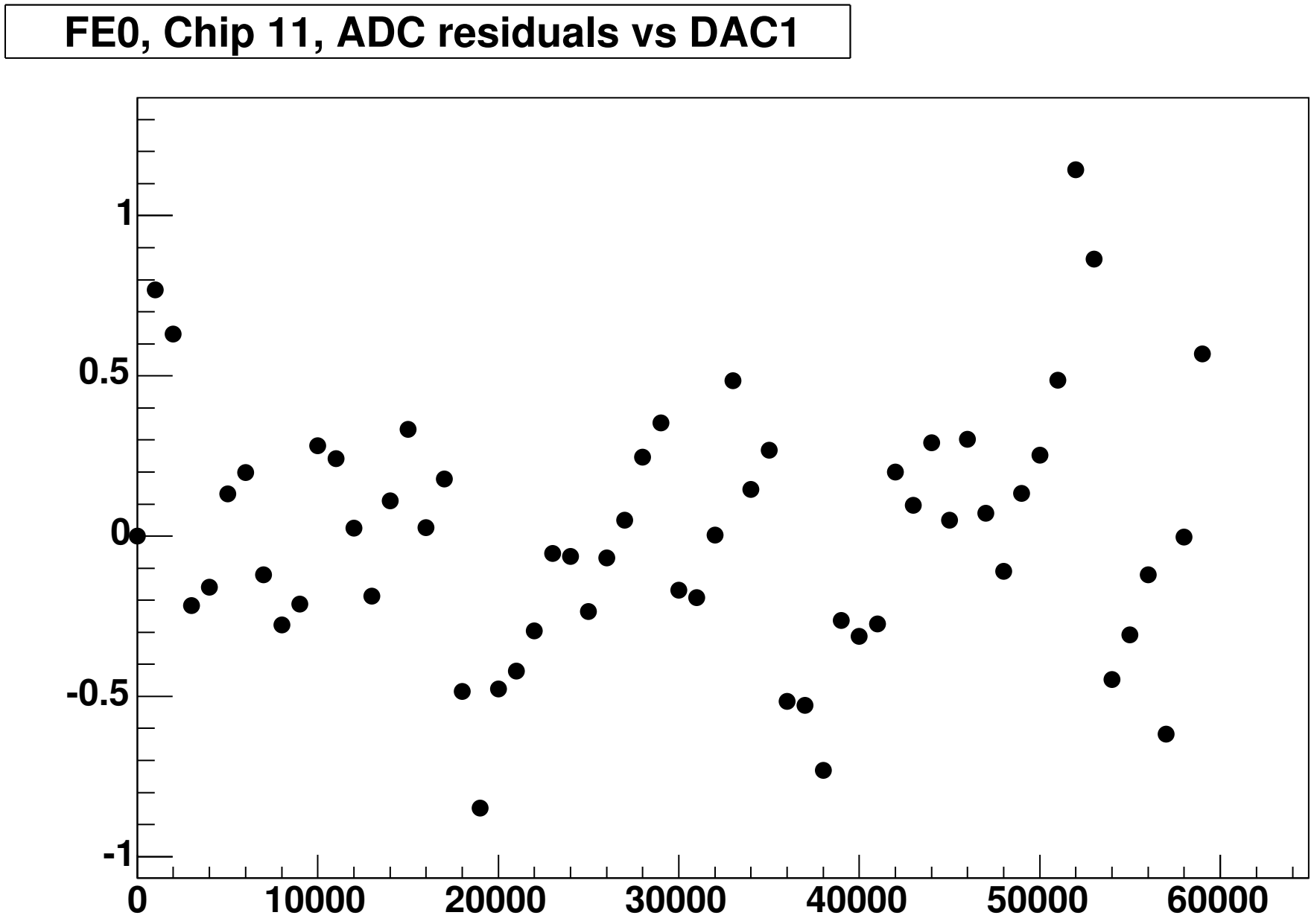

FE0, Chip 11, ADC mean vs DAC0
χ² / ndf 6.921e+04 / 57
p0 142.5 ± 0.003592
p1 2.711e-06 ± 1.053e-07
143.4
143.2
143
142.8
142.6
142.4
142.2
142
141.8
141.6
141.4
141.2
0
10000
20000
30000
40000
50000
60000

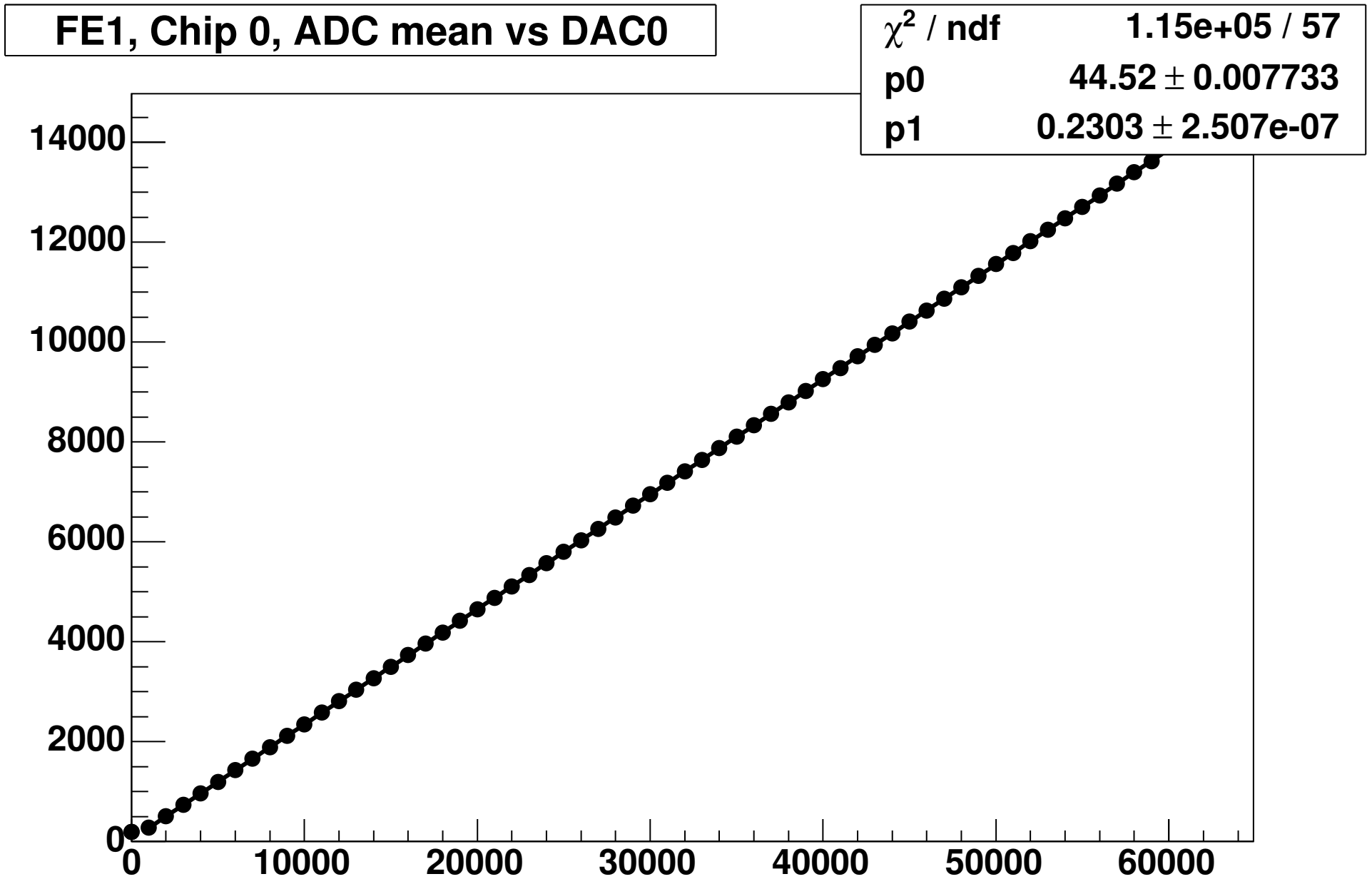

FE0, Chip 11, ADC noise vs DAC0
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0
10000
20000
30000
40000
50000
60000

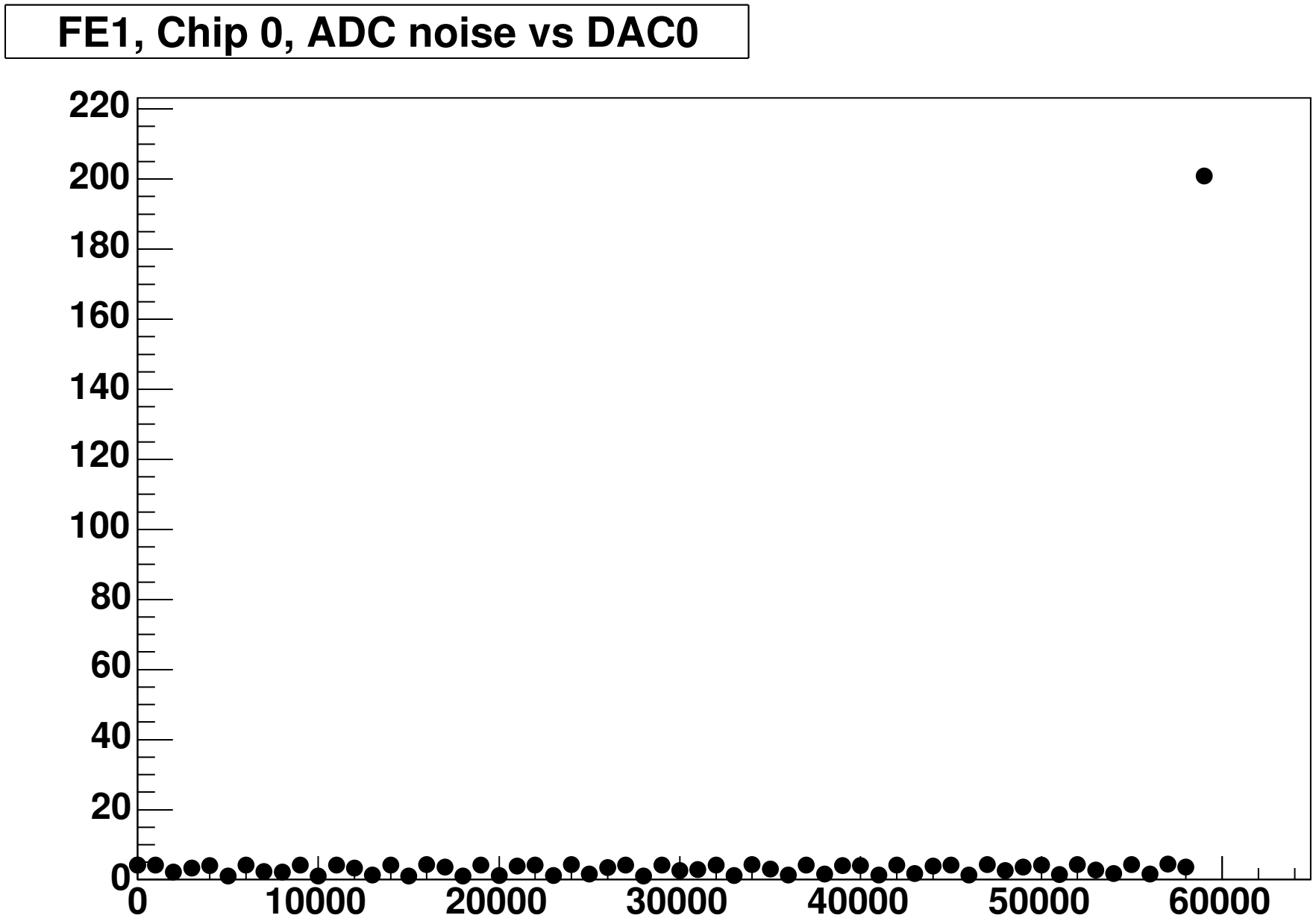

FE0, Chip 11, ADC residuals vs DAC0
0.8
0.6
0.4
0.2
-0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
-1.4
0
10000
20000
30000
40000
50000
60000

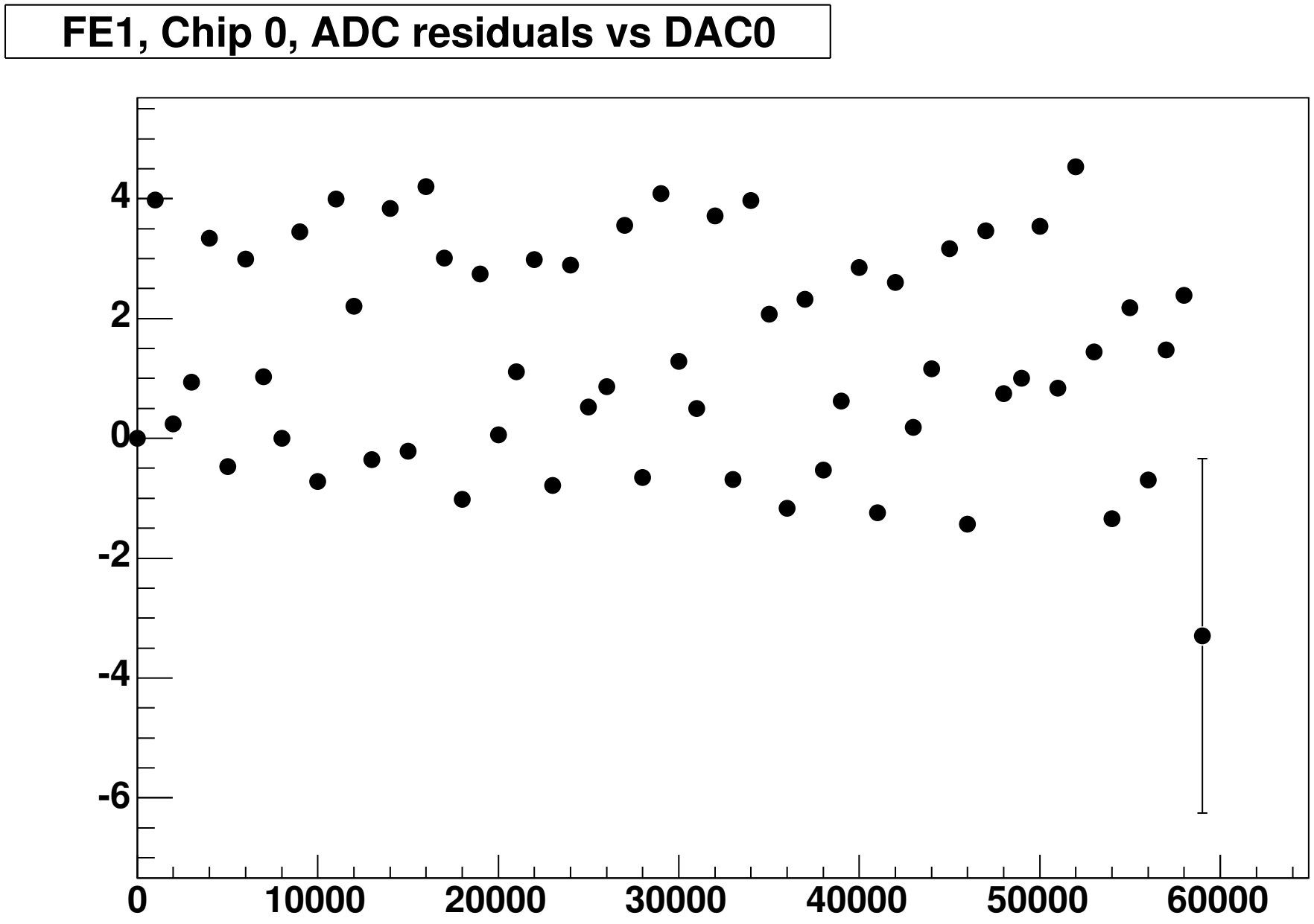

FE0, Chip 11, ADC mean vs DAC1
χ² / ndf 2.64e+04 / 57
p0 -6.698 ± 0.004224
p1 0.2308 ± 1.364e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

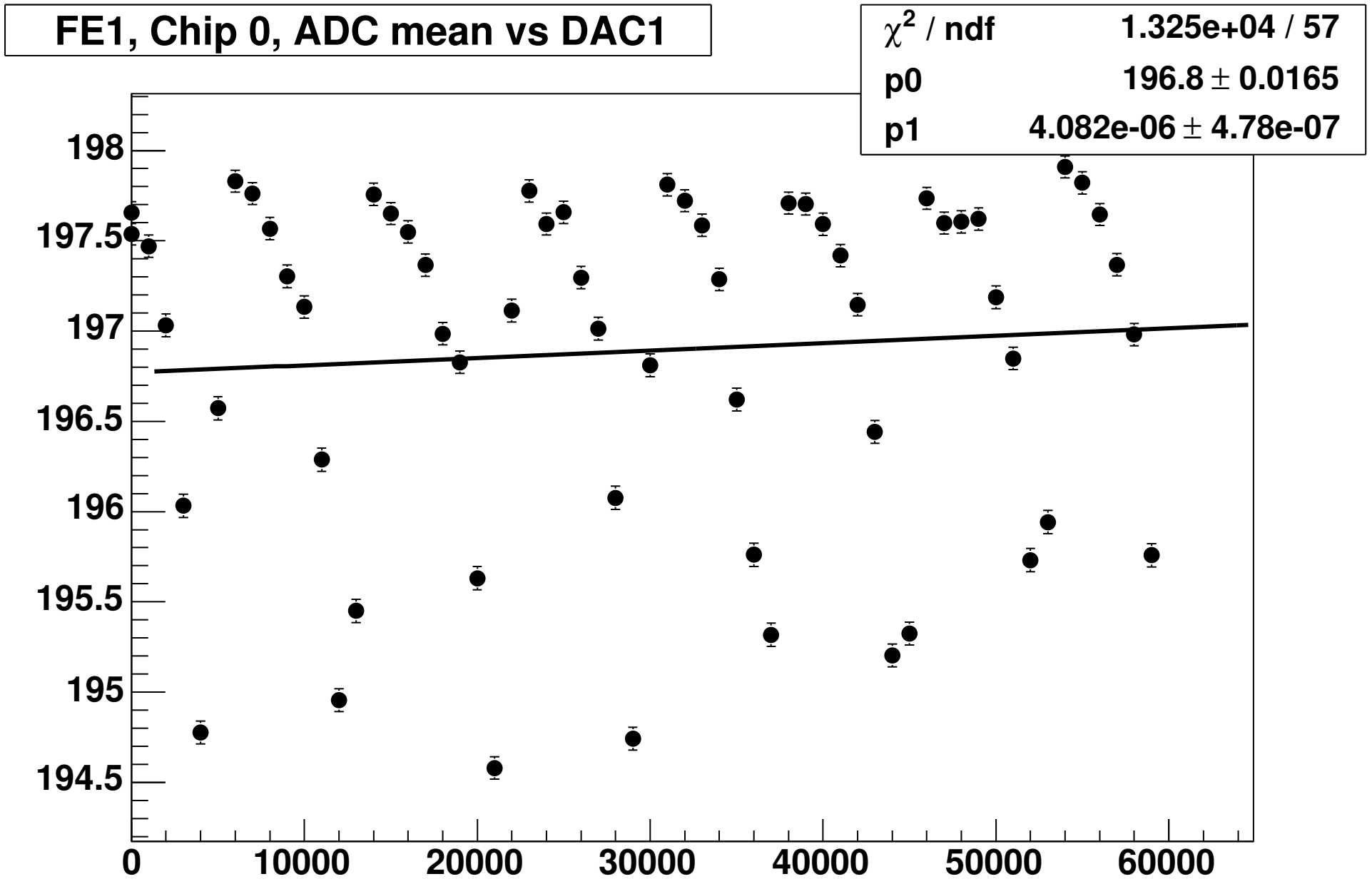

FE0, Chip 11, ADC noise vs DAC1
1.5
1.4
1.3
1.2
1.1
1
0.9
0
10000
20000
30000
40000
50000
60000

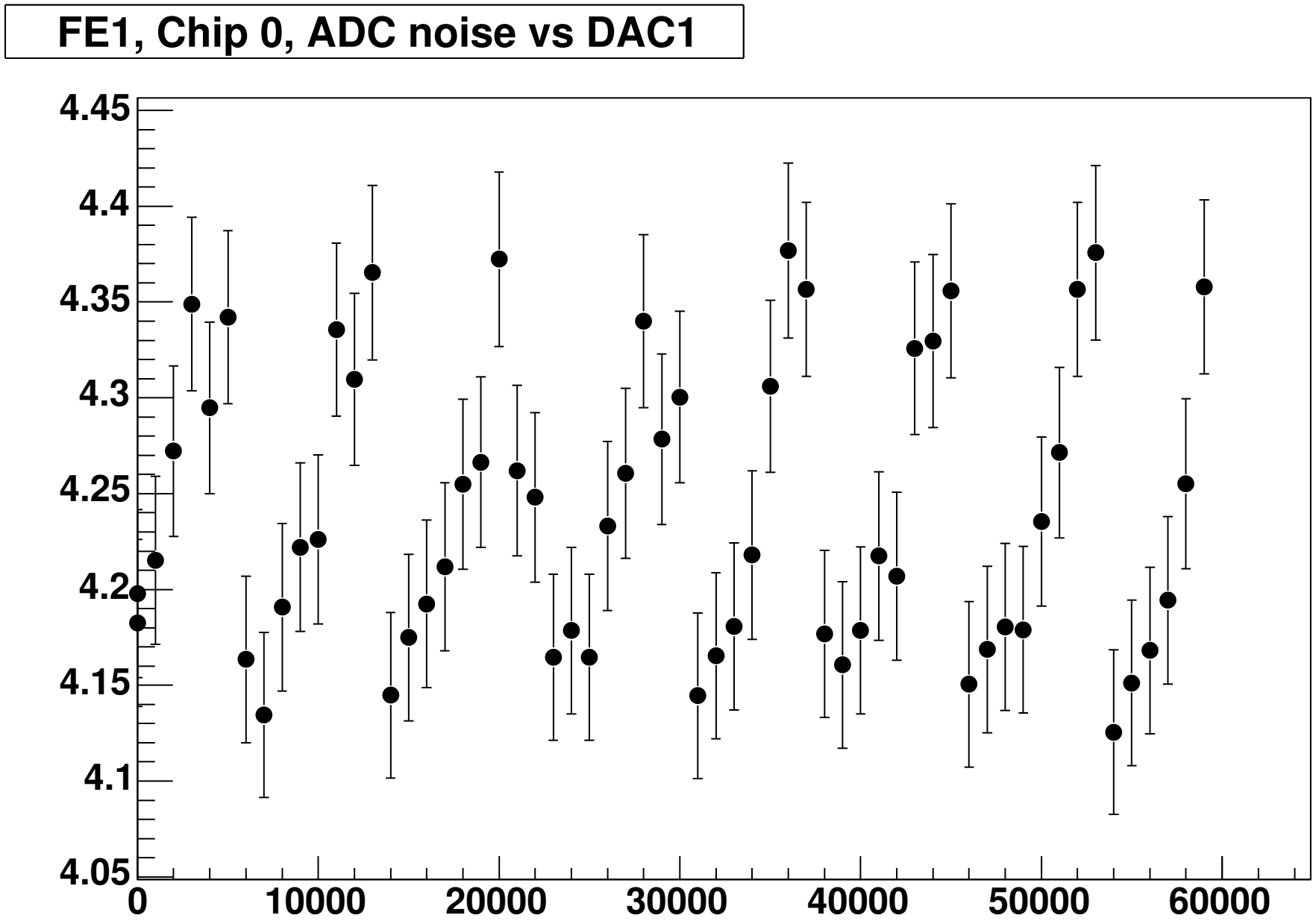

FE0, Chip 11, ADC residuals vs DAC1
1
0.5
0
-0.5
-1
0
10000
20000
30000
40000
50000
60000

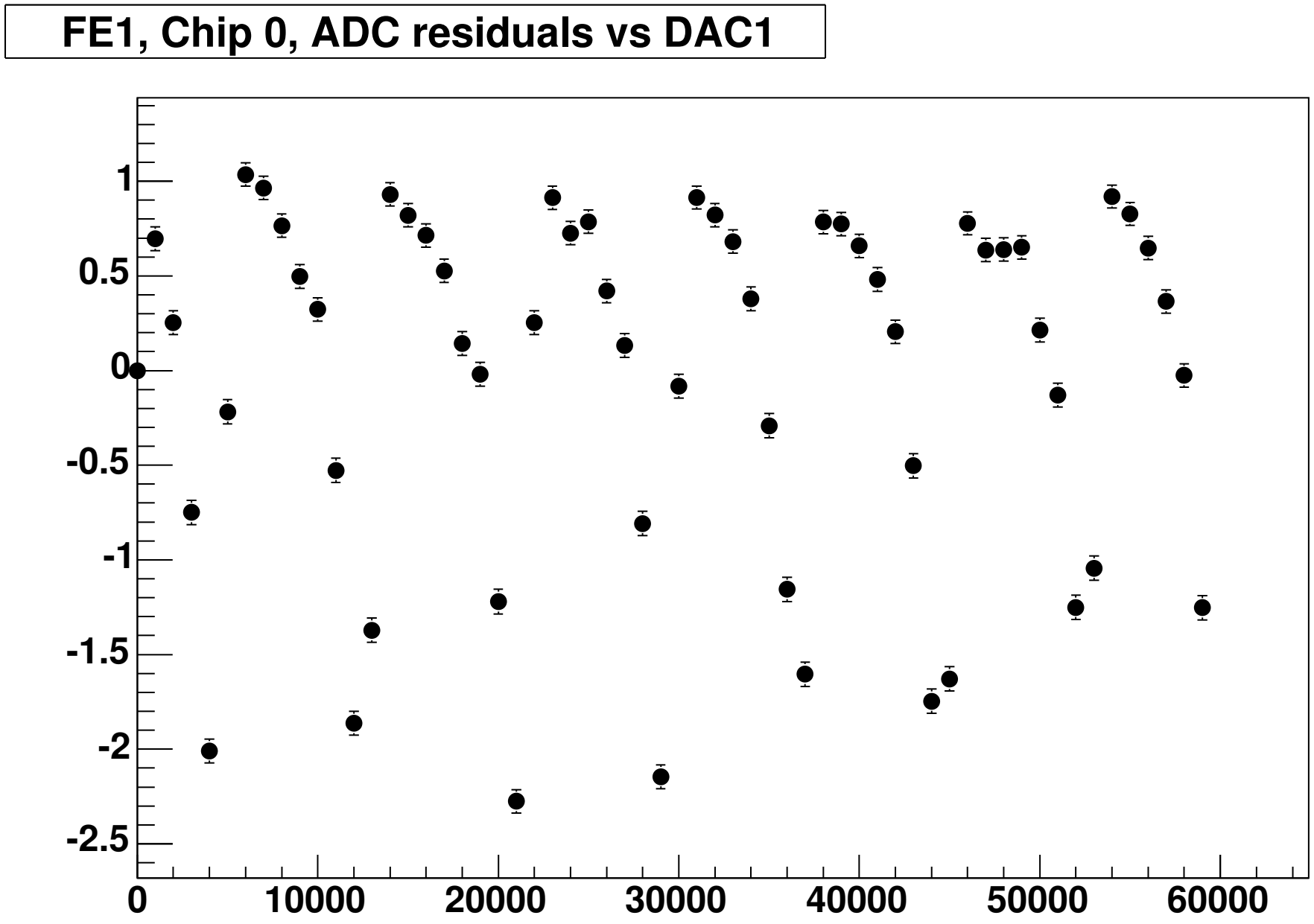

FE1, Chip 0, ADC mean vs DAC0
χ² / ndf 1.15e+05 / 57
p0 44.52 ± 0.007733
p1 0.2303 ± 2.507e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

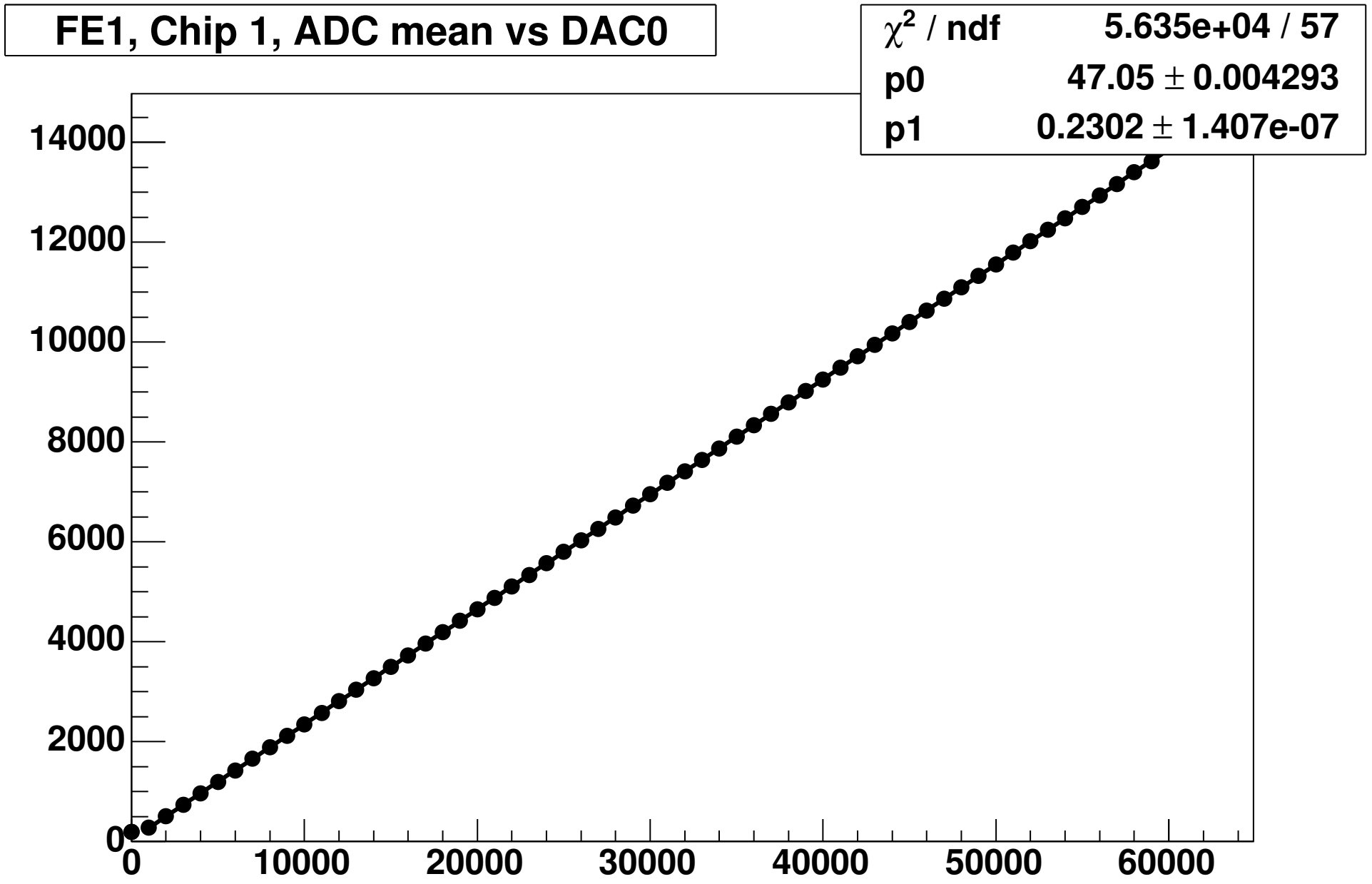

FE1, Chip 0, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

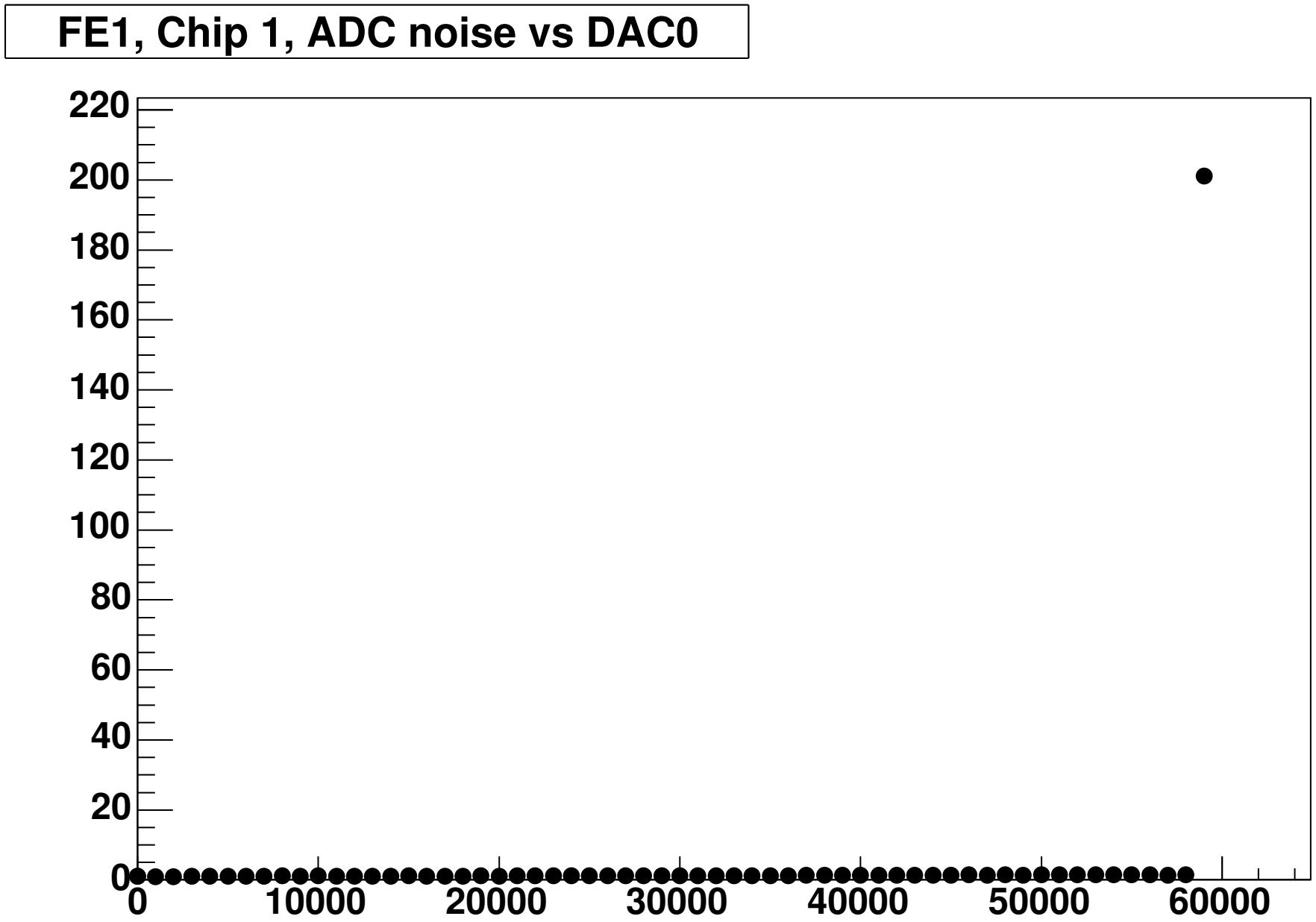

FE1, Chip 0, ADC residuals vs DAC0
4
2
0
-2
-4
-6
0
10000
20000
30000
40000
50000
60000

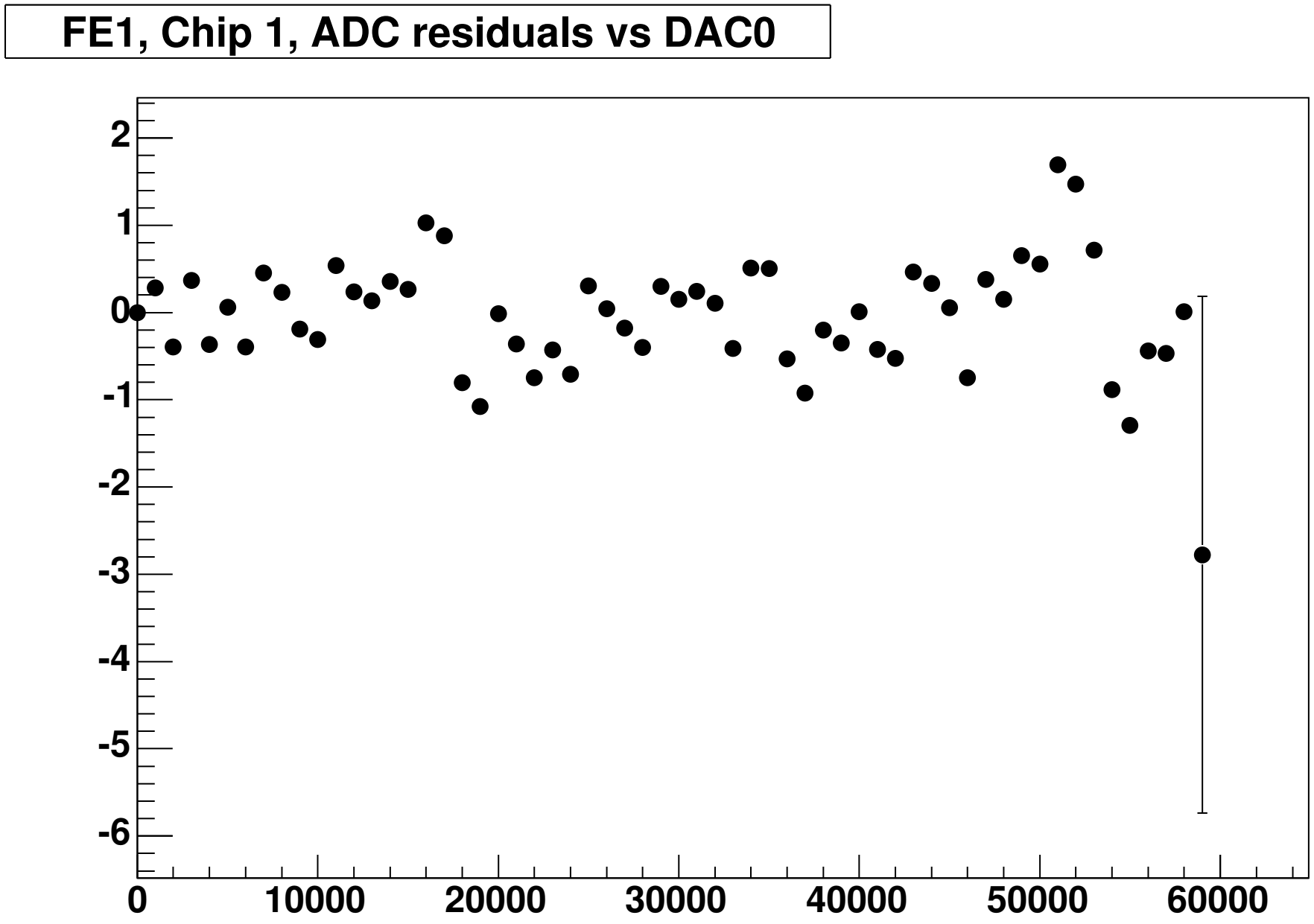

FE1, Chip 0, ADC mean vs DAC1
χ² / ndf 1.325e+04 / 57
p0 196.8 ± 0.0165
p1 4.082e-06 ± 4.78e-07
198
197.5
197
196.5
196
195.5
195
194.5
0
10000
20000
30000
40000
50000
60000

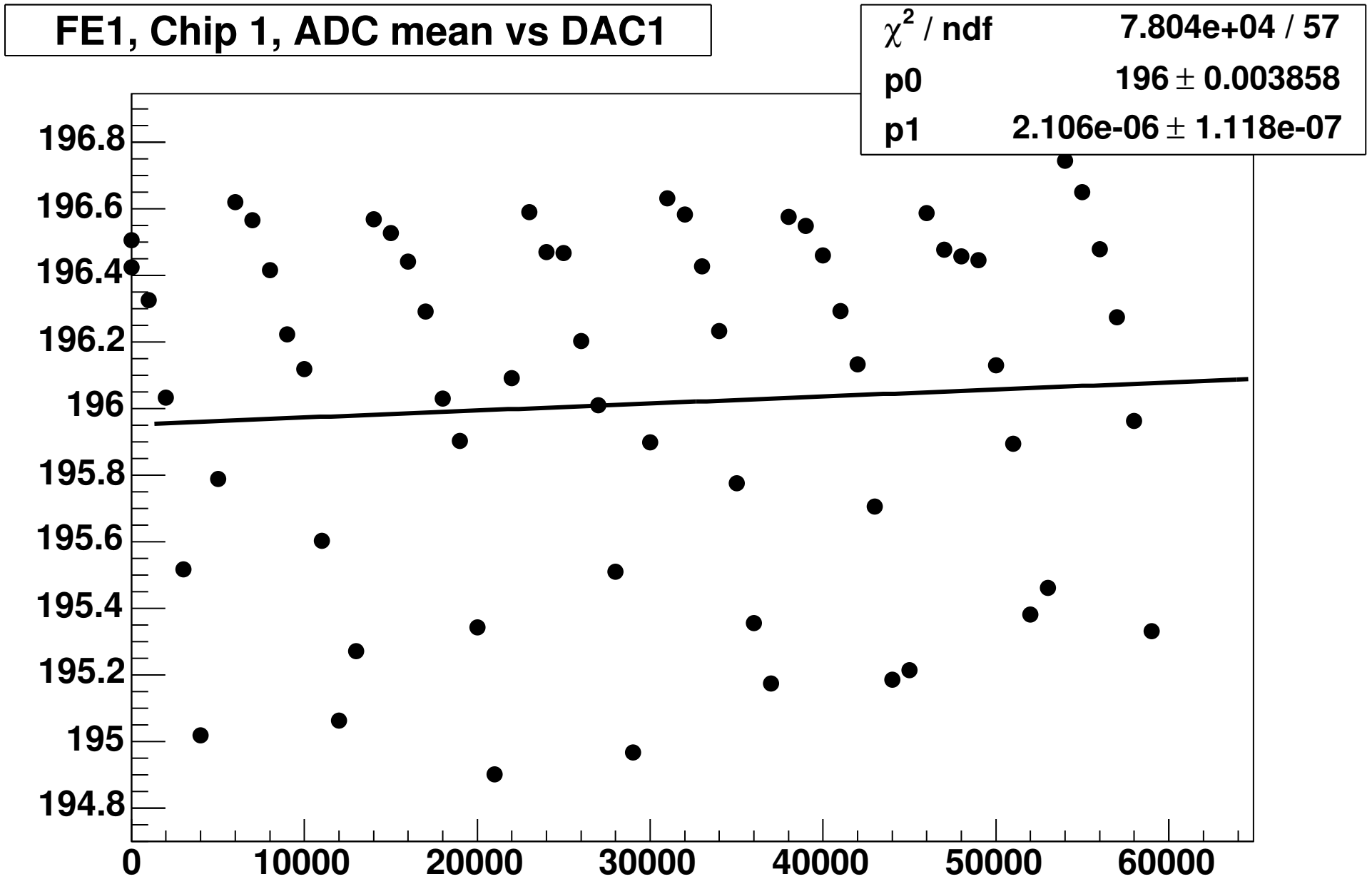

FE1, Chip 0, ADC noise vs DAC1
4.45
4.4
4.35
4.3
4.25
4.2
4.15
4.1
4.05
0
10000
20000
30000
40000
50000
60000

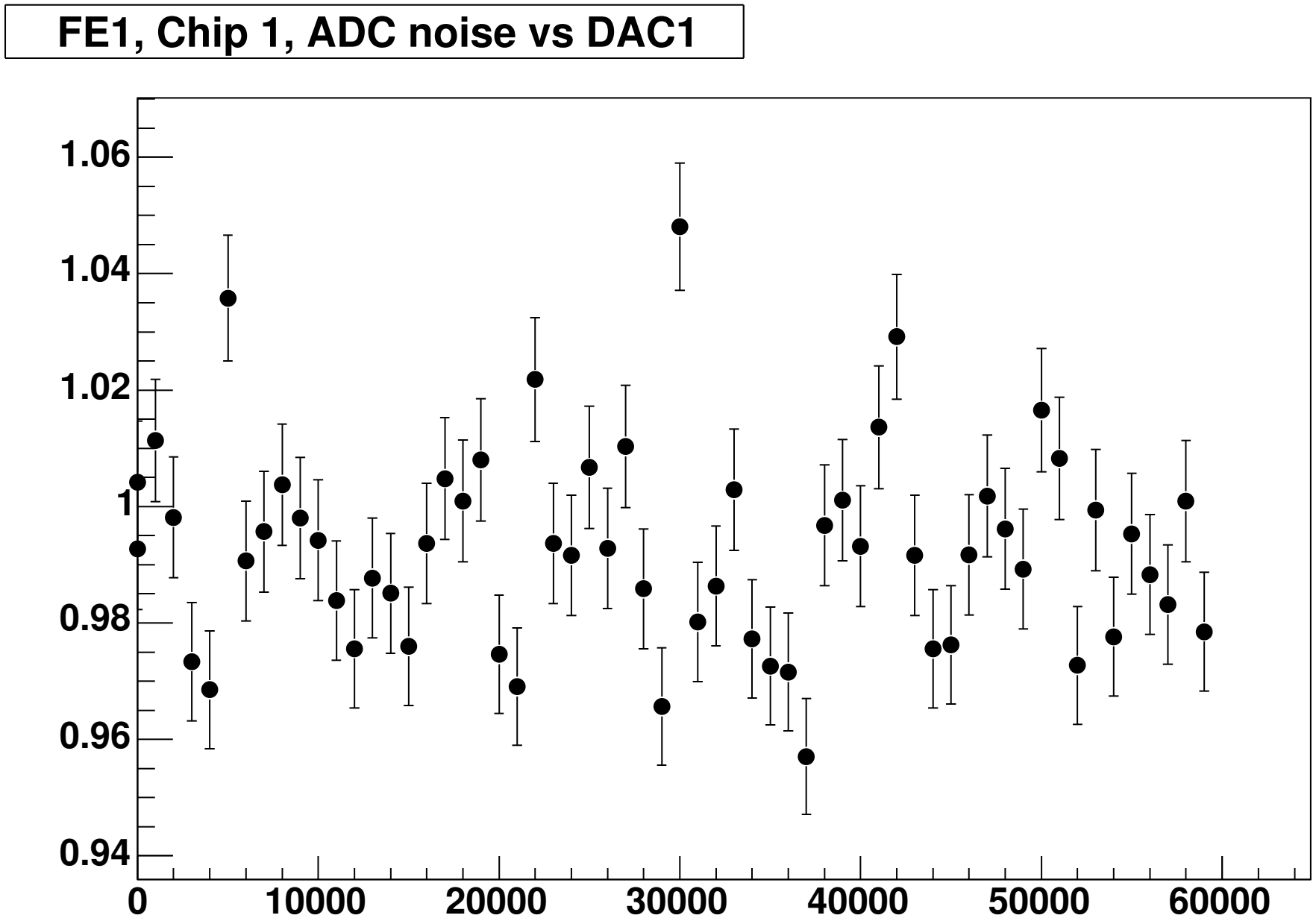

FE1, Chip 0, ADC residuals vs DAC1
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
0
10000
20000
30000
40000
50000
60000

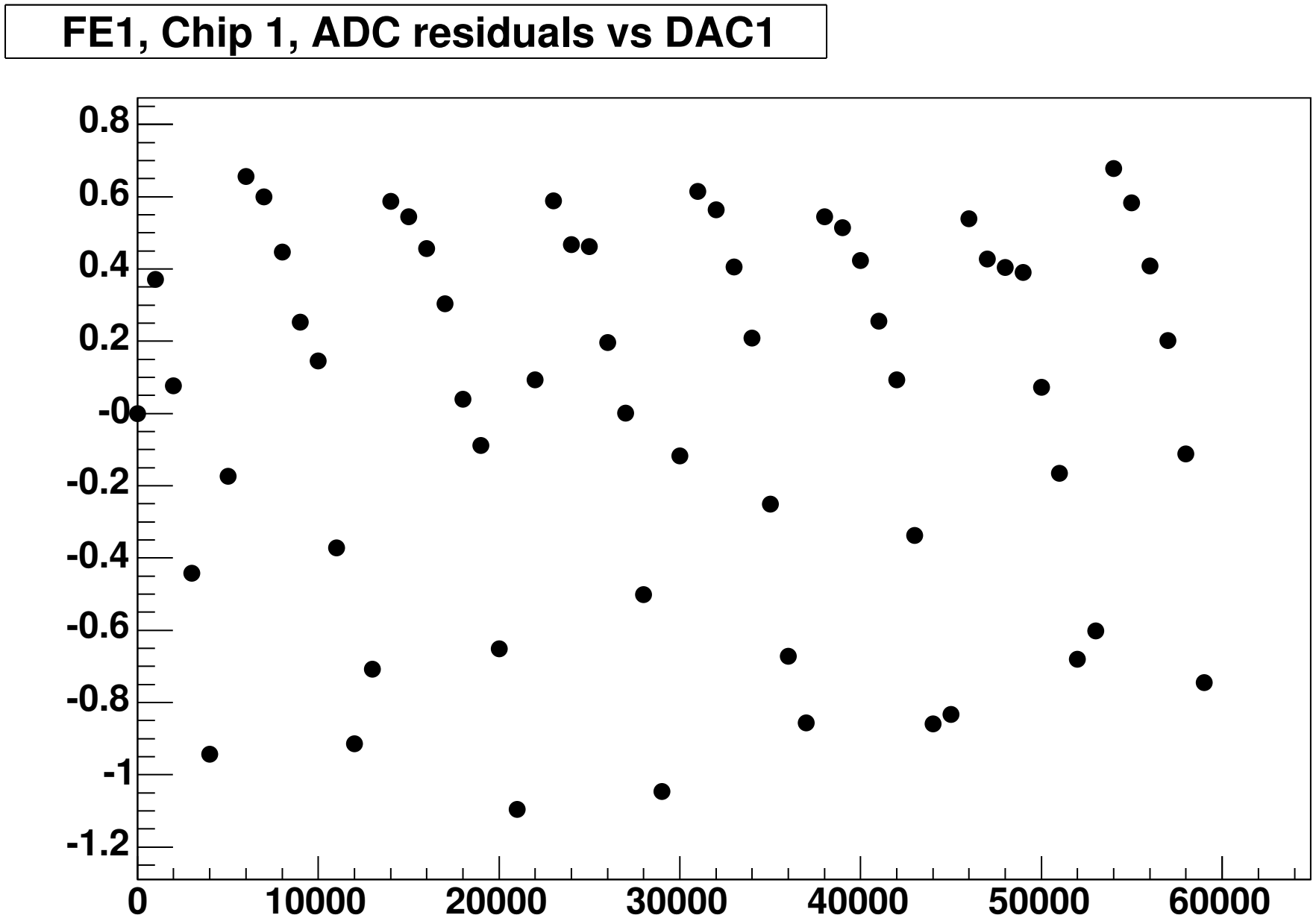

FE1, Chip 1, ADC mean vs DAC0
χ² / ndf 5.635e+04 / 57
p0 47.05 ± 0.004293
p1 0.2302 ± 1.407e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

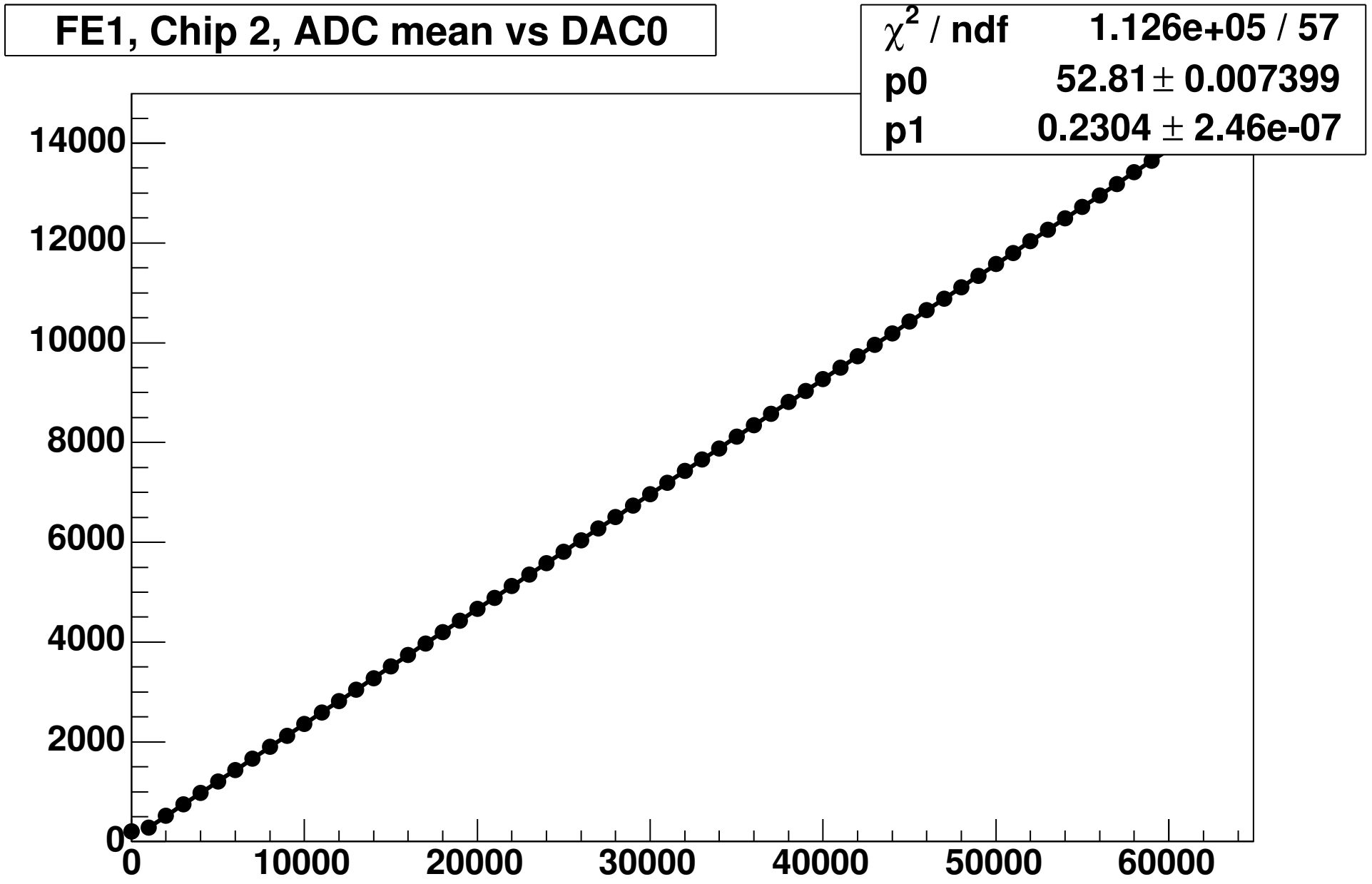

FE1, Chip 1, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

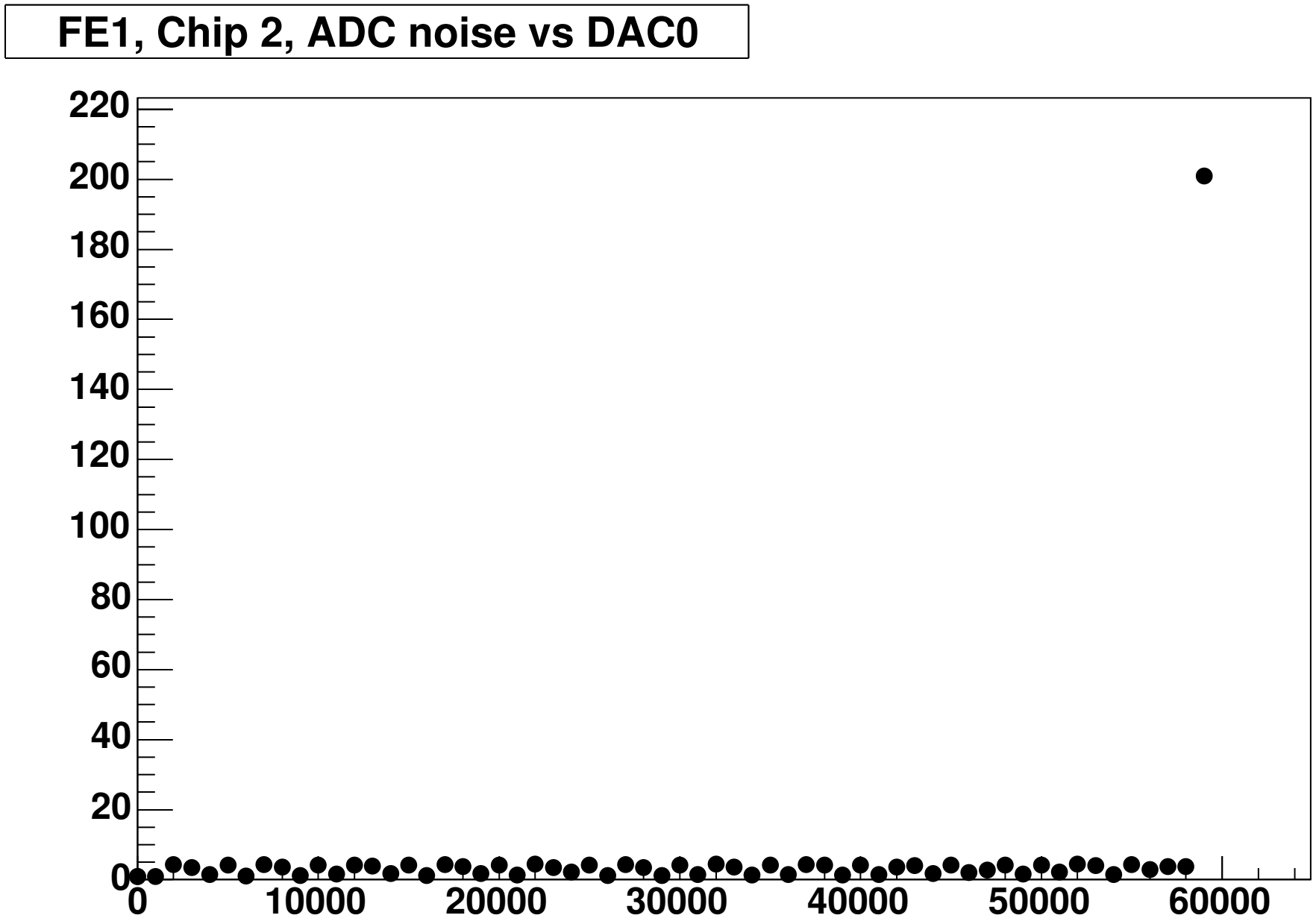

FE1, Chip 1, ADC residuals vs DAC0
2
1
0
-1
-2
-3
-4
-5
-6
0
10000
20000
30000
40000
50000
60000

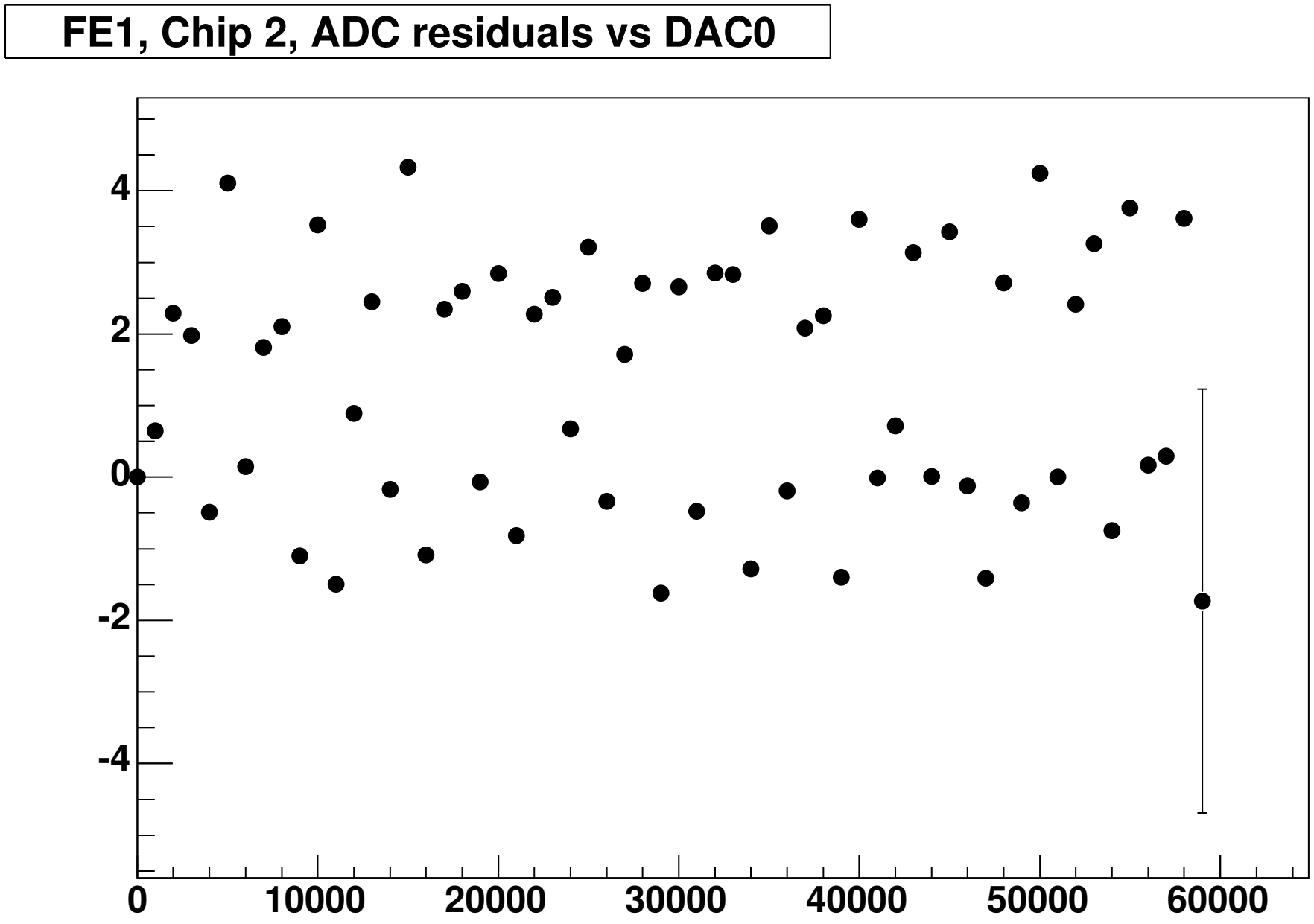

FE1, Chip 1, ADC mean vs DAC1
χ² / ndf 7.804e+04 / 57
p0 196 ± 0.003858
p1 2.106e-06 ± 1.118e-07
196.8
196.6
196.4
196.2
196
195.8
195.6
195.4
195.2
195
194.8
0
10000
20000
30000
40000
50000
60000

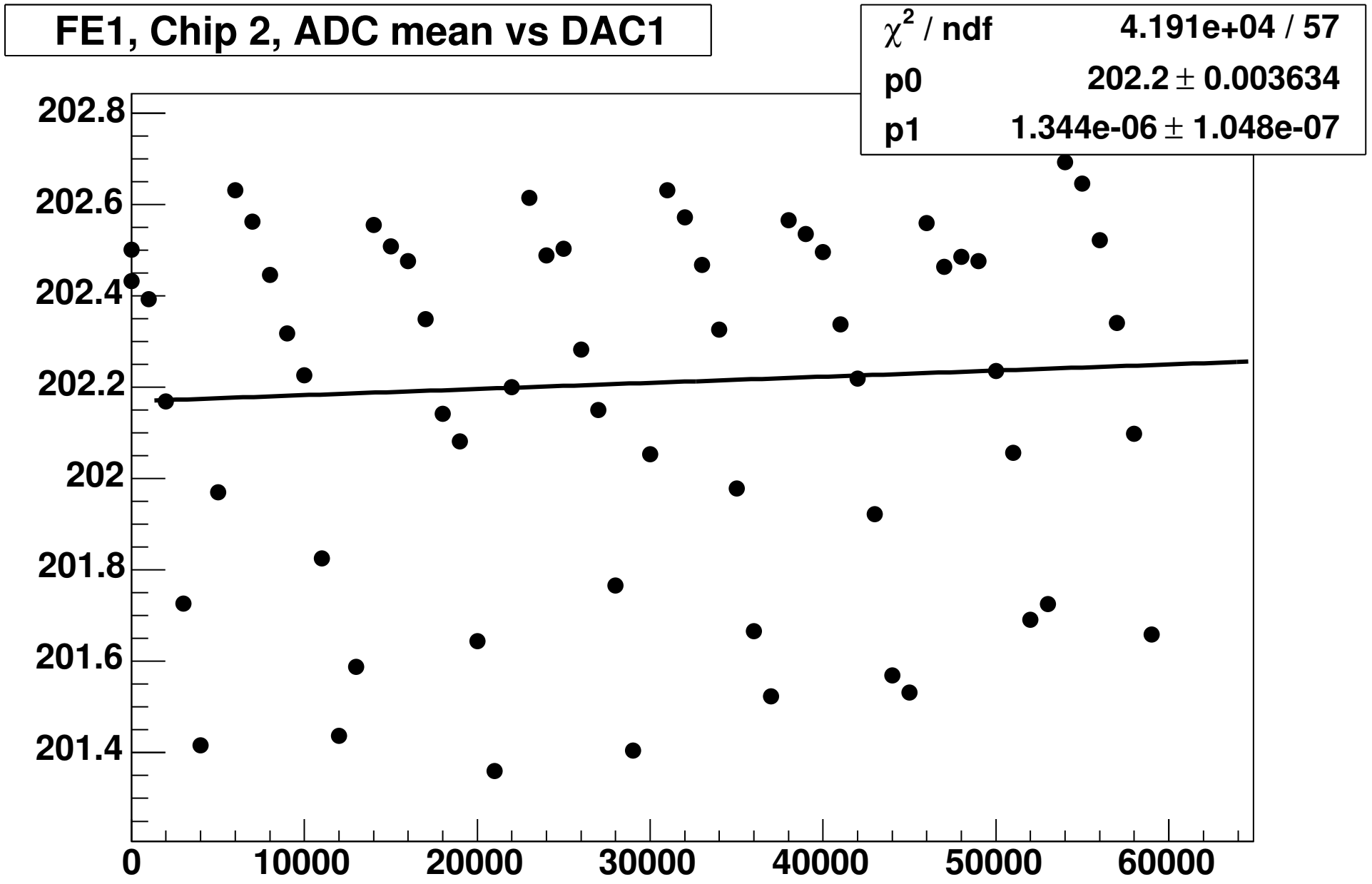

FE1, Chip 1, ADC noise vs DAC1
1.06
1.04
1.02
1
0.98
0.96
0.94
0
10000
20000
30000
40000
50000
60000

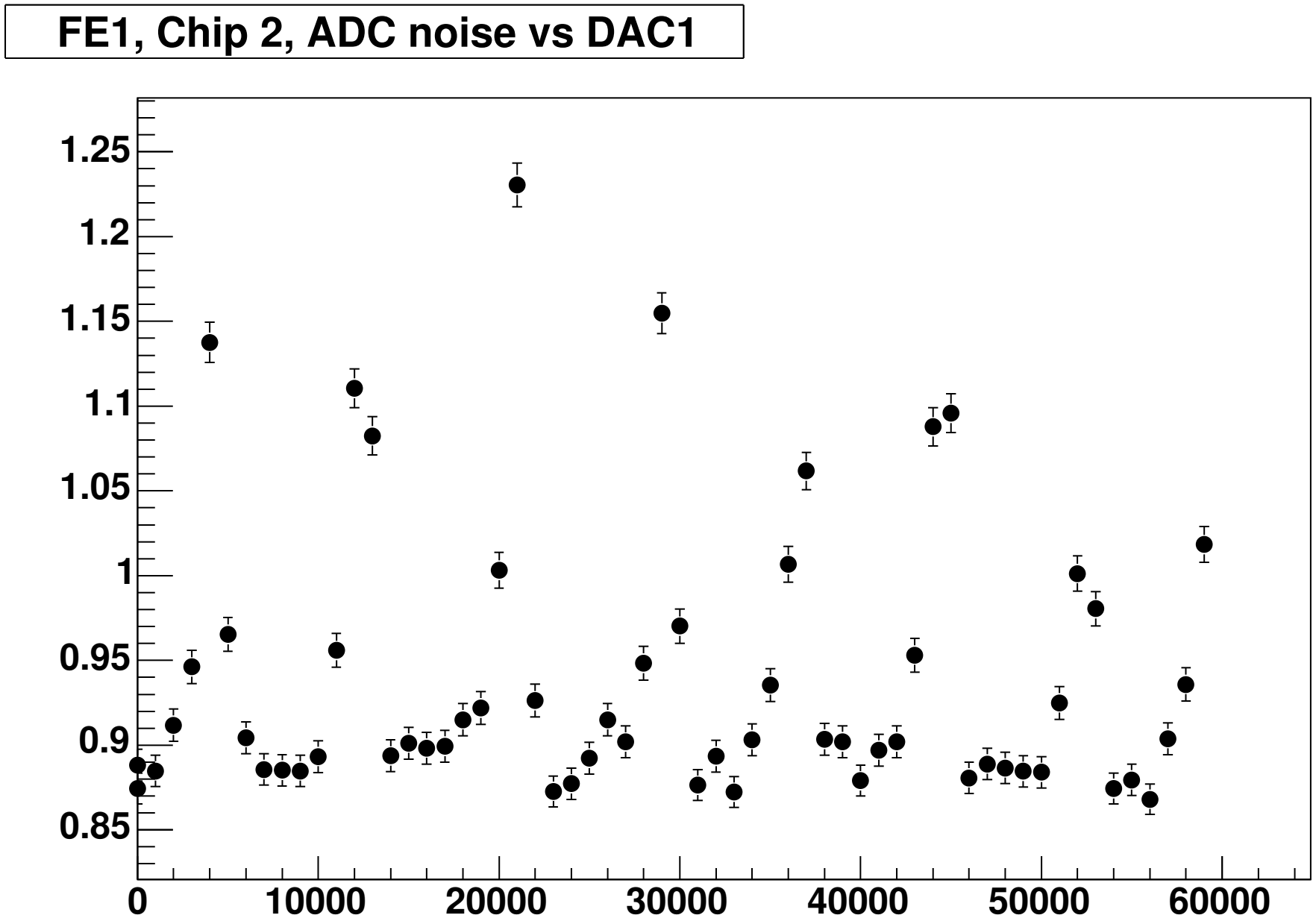

FE1, Chip 1, ADC residuals vs DAC1
0.8
0.6
0.4
0.2
-0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
0
10000
20000
30000
40000
50000
60000

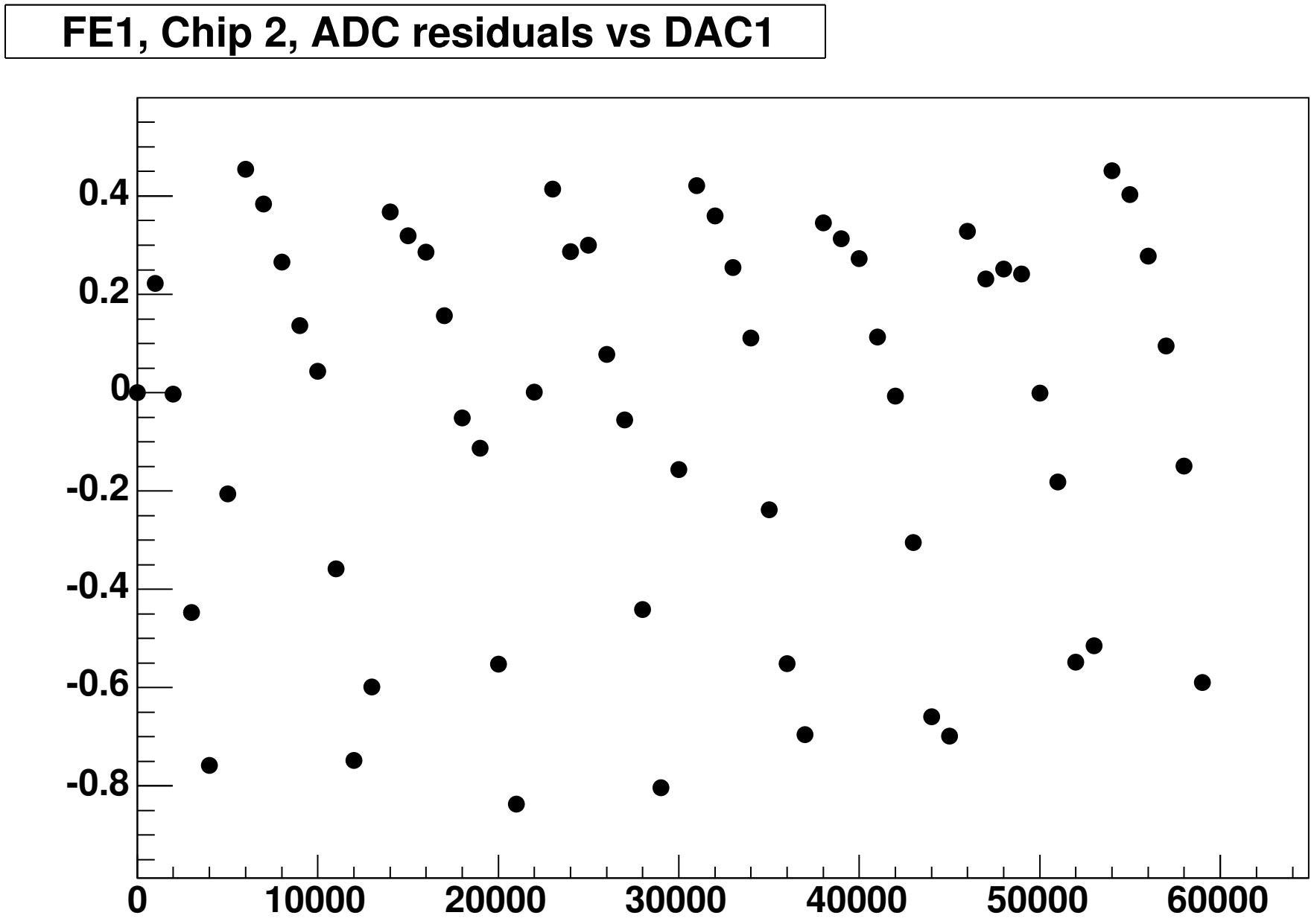

FE1, Chip 2, ADC mean vs DAC0
χ² / ndf 1.126e+05 / 57
p0 52.81 ± 0.007399
p1 0.2304 ± 2.46e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

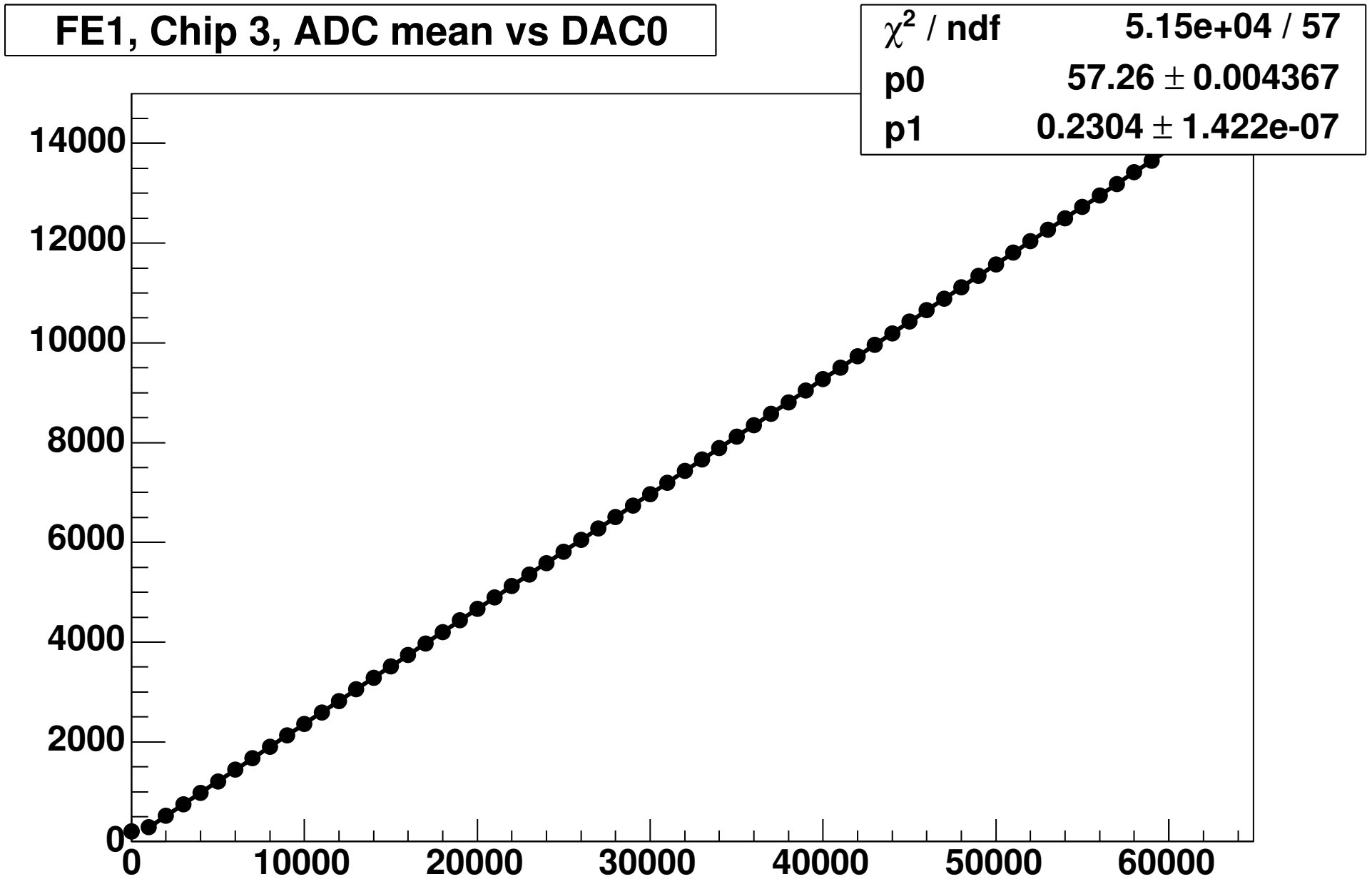

FE1, Chip 2, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

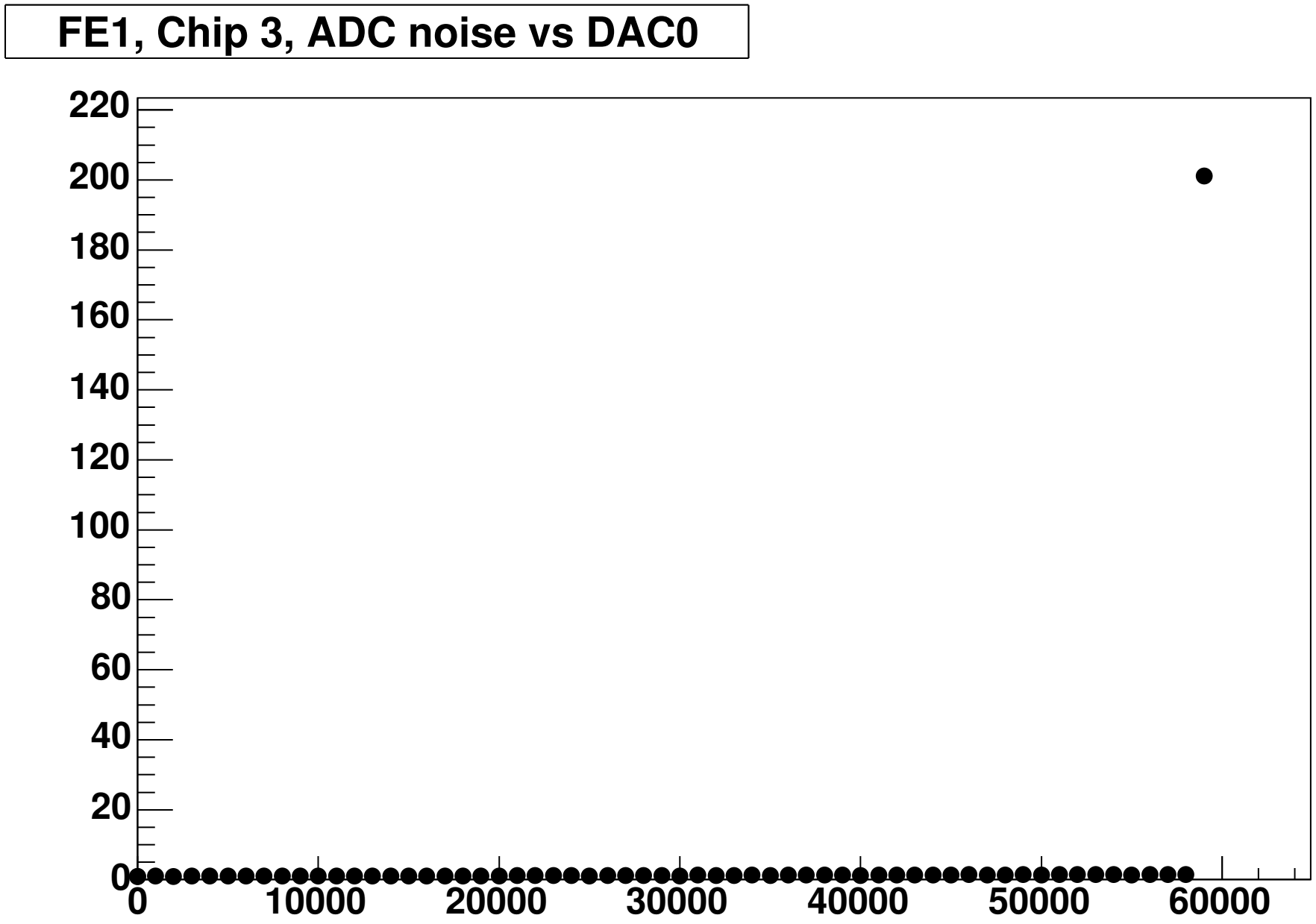

FE1, Chip 2, ADC residuals vs DAC0
4
2
0
-2
-4
0
10000
20000
30000
40000
50000
60000

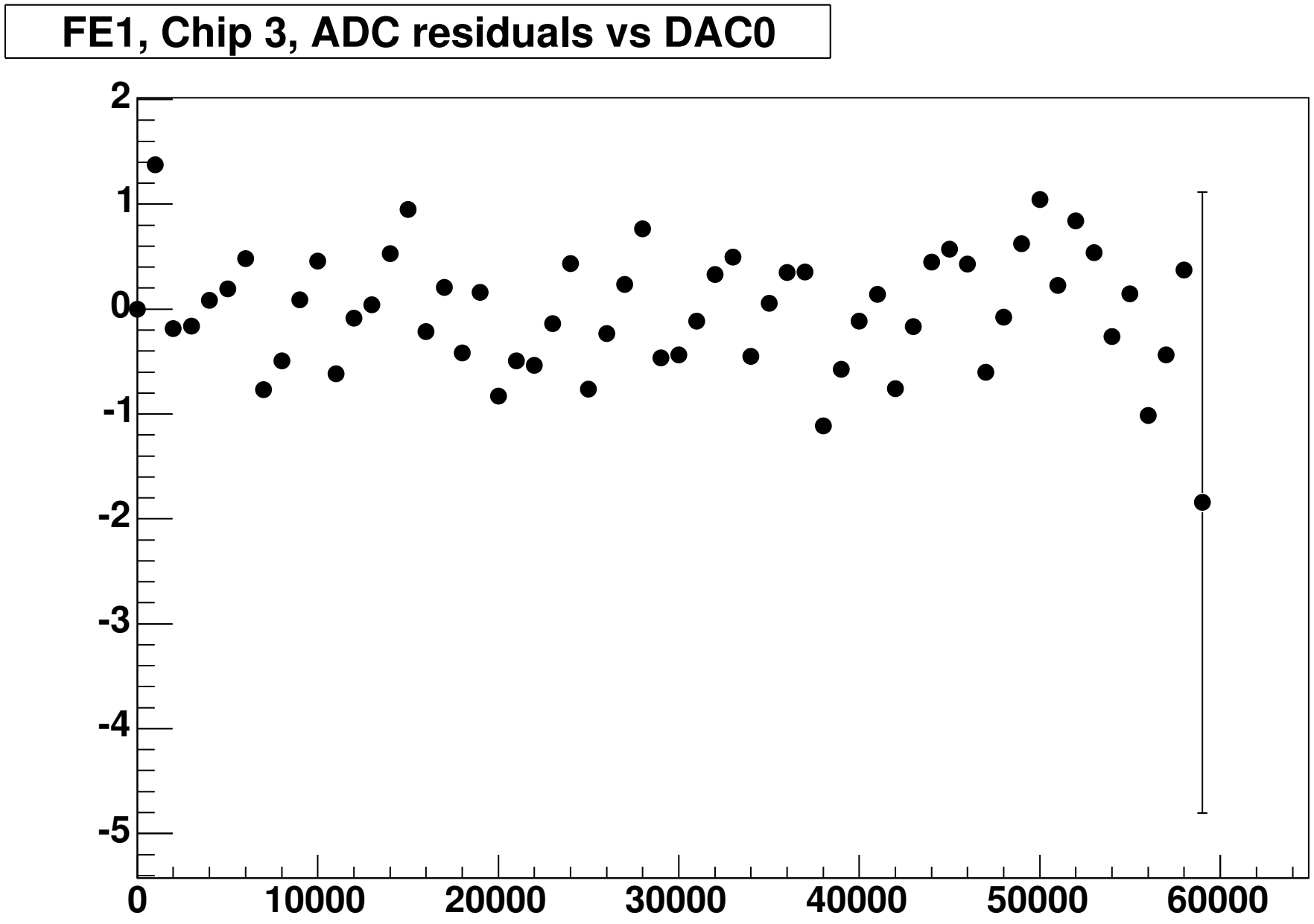

FE1, Chip 2, ADC mean vs DAC1
χ² / ndf 4.191e+04 / 57
p0 202.2 ± 0.003634
p1 1.344e-06 ± 1.048e-07
202.8
202.6
202.4
202.2
202
201.8
201.6
201.4
0
10000
20000
30000
40000
50000
60000

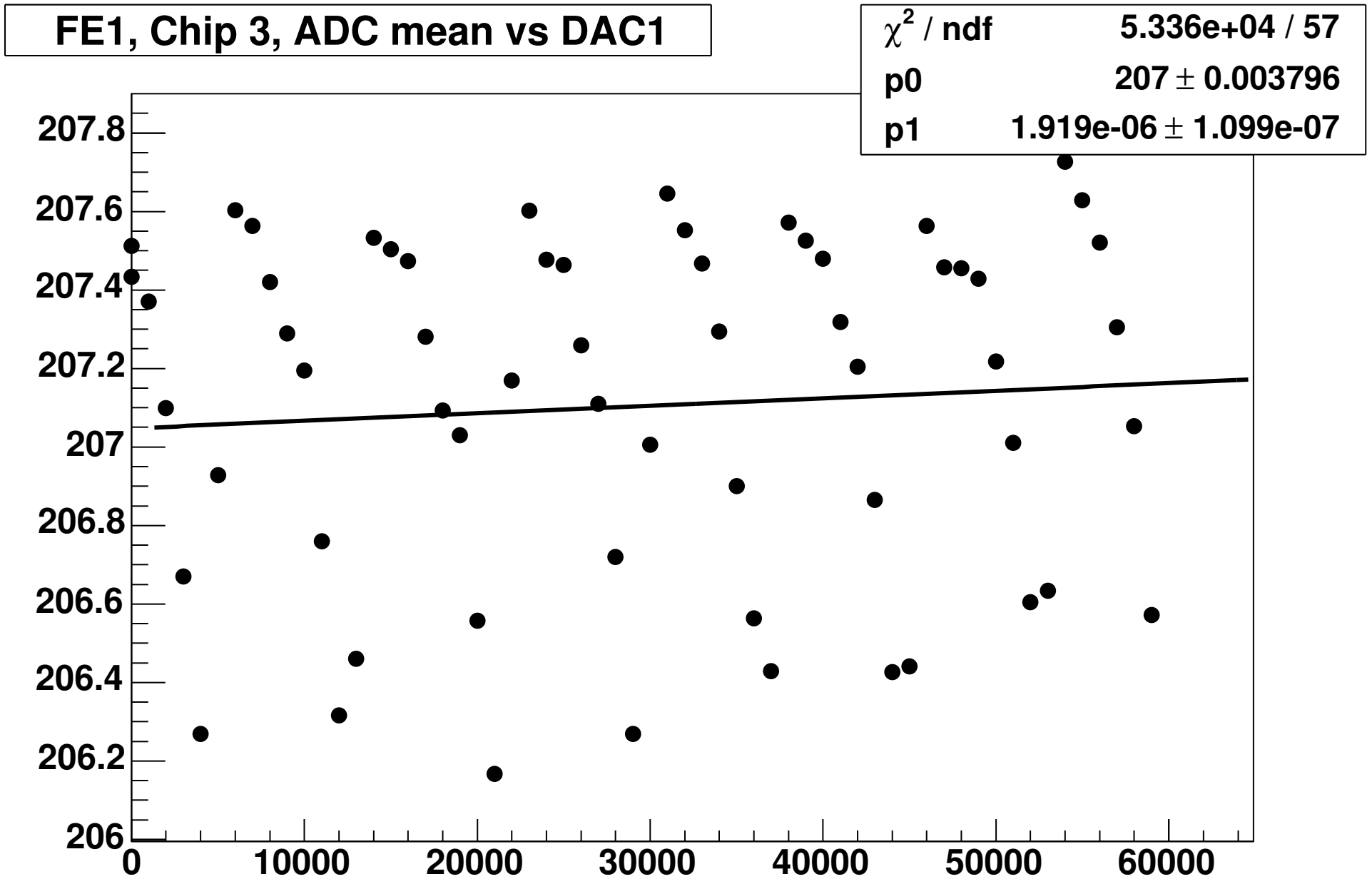

FE1, Chip 2, ADC noise vs DAC1
1.25
1.2
1.15
1.1
1.05
1
0.95
0.9
0.85
0
10000
20000
30000
40000
50000
60000

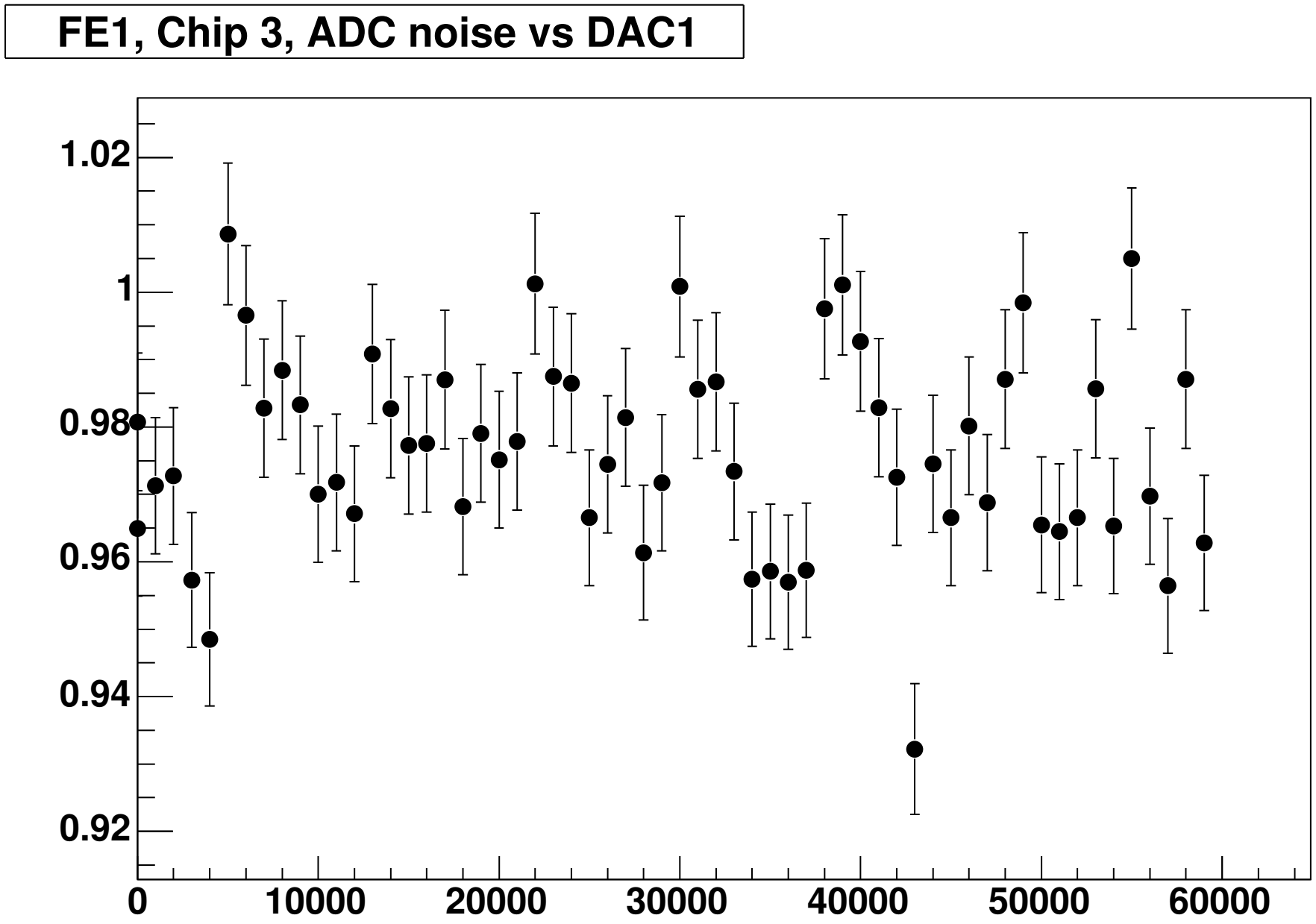

FE1, Chip 2, ADC residuals vs DAC1
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
0
10000
20000
30000
40000
50000
60000

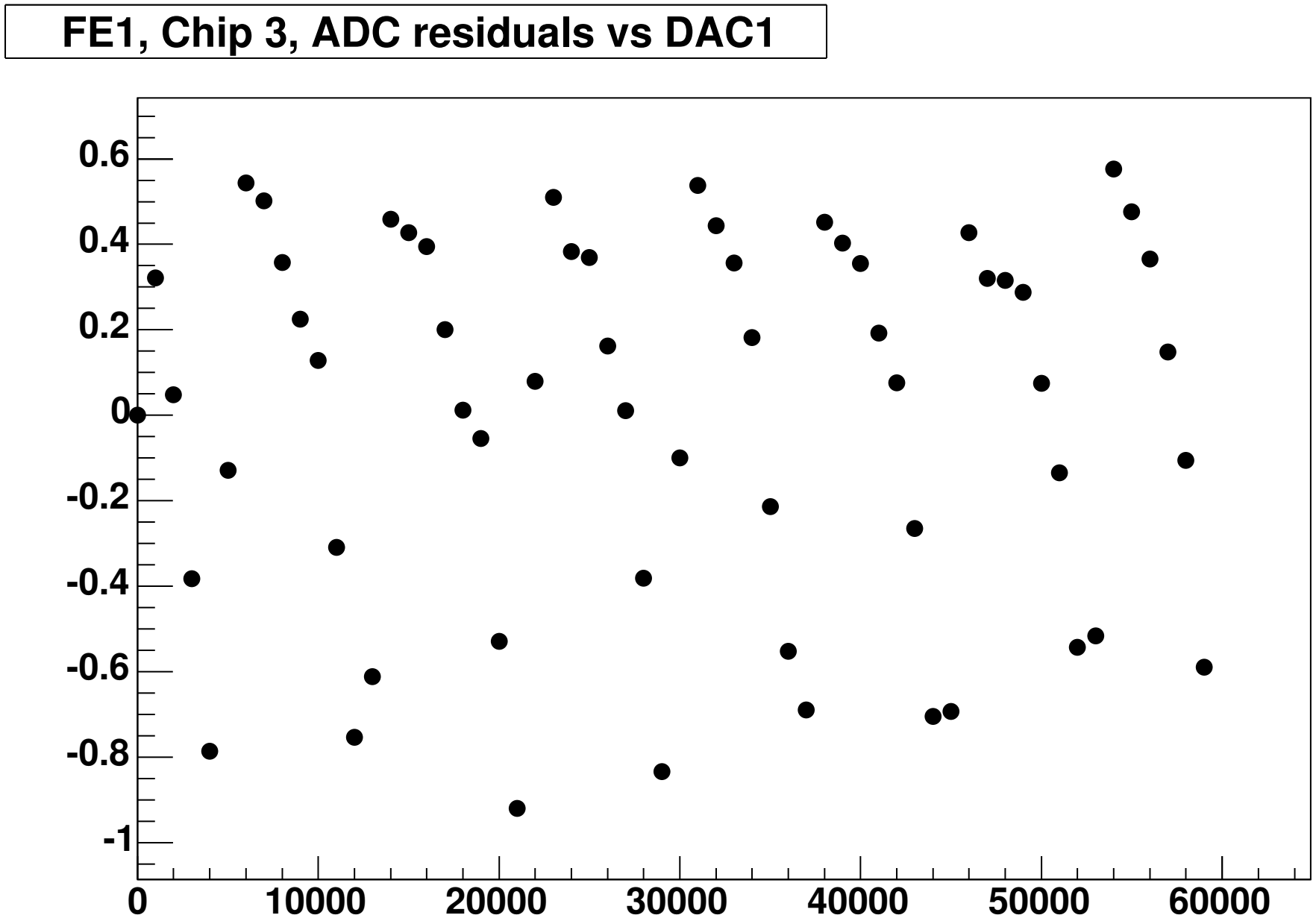

FE1, Chip 3, ADC mean vs DAC0
χ² / ndf 5.15e+04 / 57
p0 57.26 ± 0.004367
p1 0.2304 ± 1.422e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

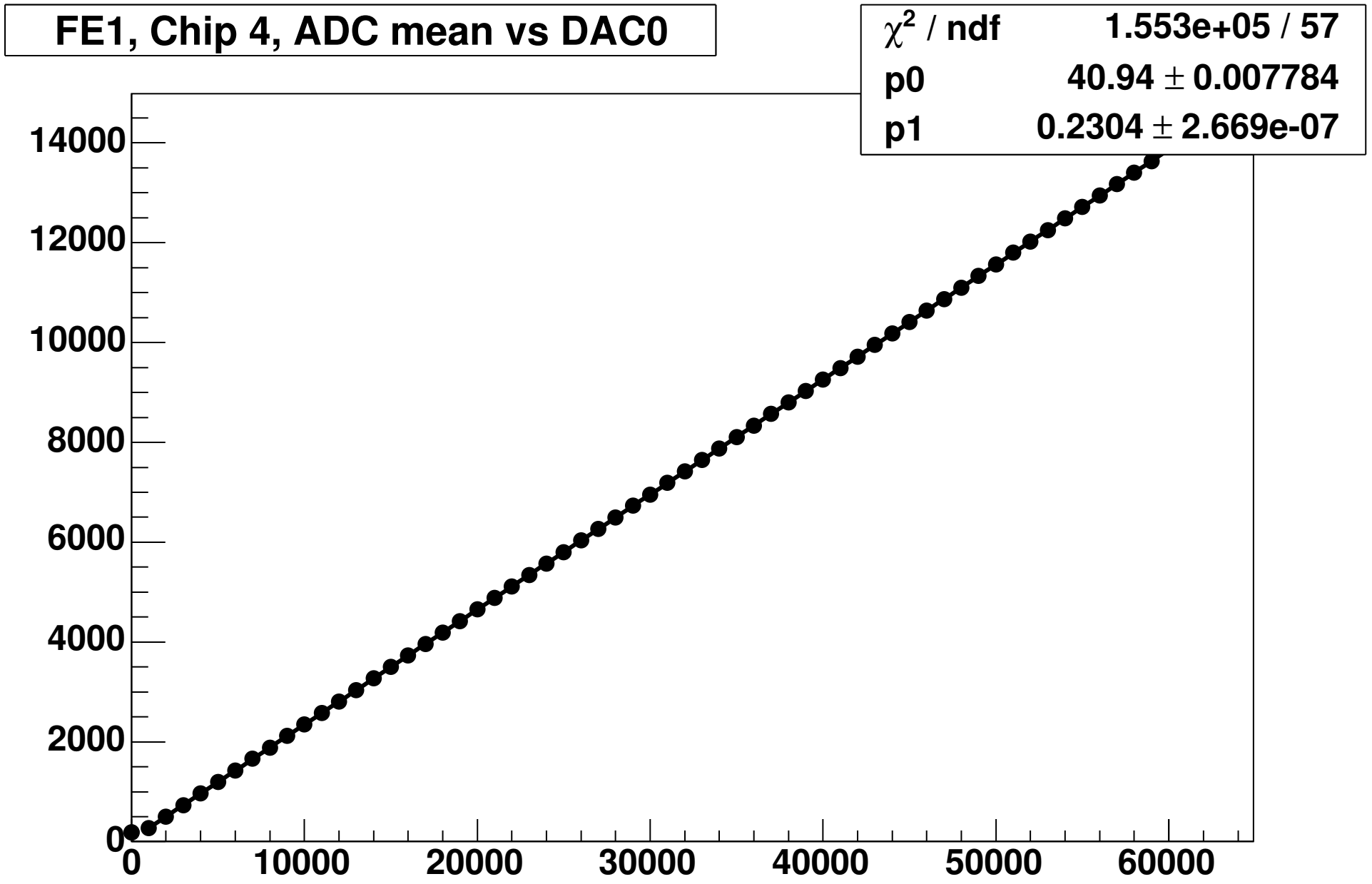

FE1, Chip 3, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

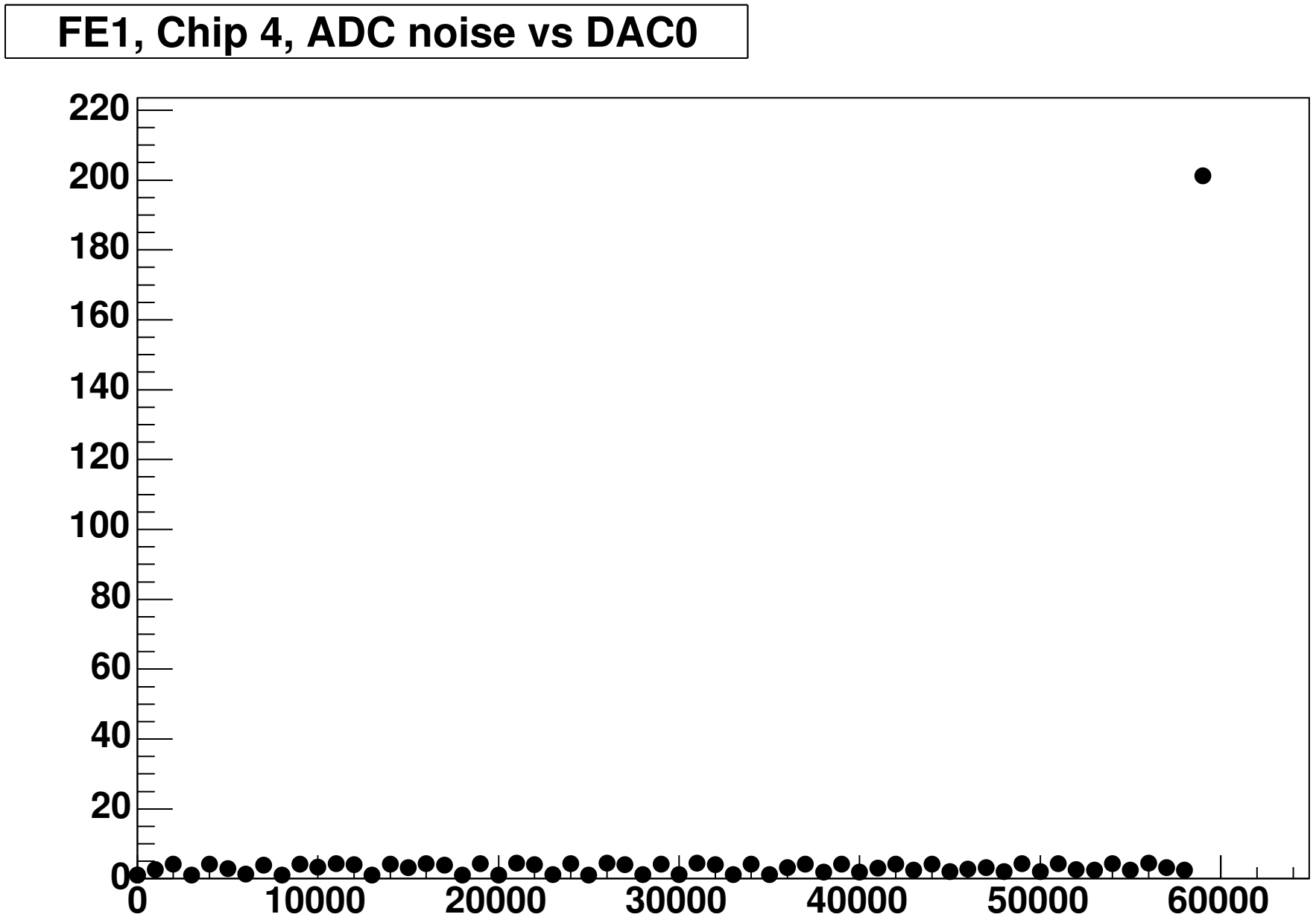

FE1, Chip 3, ADC residuals vs DAC0
2
1
0
-1
-2
-3
-4
-5
0
10000
20000
30000
40000
50000
60000

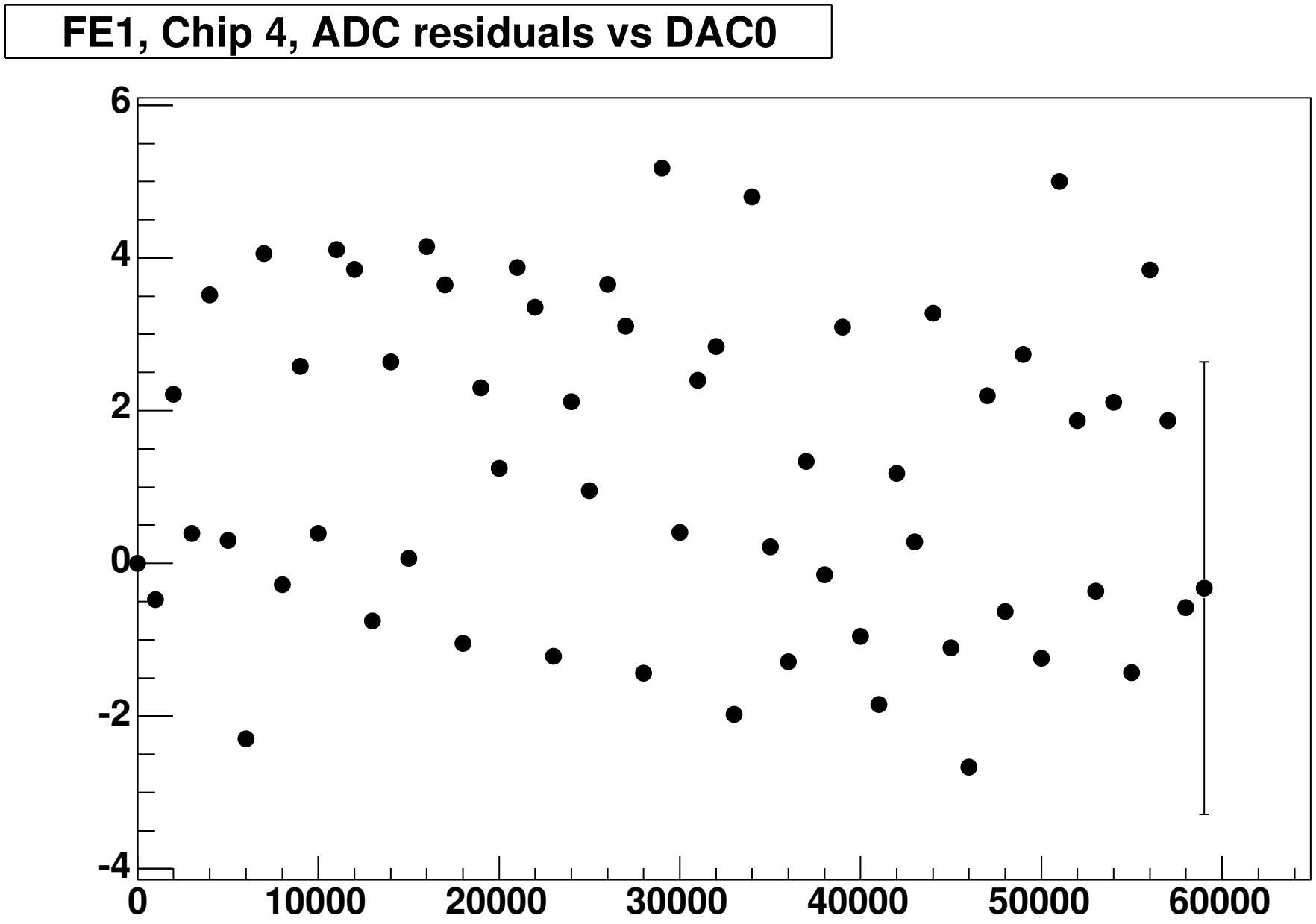

FE1, Chip 3, ADC mean vs DAC1
χ² / ndf 5.336e+04 / 57
p0 207 ± 0.003796
p1 1.919e-06 ± 1.099e-07
207.8
207.6
207.4
207.2
207
206.8
206.6
206.4
206.2
206
0
10000
20000
30000
40000
50000
60000

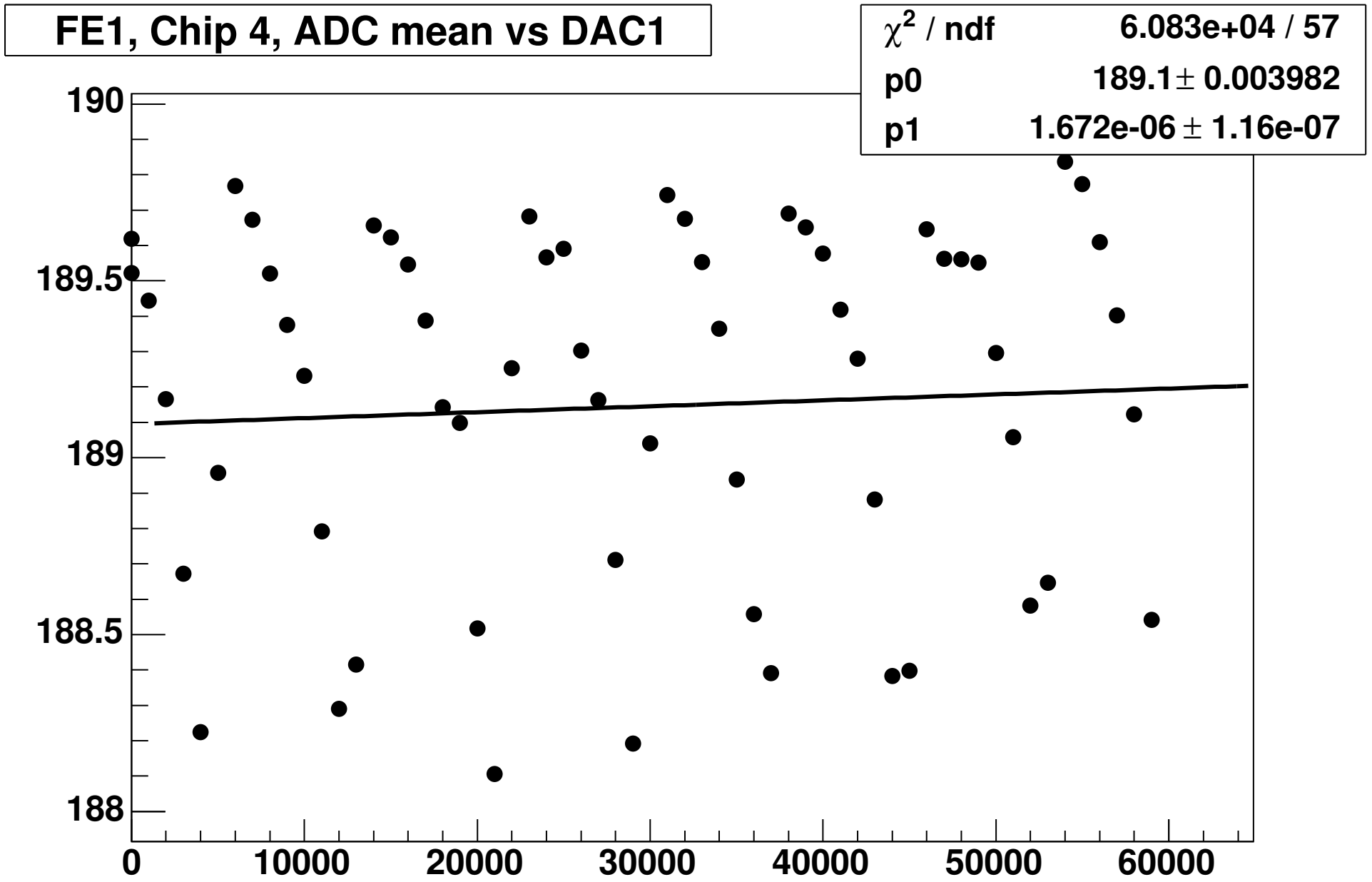

FE1, Chip 3, ADC noise vs DAC1
1.02
1
0.98
0.96
0.94
0.92
0
10000
20000
30000
40000
50000
60000

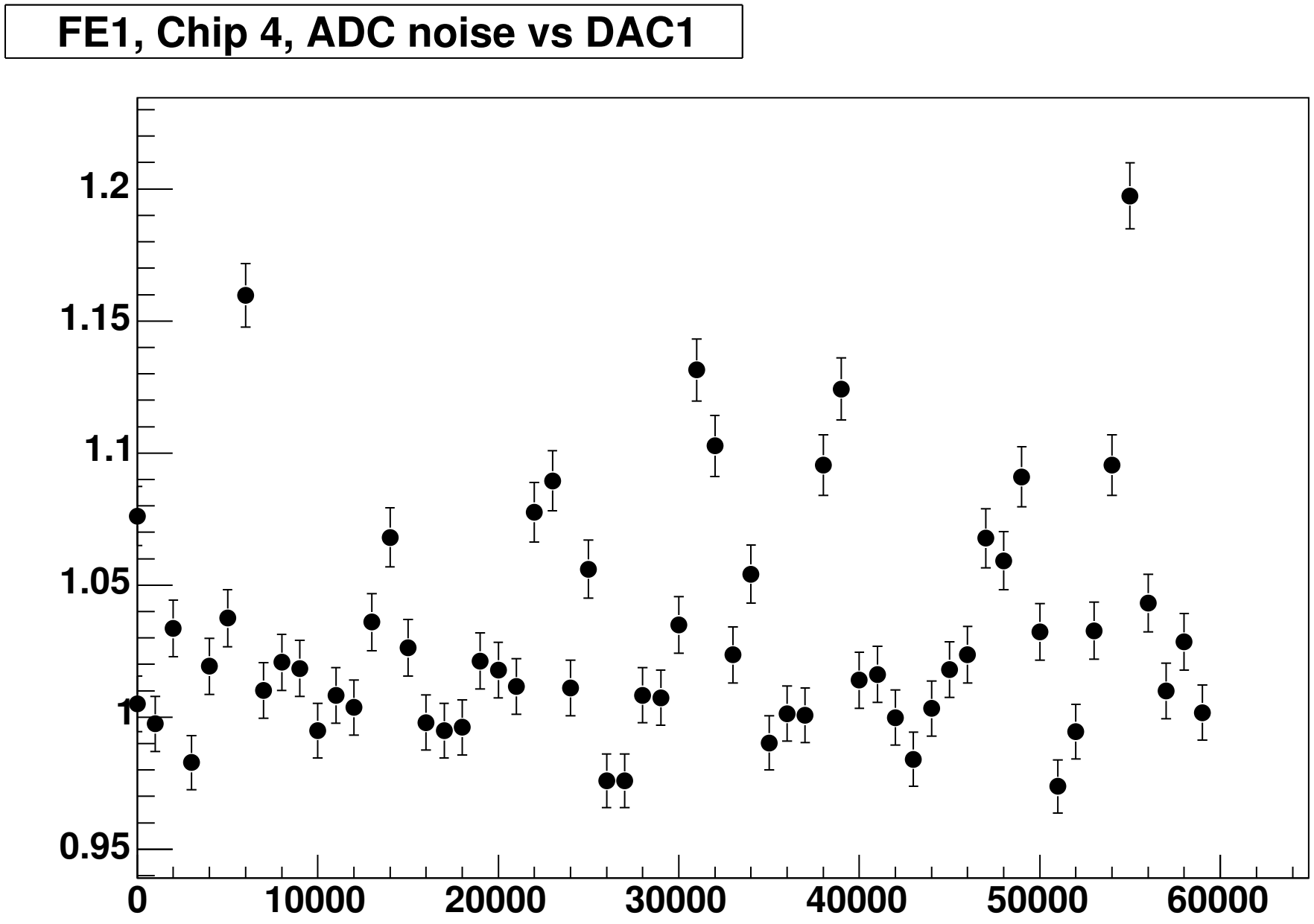

FE1, Chip 3, ADC residuals vs DAC1
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
0
10000
20000
30000
40000
50000
60000

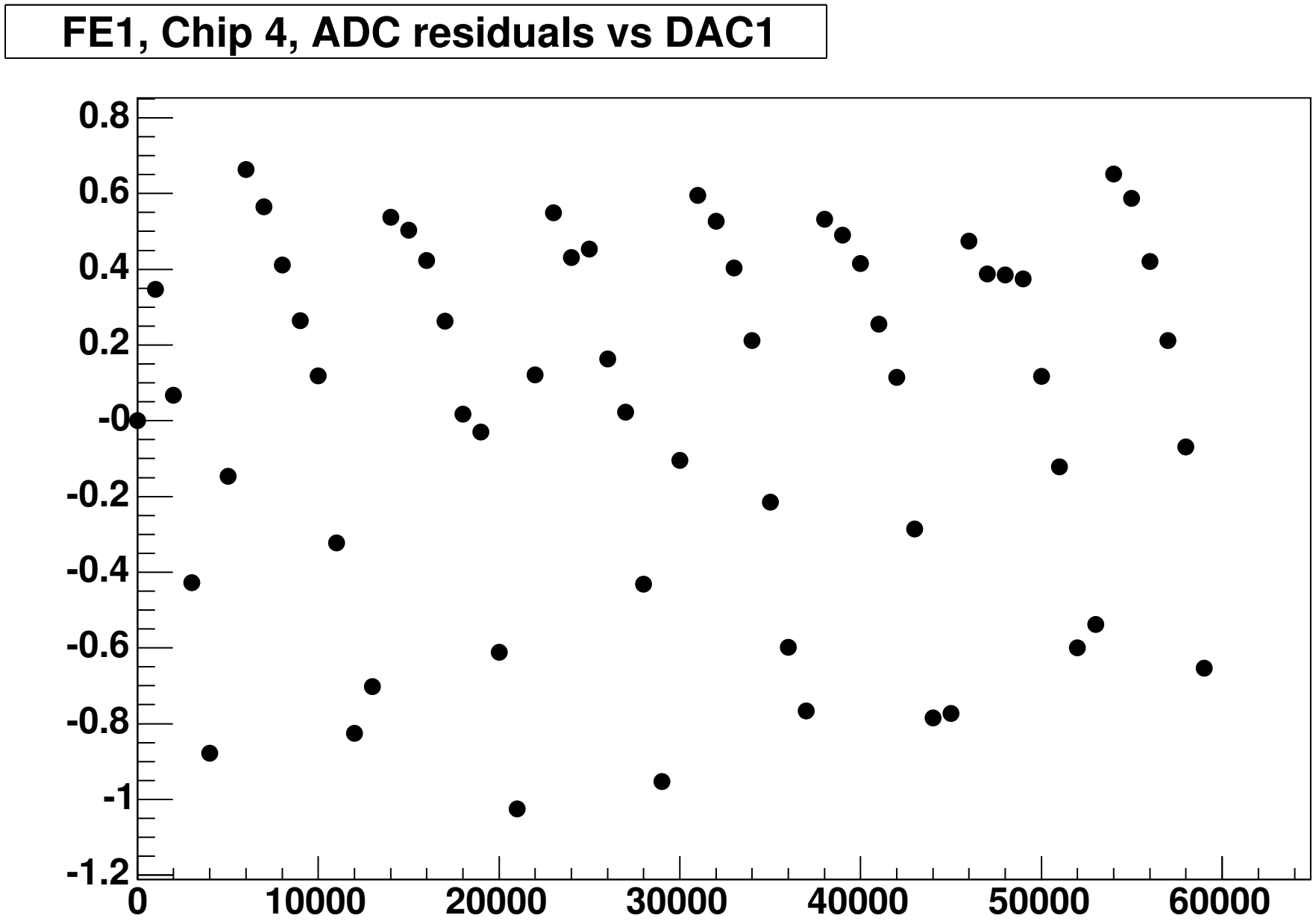

FE1, Chip 4, ADC mean vs DAC0
χ² / ndf 1.553e+05 / 57
p0 40.94 ± 0.007784
p1 0.2304 ± 2.669e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

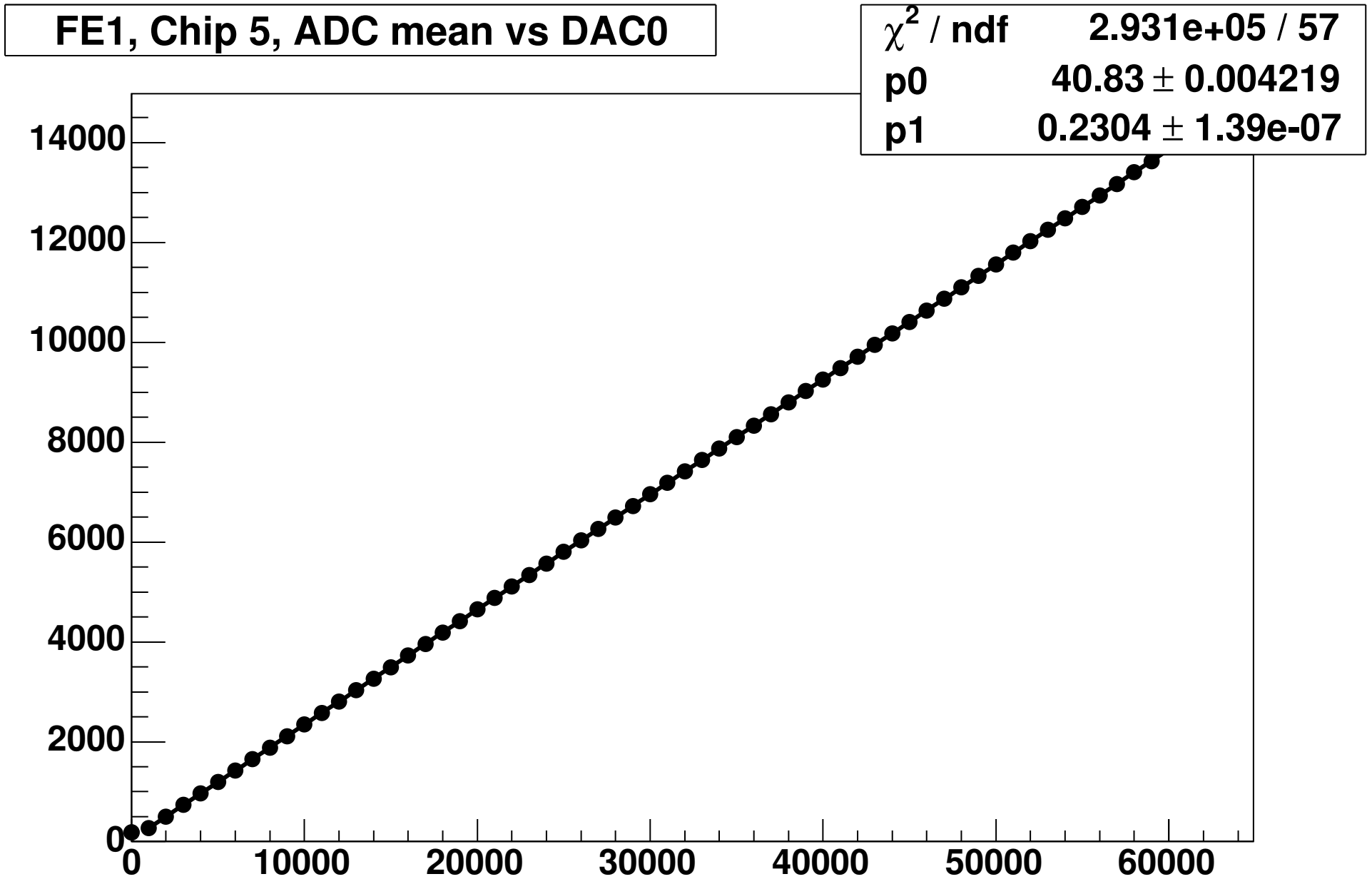

FE1, Chip 4, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

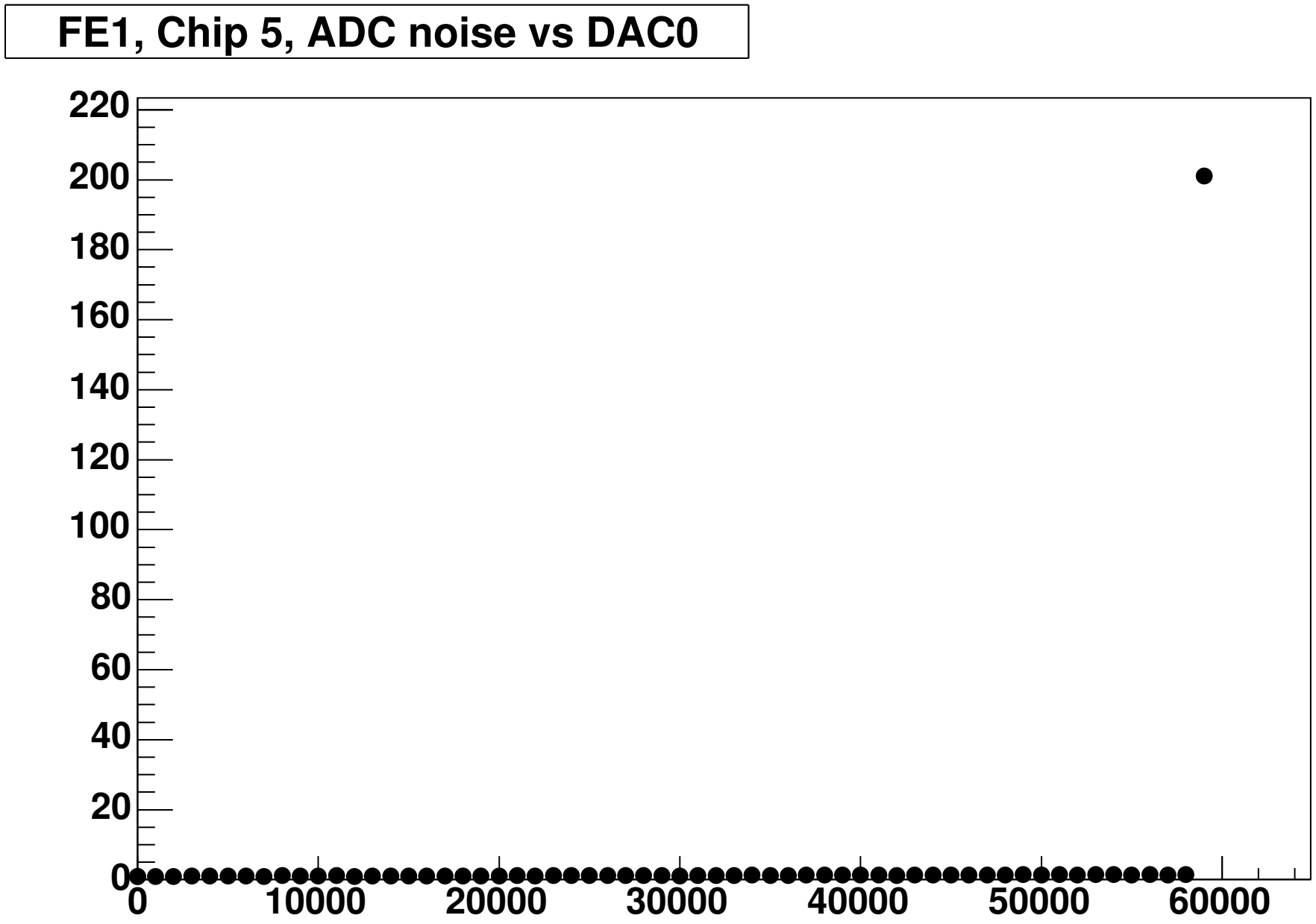

FE1, Chip 4, ADC residuals vs DAC0
6
4
2
0
-2
-4
0
10000
20000
30000
40000
50000
60000

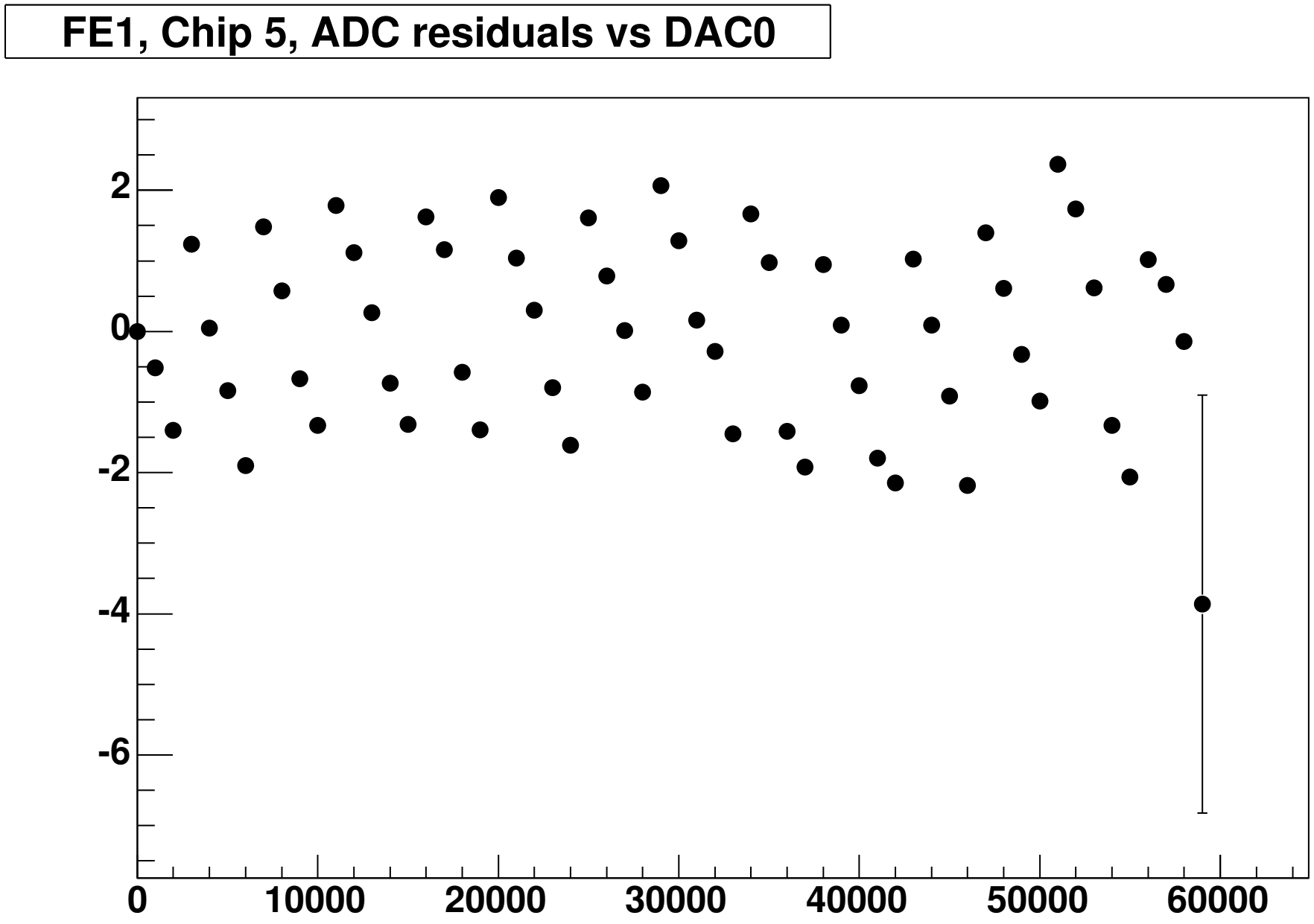

FE1, Chip 4, ADC mean vs DAC1
χ² / ndf 6.083e+04 / 57
p0 189.1 ± 0.003982
p1 1.672e-06 ± 1.16e-07
190
189.5
189
188.5
188
0
10000
20000
30000
40000
50000
60000

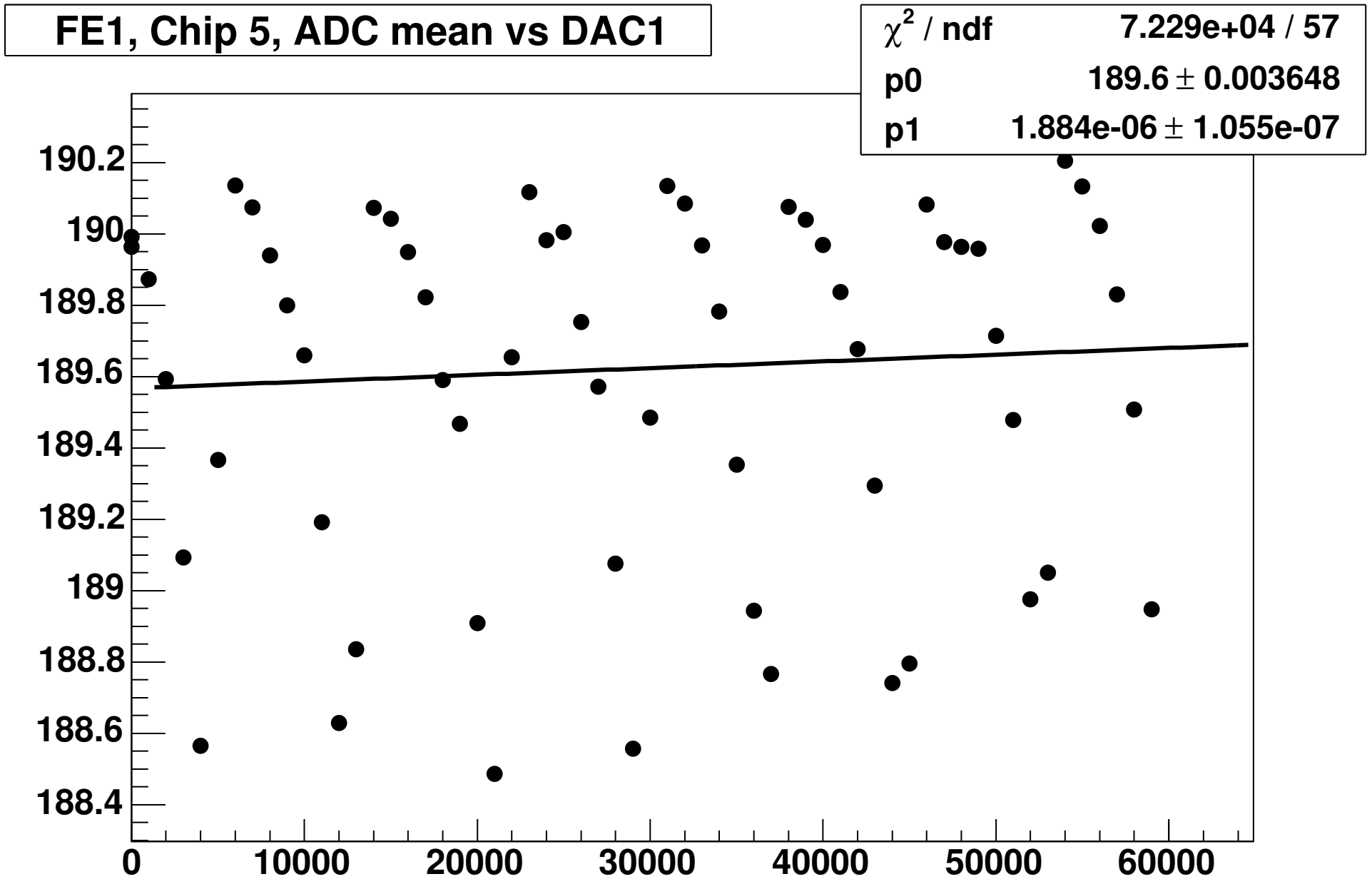

FE1, Chip 4, ADC noise vs DAC1
1.2
1.15
1.1
1.05
1
0.95
0
10000
20000
30000
40000
50000
60000

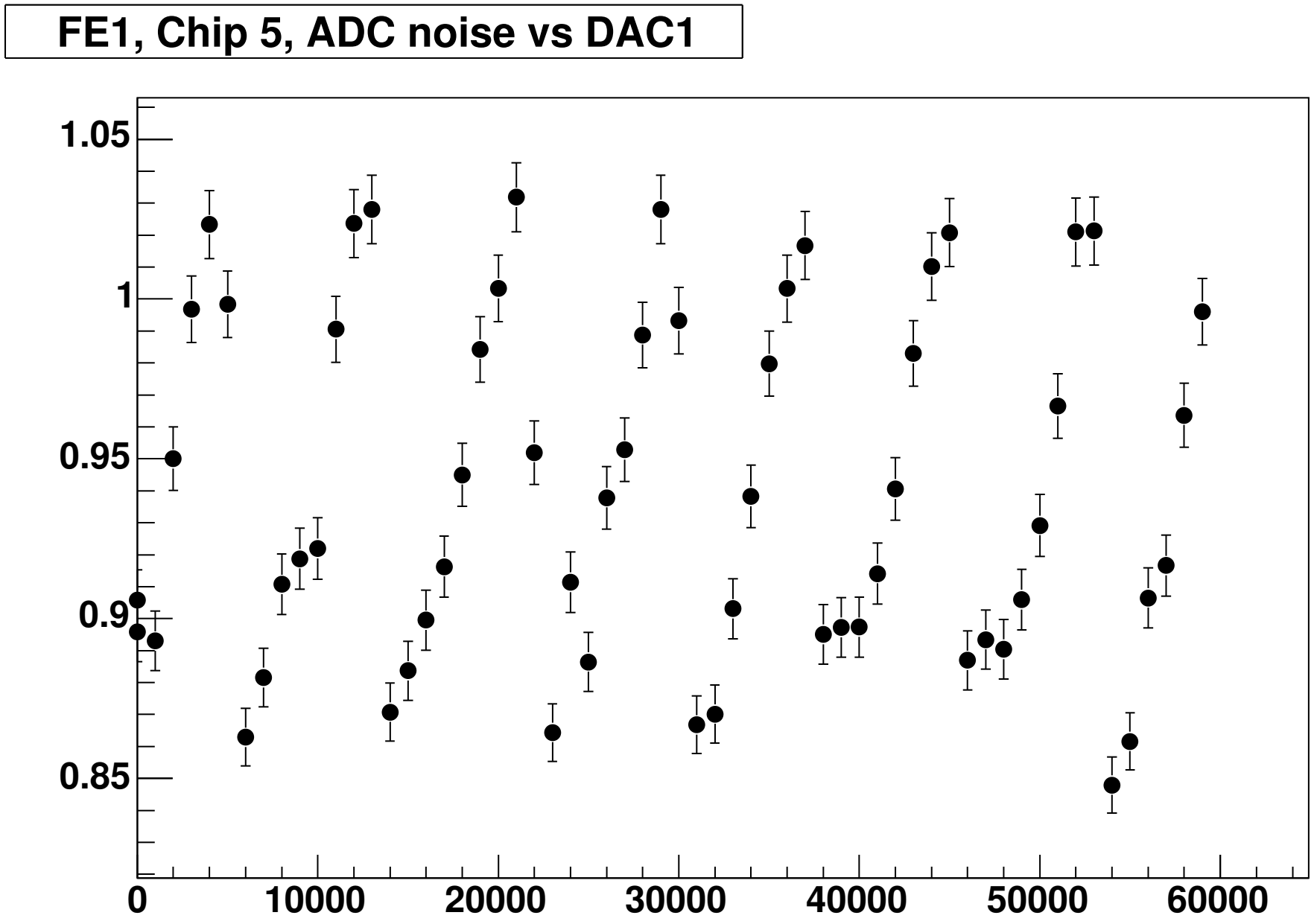

FE1, Chip 4, ADC residuals vs DAC1
0.8
0.6
0.4
0.2
-0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
0
10000
20000
30000
40000
50000
60000

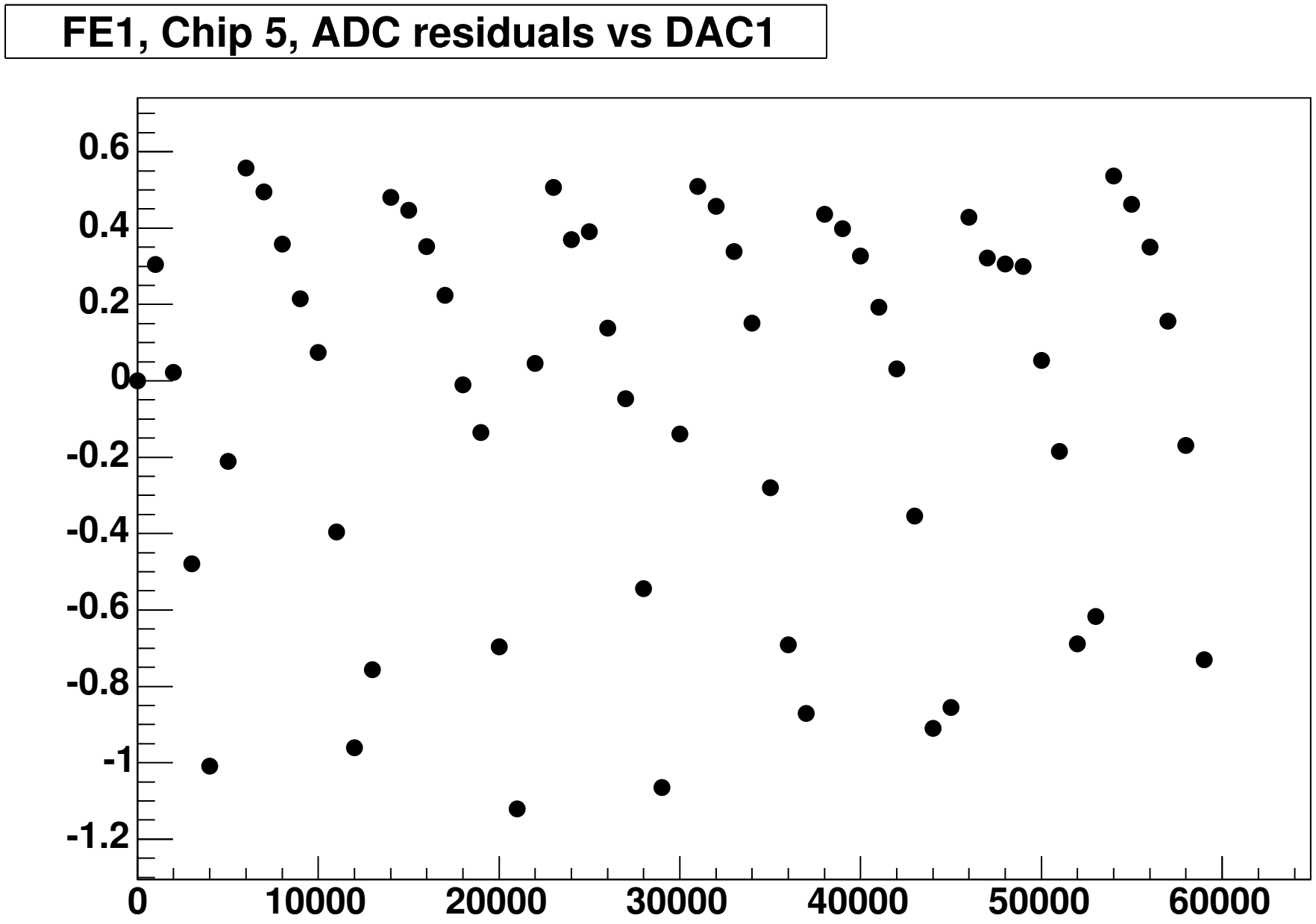

FE1, Chip 5, ADC mean vs DAC0
χ² / ndf 2.931e+05 / 57
p0 40.83 ± 0.004219
p1 0.2304 ± 1.39e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

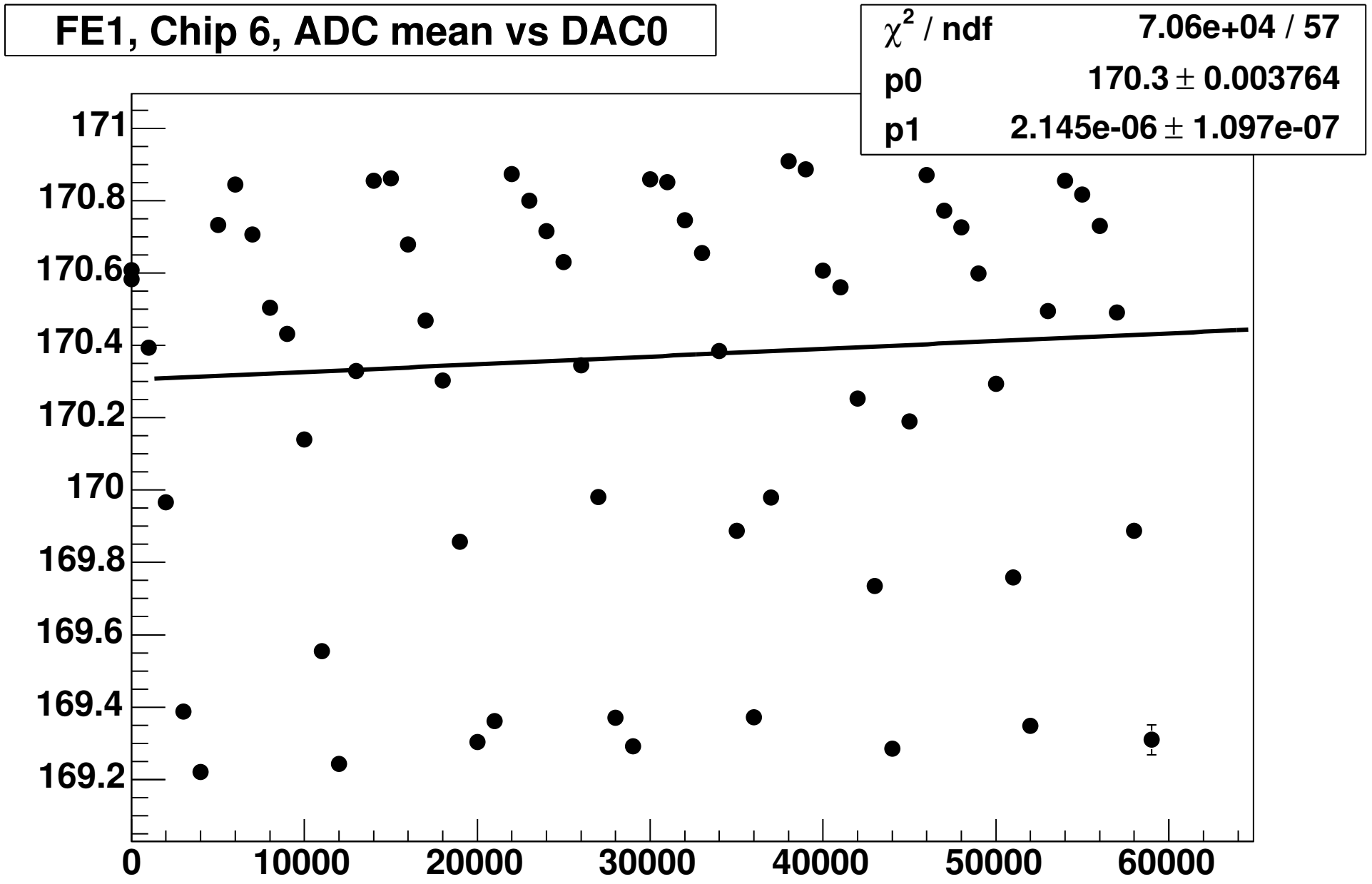

FE1, Chip 5, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

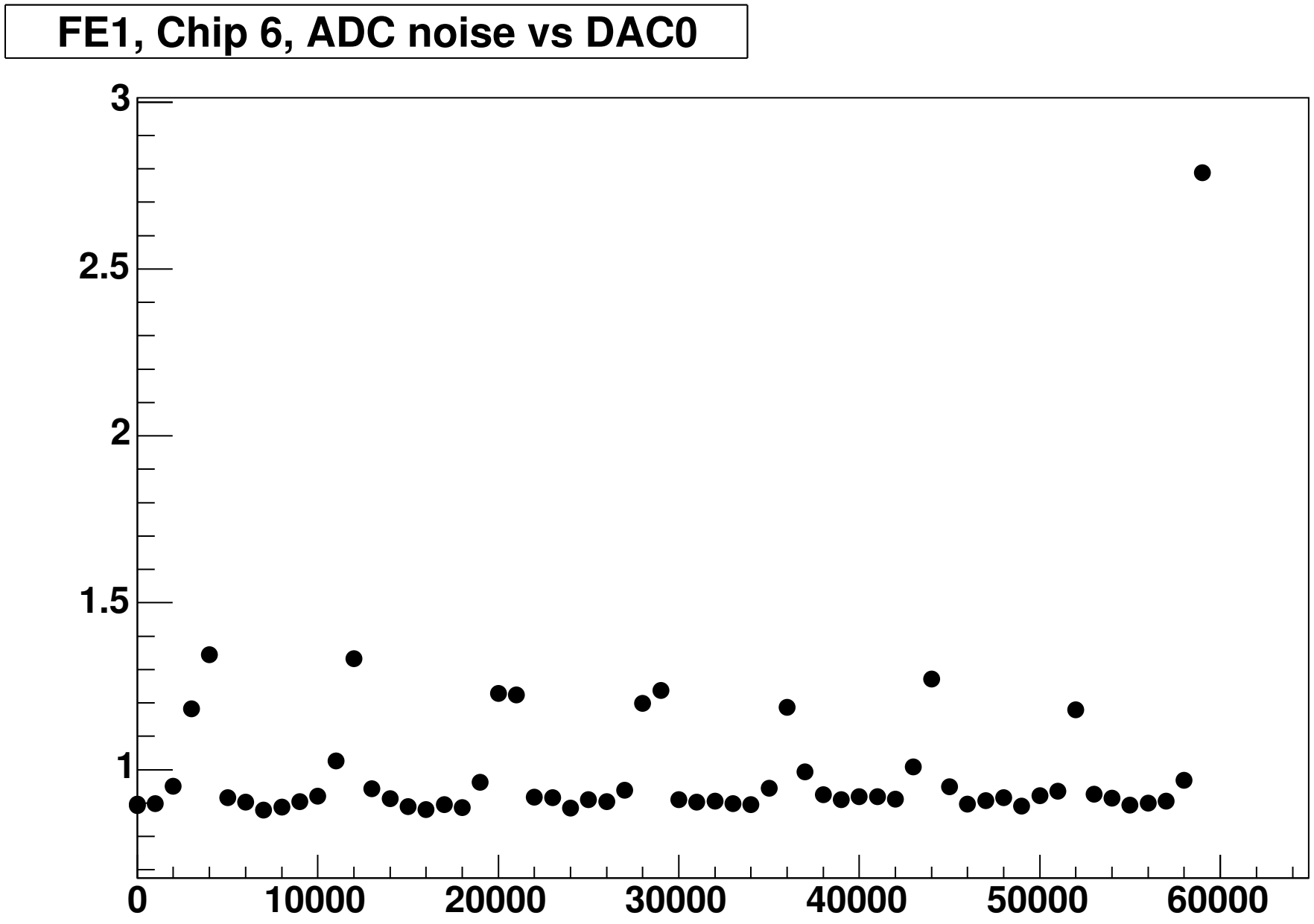

FE1, Chip 5, ADC residuals vs DAC0
2
0
-2
-4
-6
0
10000
20000
30000
40000
50000
60000

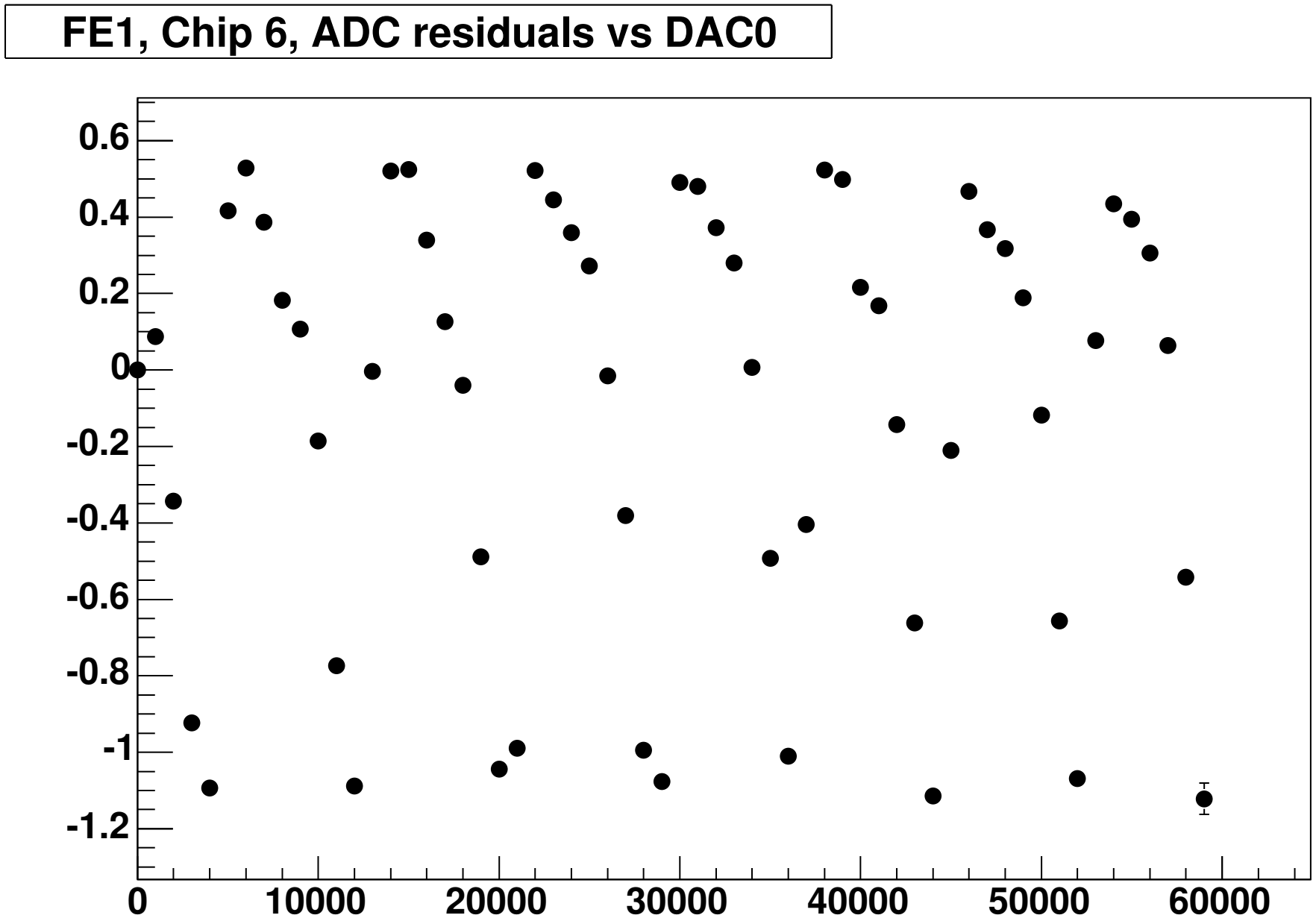

FE1, Chip 5, ADC mean vs DAC1
χ² / ndf 7.229e+04 / 57
p0 189.6 ± 0.003648
p1 1.884e-06 ± 1.055e-07
190.2
190
189.8
189.6
189.4
189.2
189
188.8
188.6
188.4
0
10000
20000
30000
40000
50000
60000

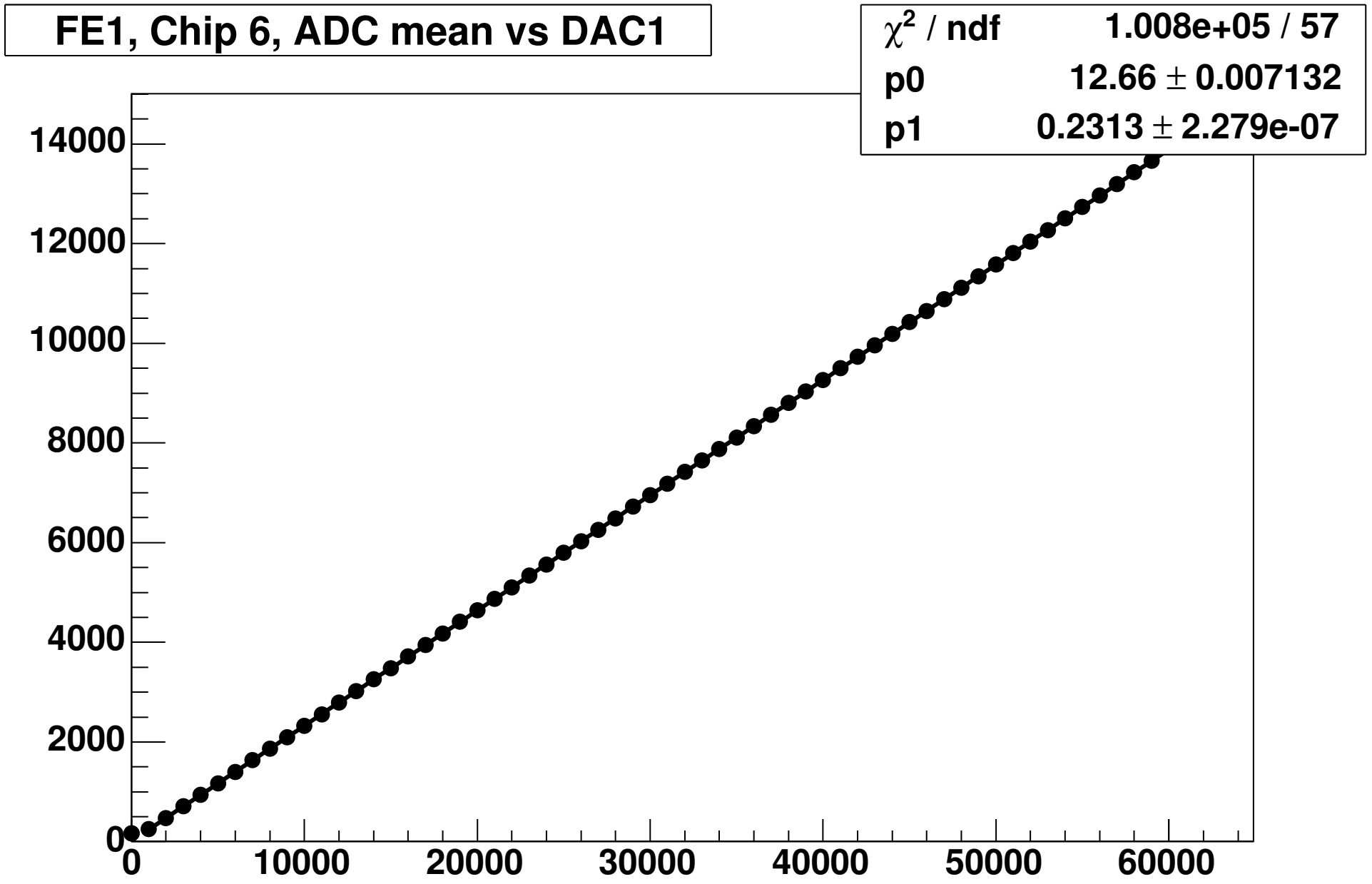

FE1, Chip 5, ADC noise vs DAC1
1.05
1
0.95
0.9
0.85
0
10000
20000
30000
40000
50000
60000

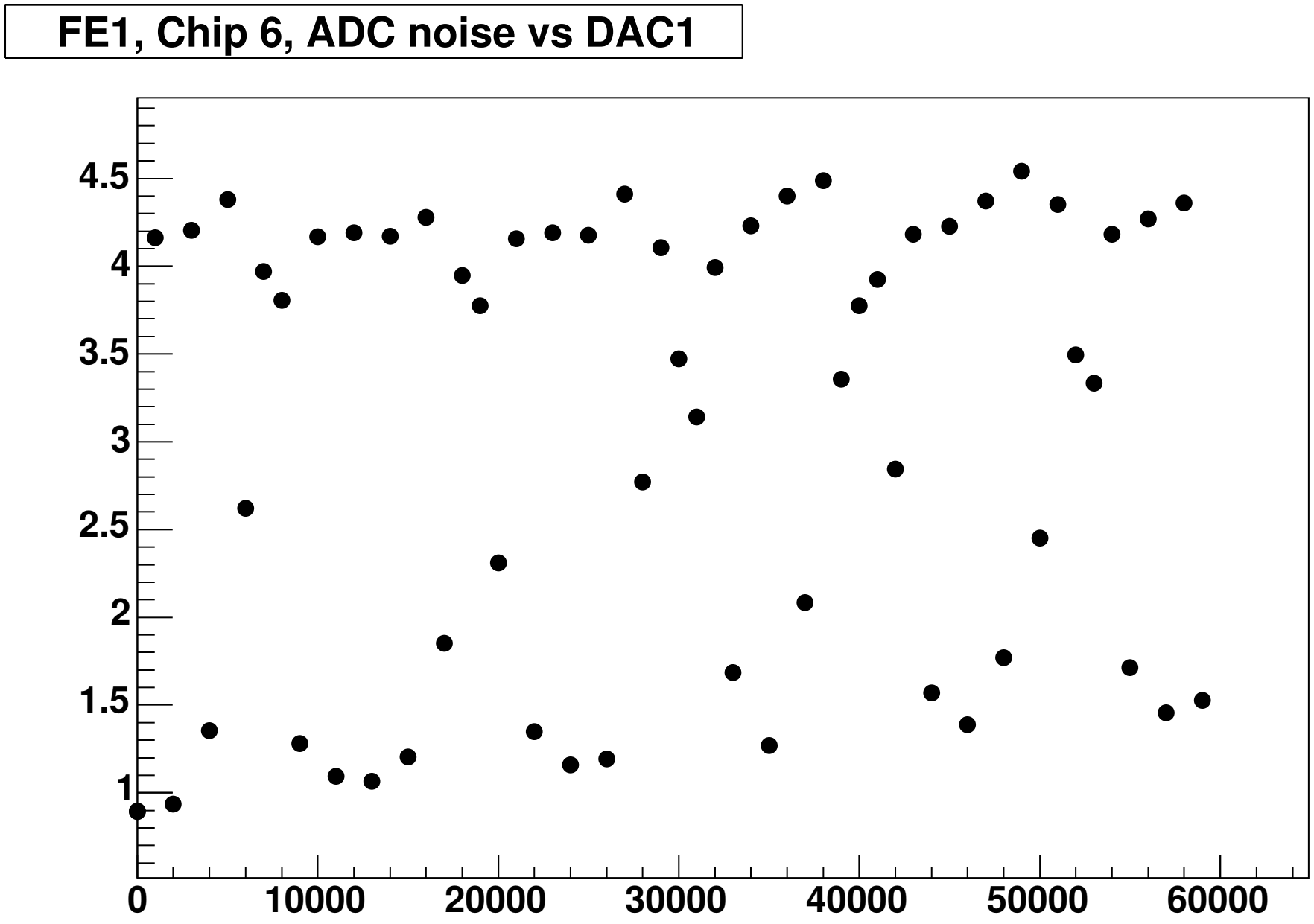

FE1, Chip 5, ADC residuals vs DAC1
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
0
10000
20000
30000
40000
50000
60000

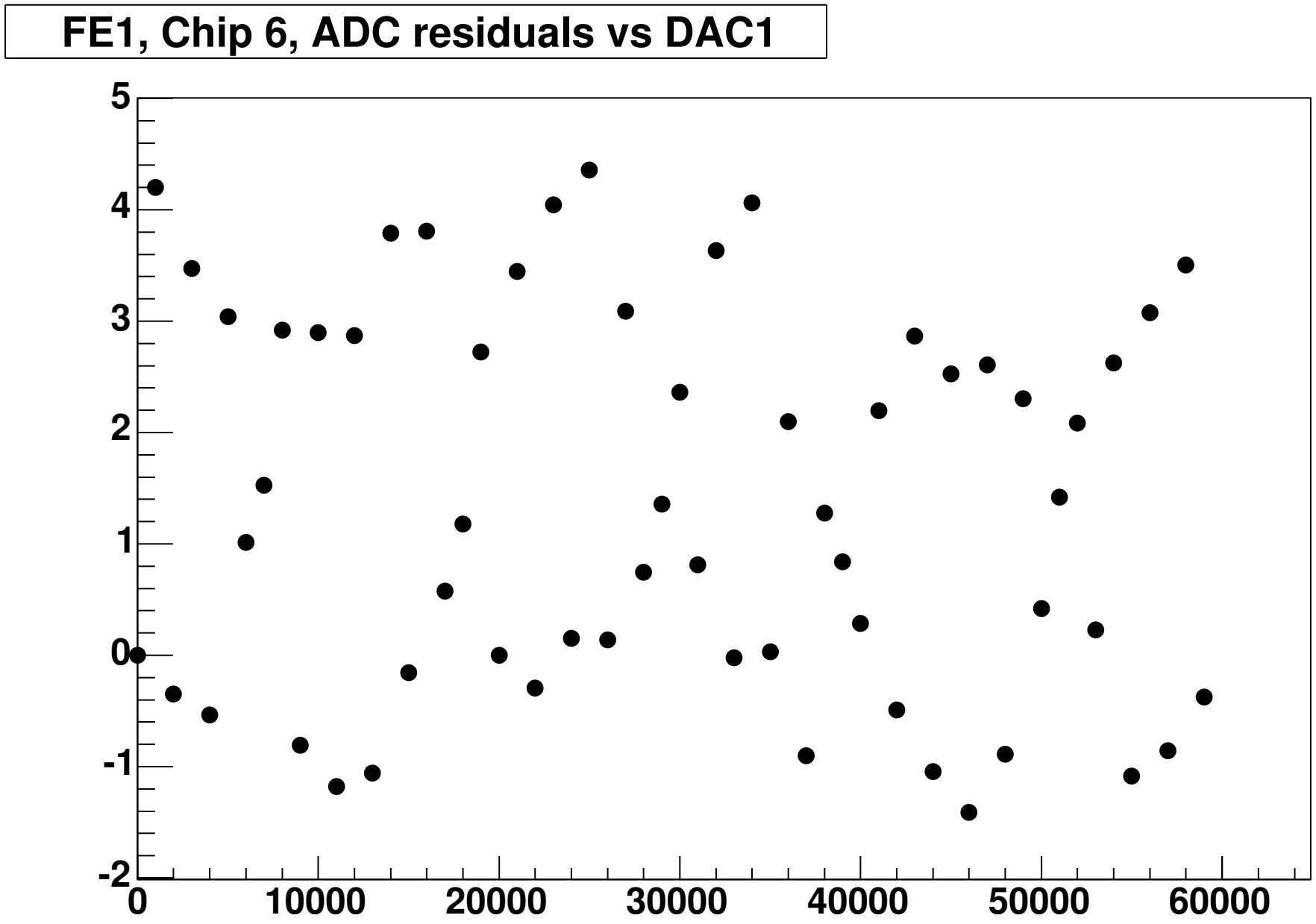

FE1, Chip 6, ADC mean vs DAC0
χ² / ndf 7.06e+04 / 57
p0 170.3 ± 0.003764
p1 2.145e-06 ± 1.097e-07
171
170.8
170.6
170.4
170.2
170
169.8
169.6
169.4
169.2
0
10000
20000
30000
40000
50000
60000

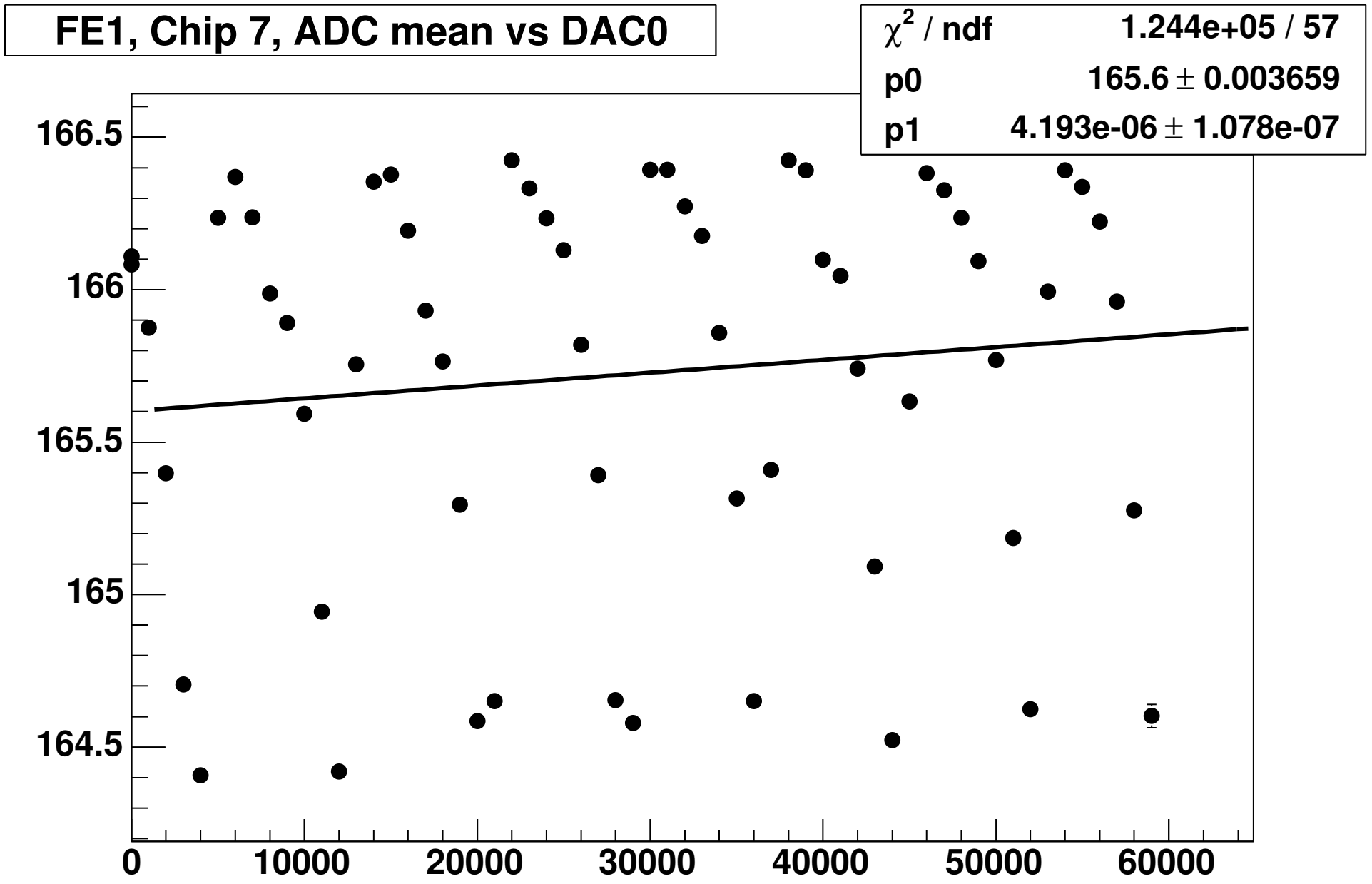

FE1, Chip 6, ADC noise vs DAC0
3
2.5
2
1.5
1
0
10000
20000
30000
40000
50000
60000

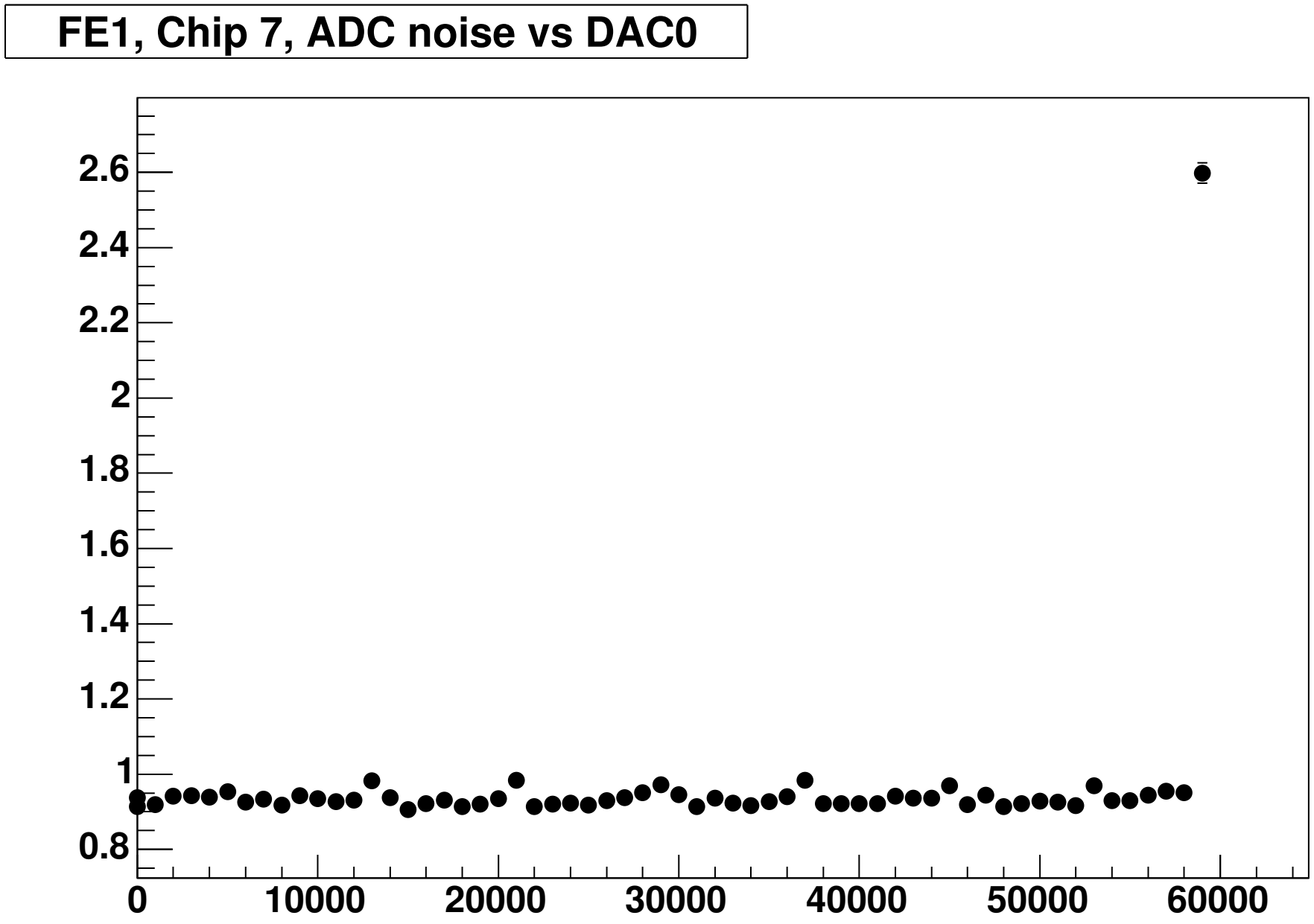

FE1, Chip 6, ADC residuals vs DAC0
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
0
10000
20000
30000
40000
50000
60000

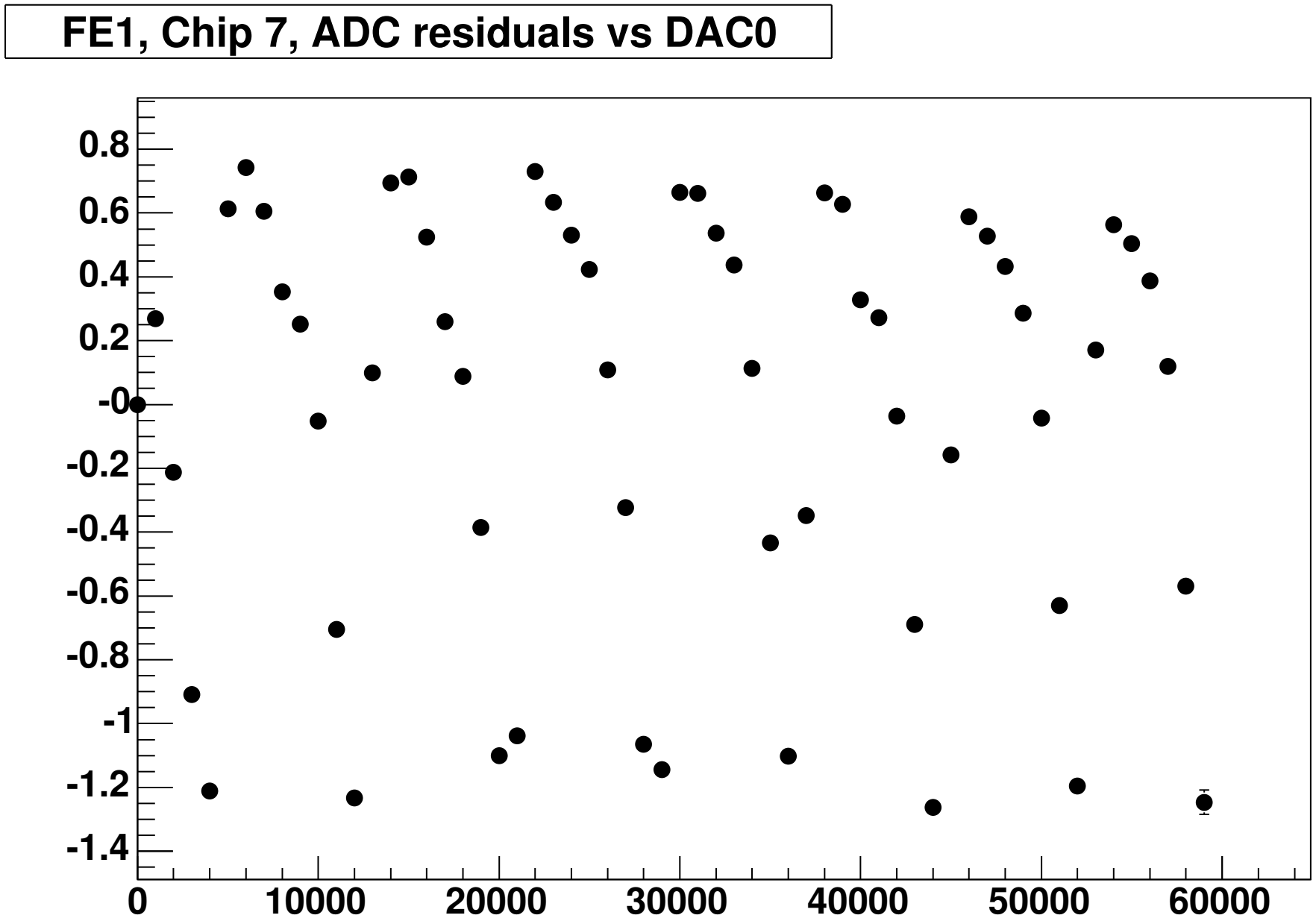

FE1, Chip 6, ADC mean vs DAC1
χ² / ndf 1.008e+05 / 57
p0 12.66 ± 0.007132
p1 0.2313 ± 2.279e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

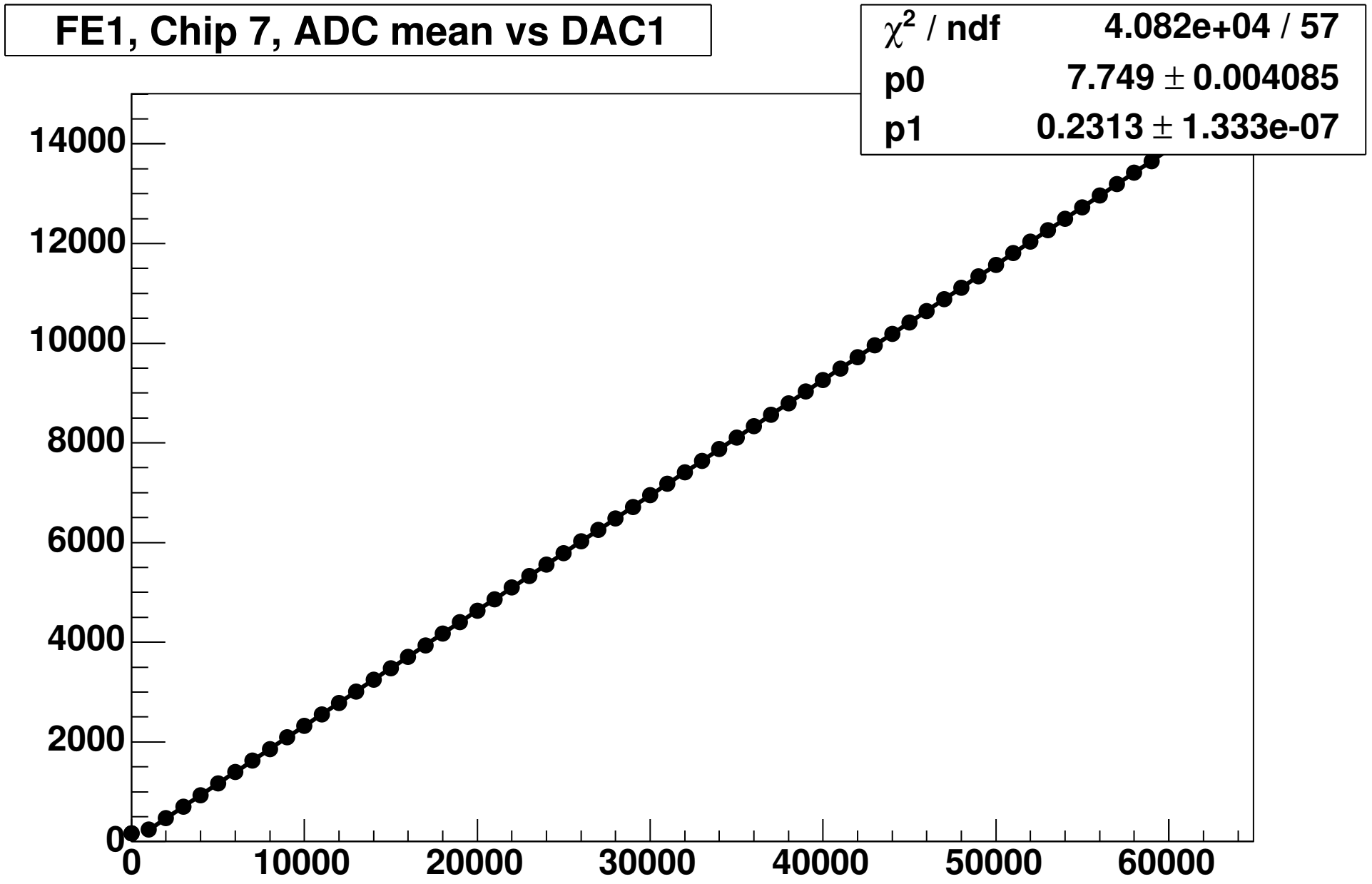

FE1, Chip 6, ADC noise vs DAC1
4.5
4
3.5
3
2.5
2
1.5
1
0
10000
20000
30000
40000
50000
60000

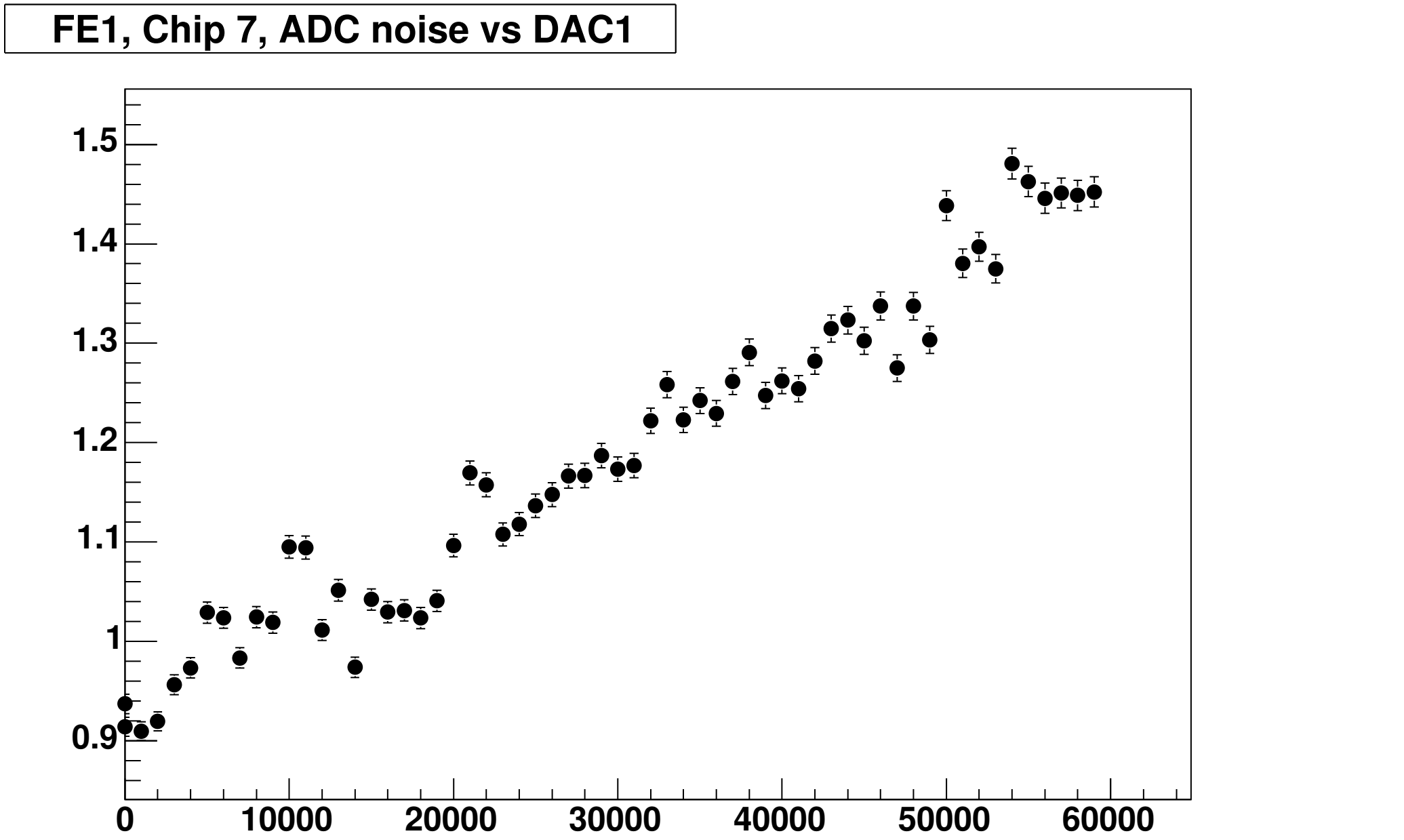

FE1, Chip 6, ADC residuals vs DAC1
5
4
3
2
1
0
-1
-2
0
10000
20000
30000
40000
50000
60000

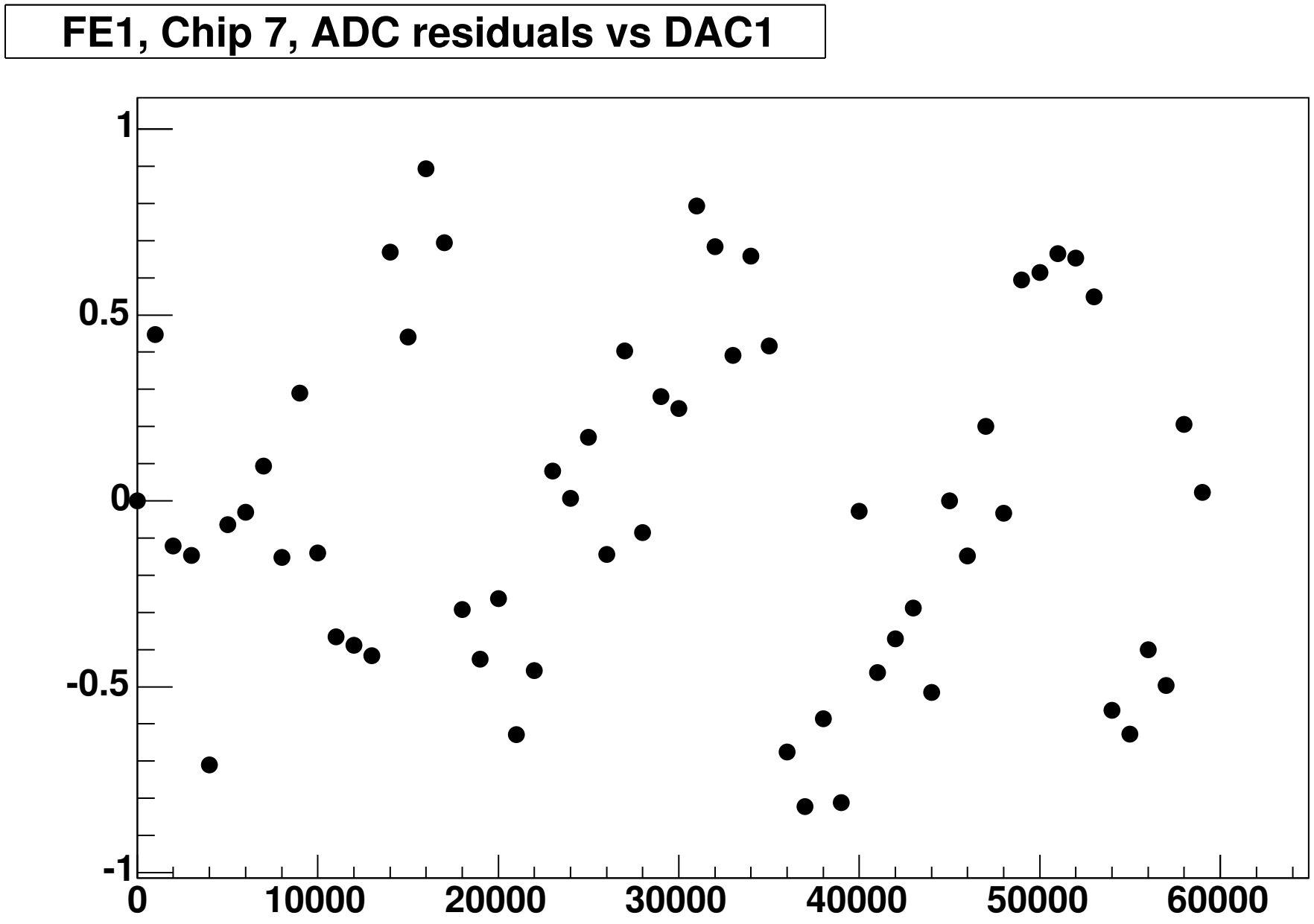

FE1, Chip 7, ADC mean vs DAC0
χ² / ndf 1.244e+05 / 57
p0 165.6 ± 0.003659
p1 4.193e-06 ± 1.078e-07
166.5
166
165.5
165
164.5
0
10000
20000
30000
40000
50000
60000

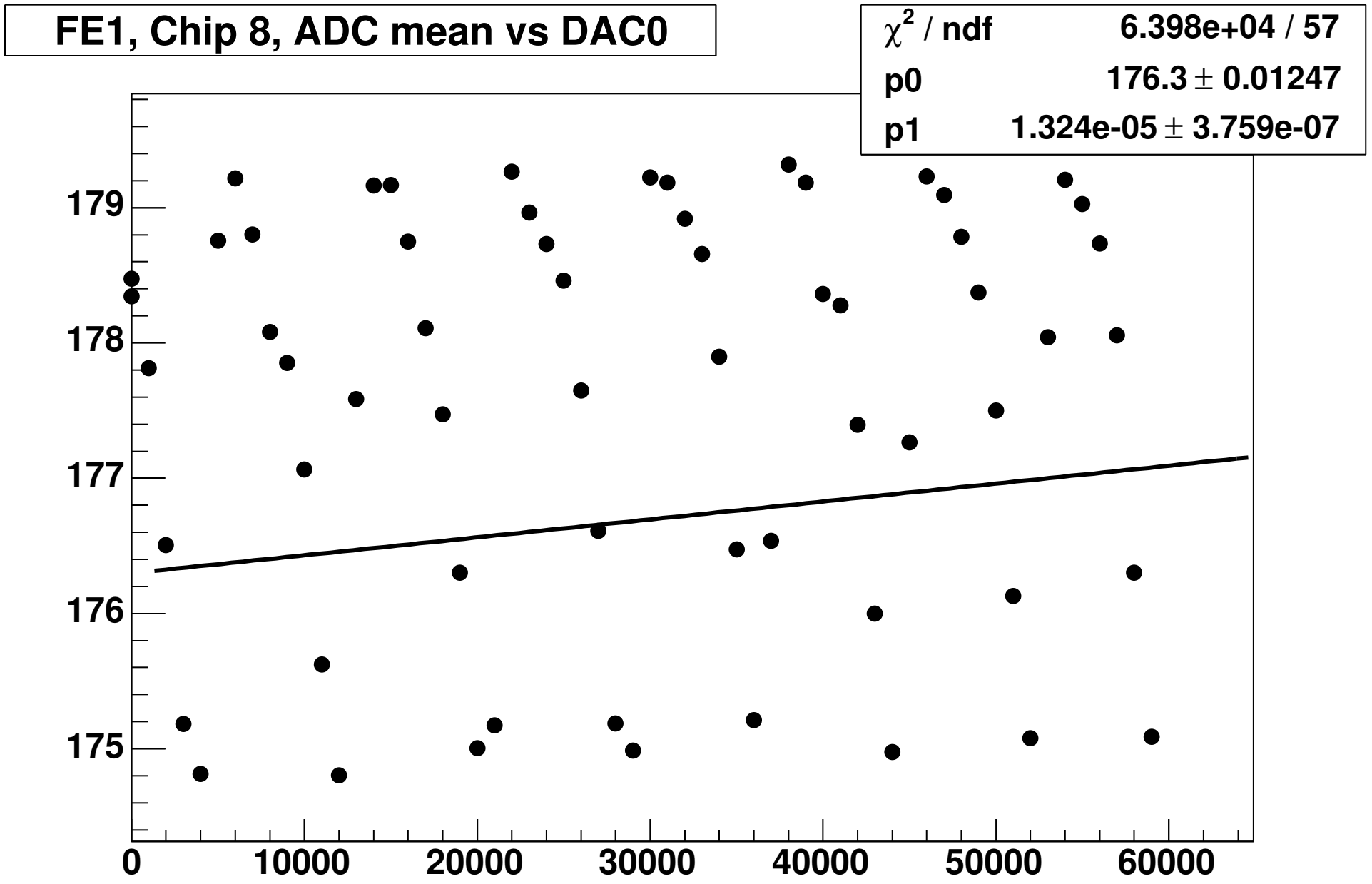

FE1, Chip 7, ADC noise vs DAC0
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0
10000
20000
30000
40000
50000
60000

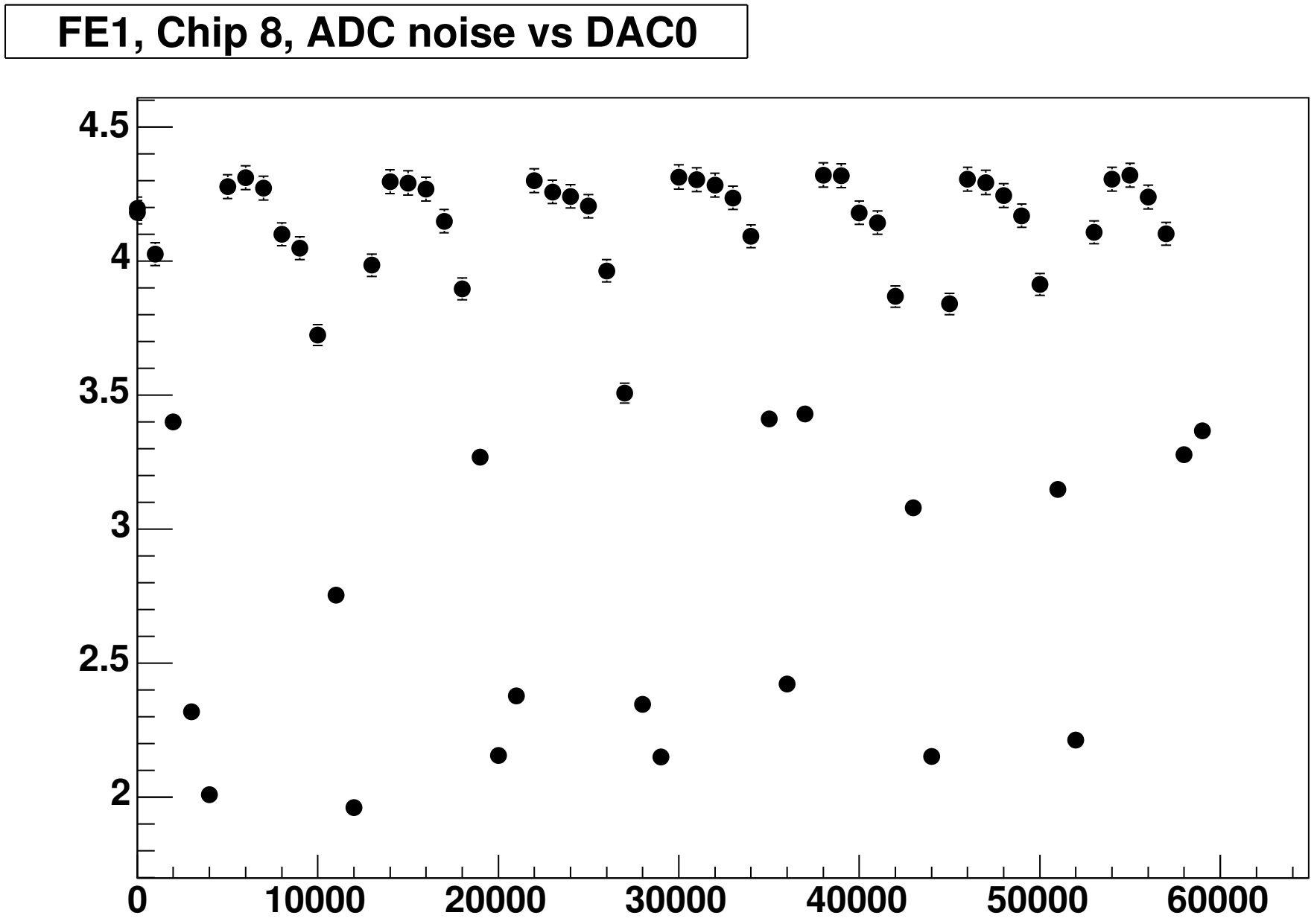

FE1, Chip 7, ADC residuals vs DAC0
0.8
0.6
0.4
0.2
-0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
-1.4
0
10000
20000
30000
40000
50000
60000

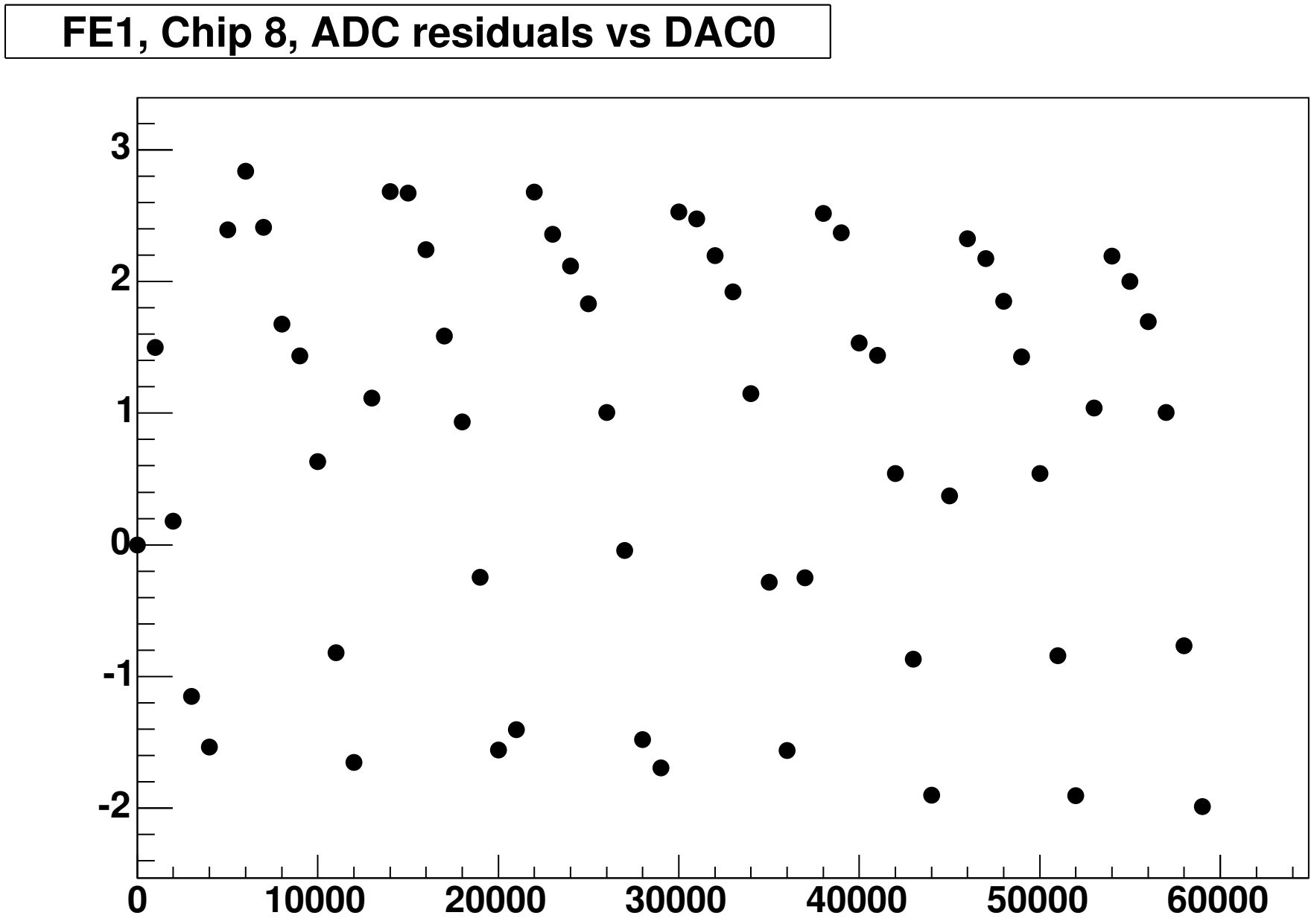

FE1, Chip 7, ADC mean vs DAC1
χ² / ndf 4.082e+04 / 57
p0 7.749 ± 0.004085
p1 0.2313 ± 1.333e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

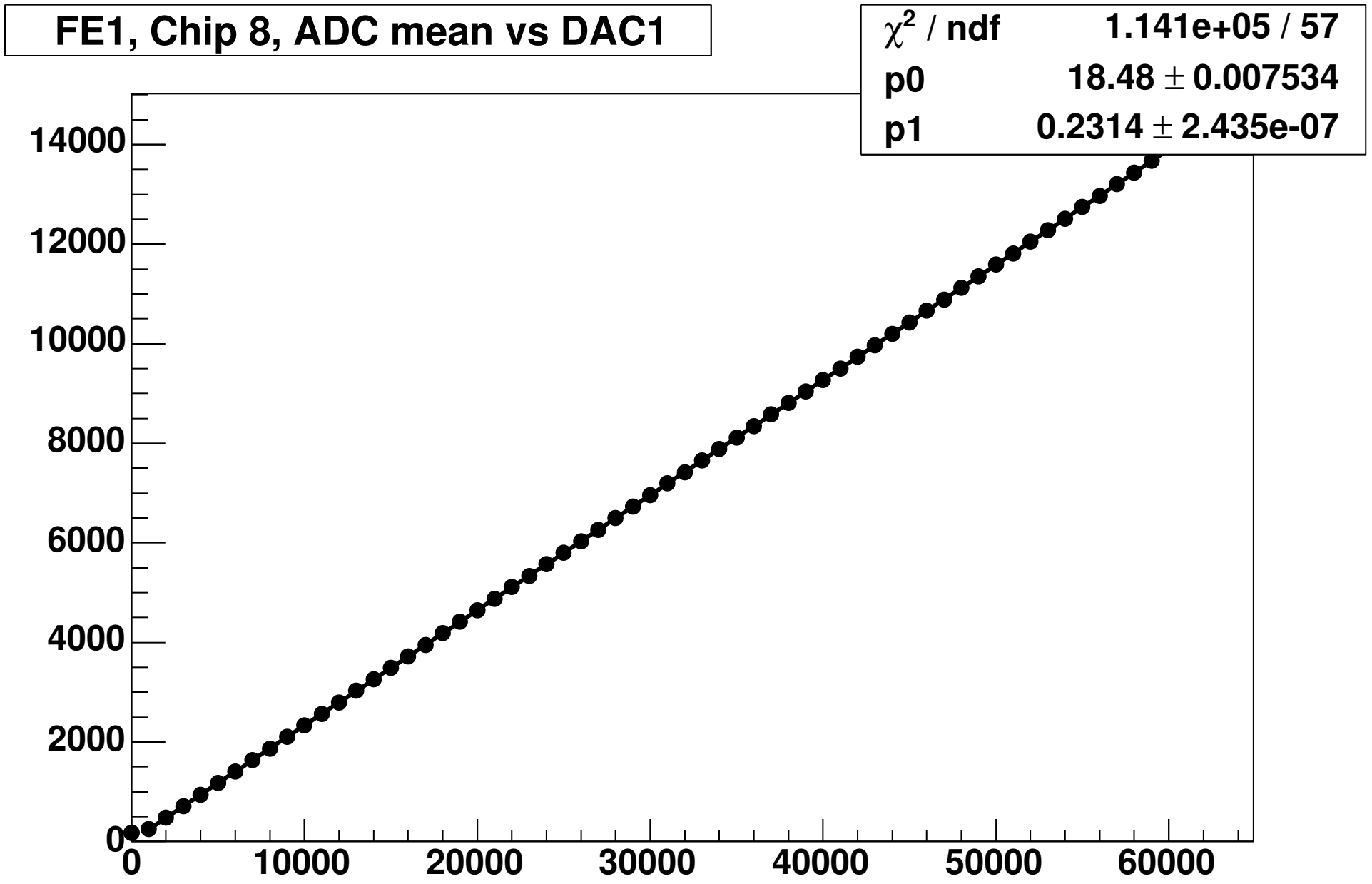

FE1, Chip 7, ADC noise vs DAC1
1.5
1.4
1.3
1.2
1.1
1
0.9
0
10000
20000
30000
40000
50000
60000

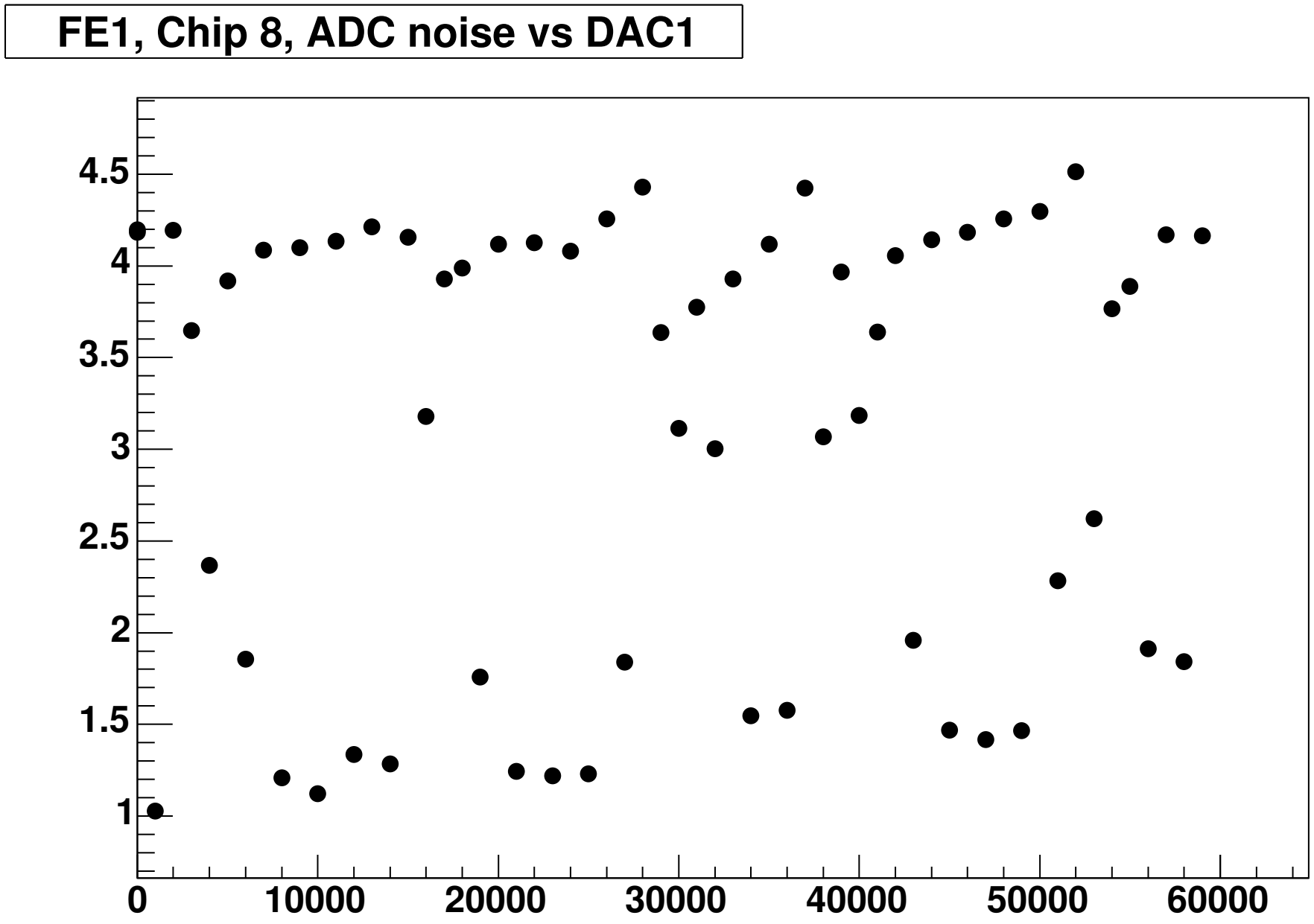

FE1, Chip 7, ADC residuals vs DAC1
1
0.5
0
-0.5
-1
0
10000
20000
30000
40000
50000
60000

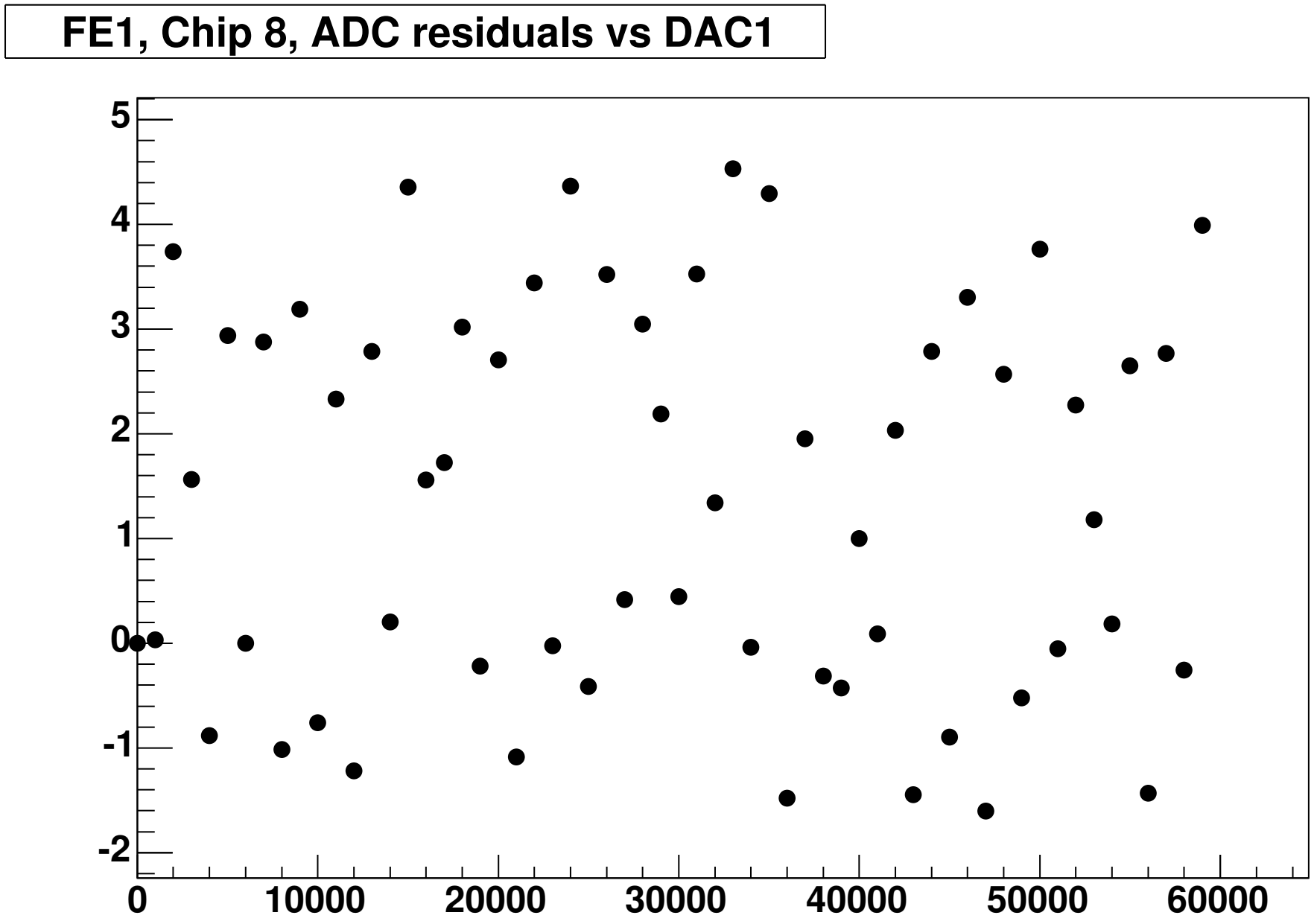

FE1, Chip 8, ADC mean vs DAC0
χ² / ndf 6.398e+04 / 57
p0 176.3 ± 0.01247
p1 1.324e-05 ± 3.759e-07
179
178
177
176
175
0
10000
20000
30000
40000
50000
60000

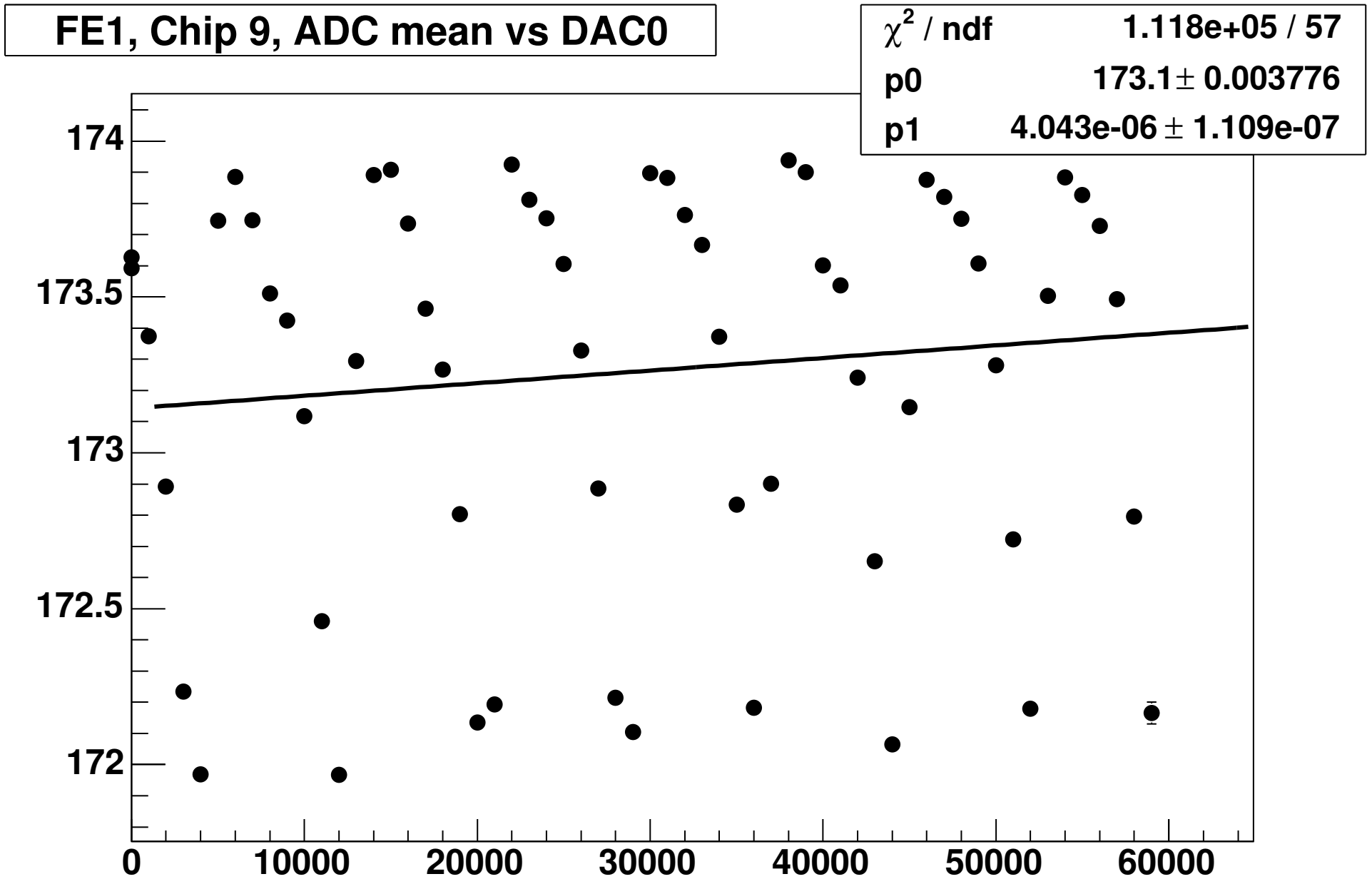

FE1, Chip 8, ADC noise vs DAC0
4.5
4
3.5
3
2.5
2
0
10000
20000
30000
40000
50000
60000

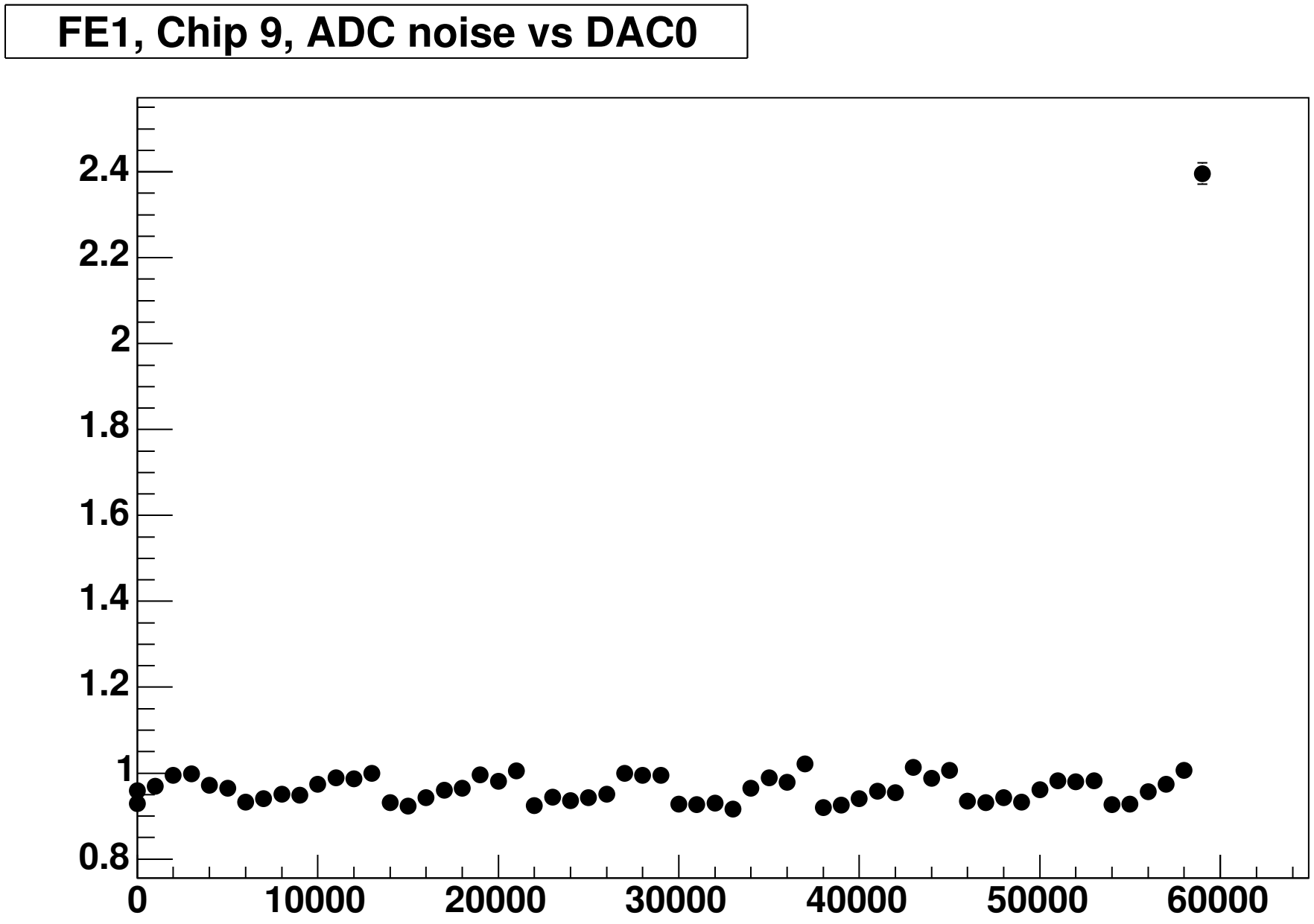

FE1, Chip 8, ADC residuals vs DAC0
3
2
1
0
-1
-2
0
10000
20000
30000
40000
50000
60000

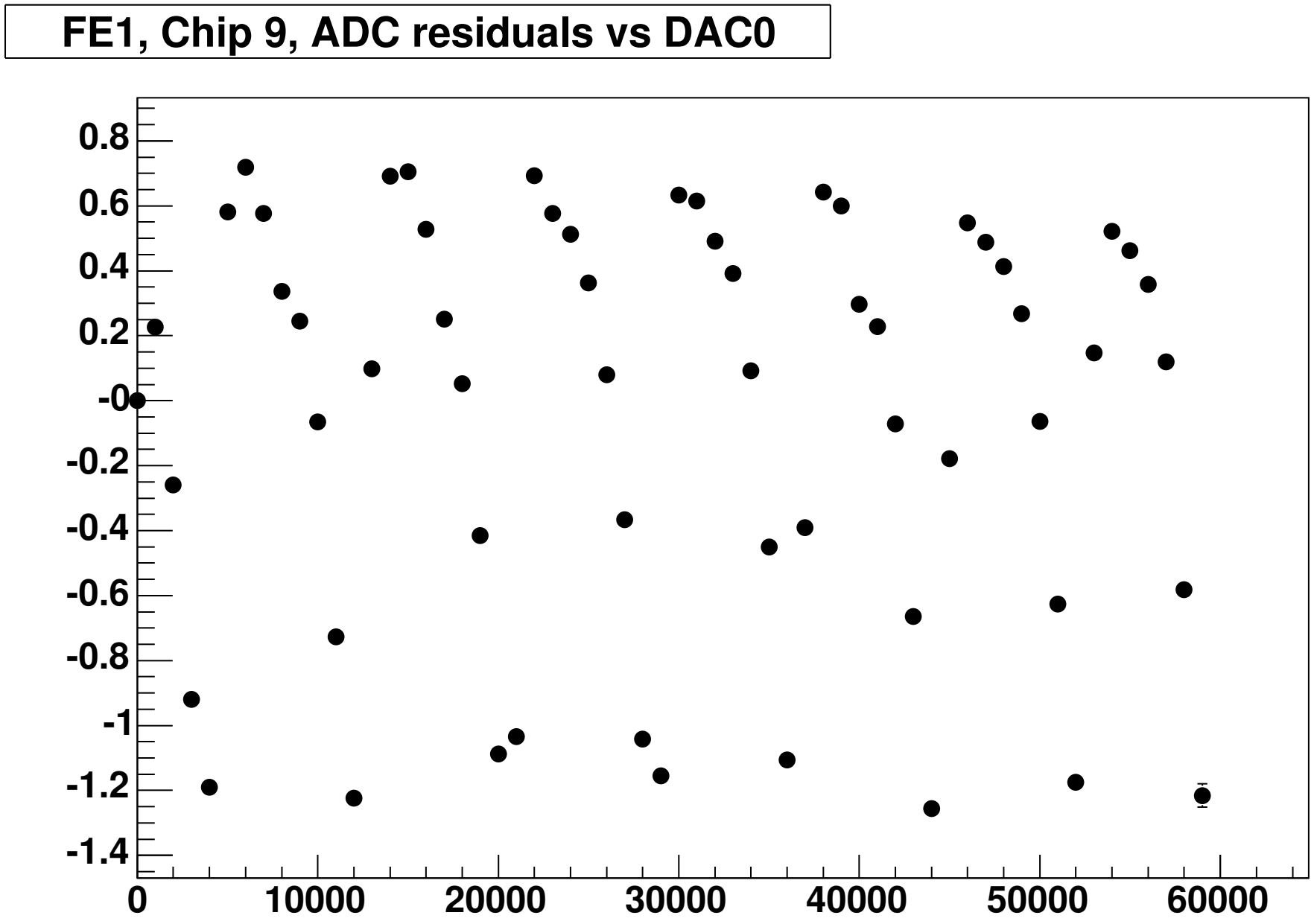

FE1, Chip 8, ADC mean vs DAC1
χ² / ndf 1.141e+05 / 57
p0 18.48 ± 0.007534
p1 0.2314 ± 2.435e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

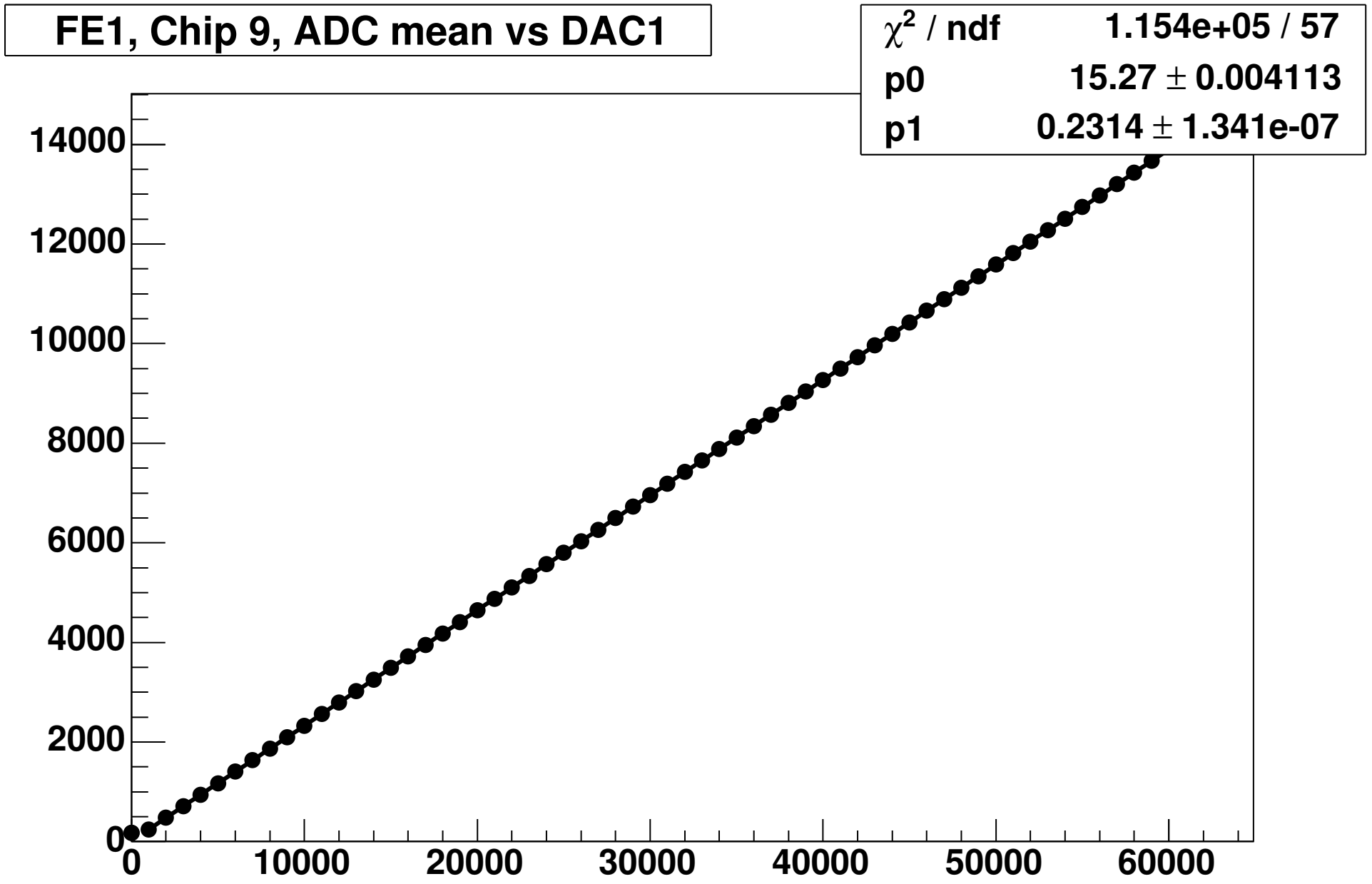

FE1, Chip 8, ADC noise vs DAC1
4.5
4
3.5
3
2.5
2
1.5
1
0
10000
20000
30000
40000
50000
60000

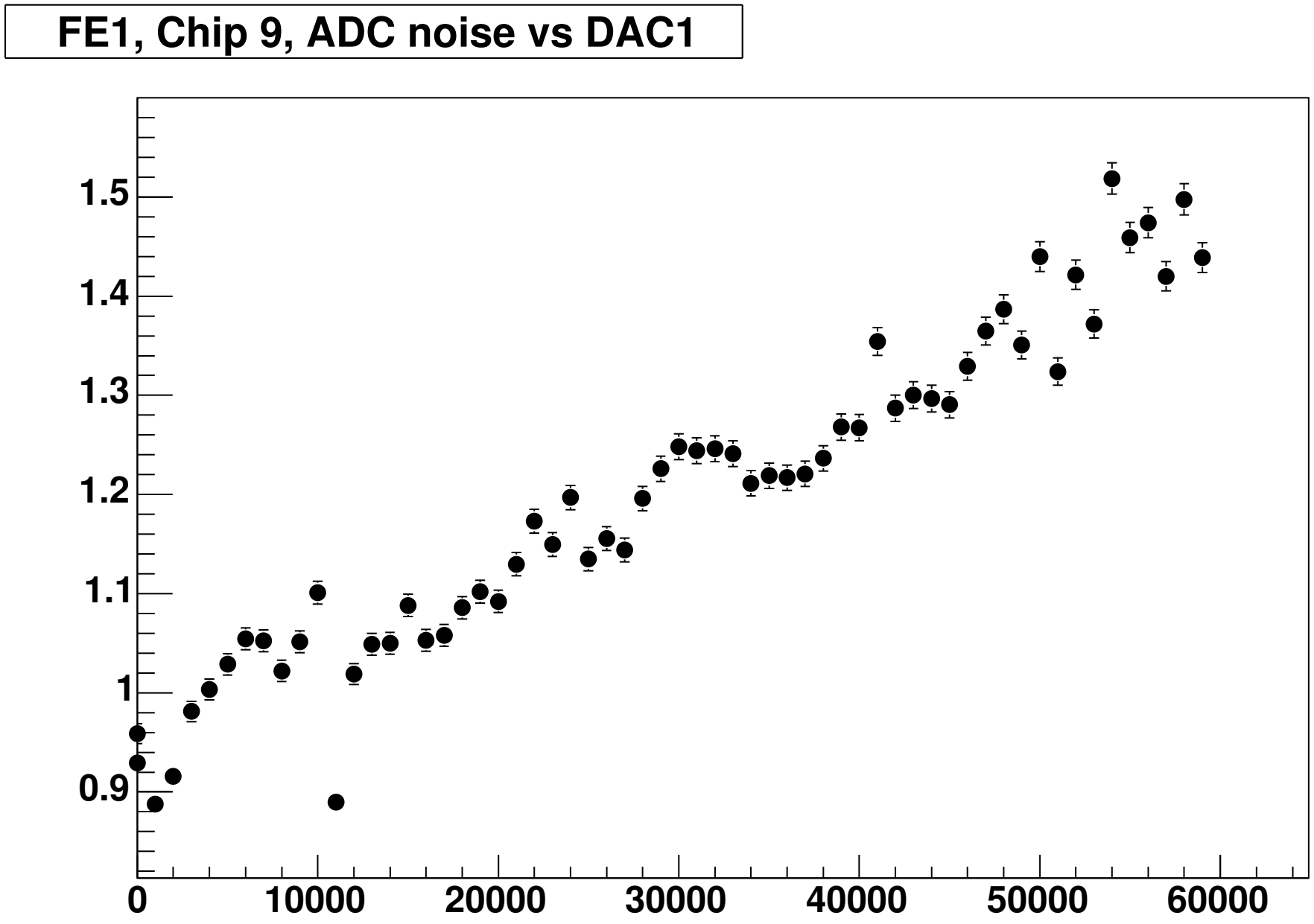

FE1, Chip 8, ADC residuals vs DAC1
5
4
3
2
1
0
-1
-2
0
10000
20000
30000
40000
50000
60000

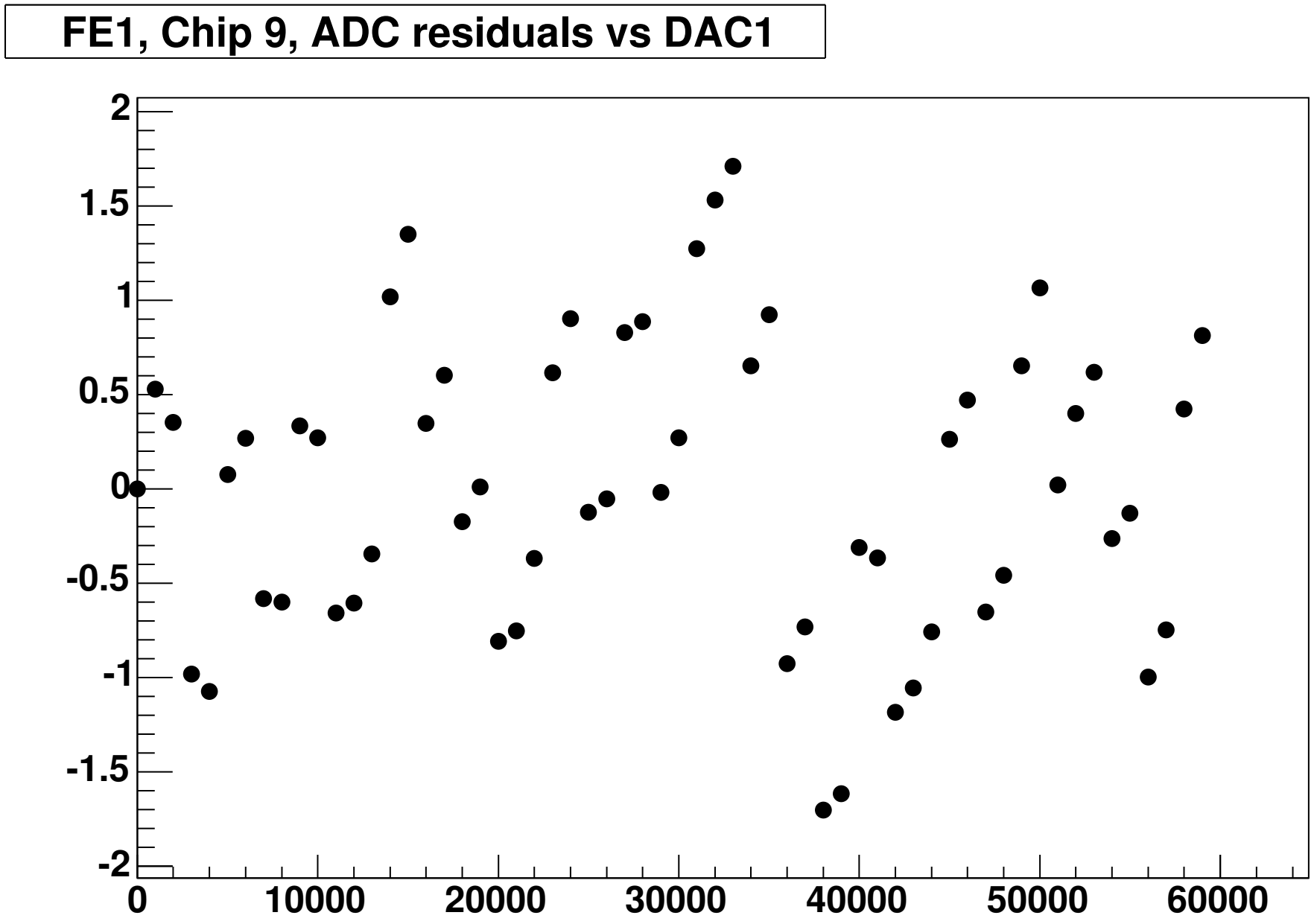

FE1, Chip 9, ADC mean vs DAC0
χ² / ndf 1.118e+05 / 57
p0 173.1 ± 0.003776
p1 4.043e-06 ± 1.109e-07
174
173.5
173
172.5
172
0
10000
20000
30000
40000
50000
60000

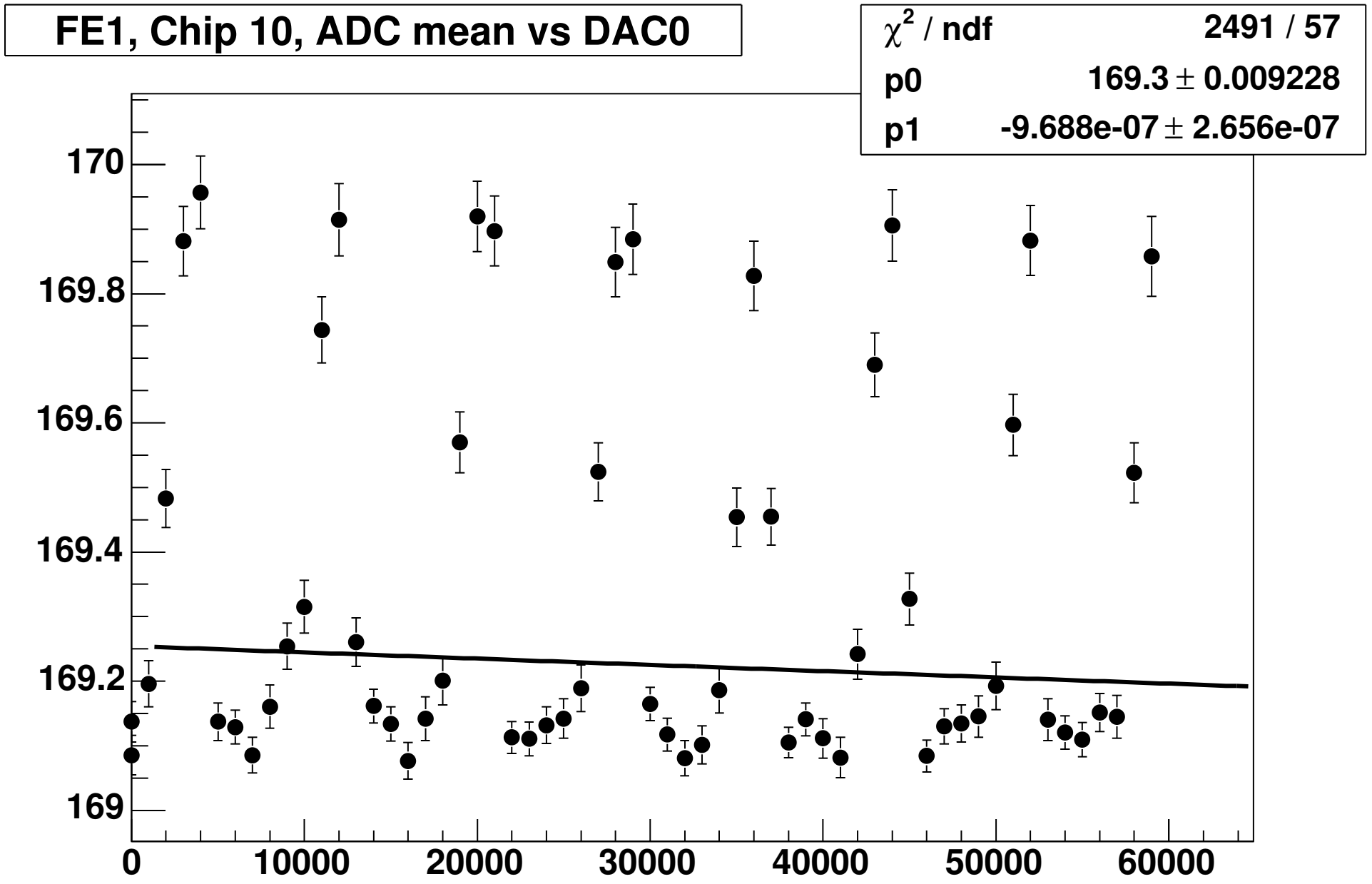

FE1, Chip 9, ADC noise vs DAC0
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0
10000
20000
30000
40000
50000
60000

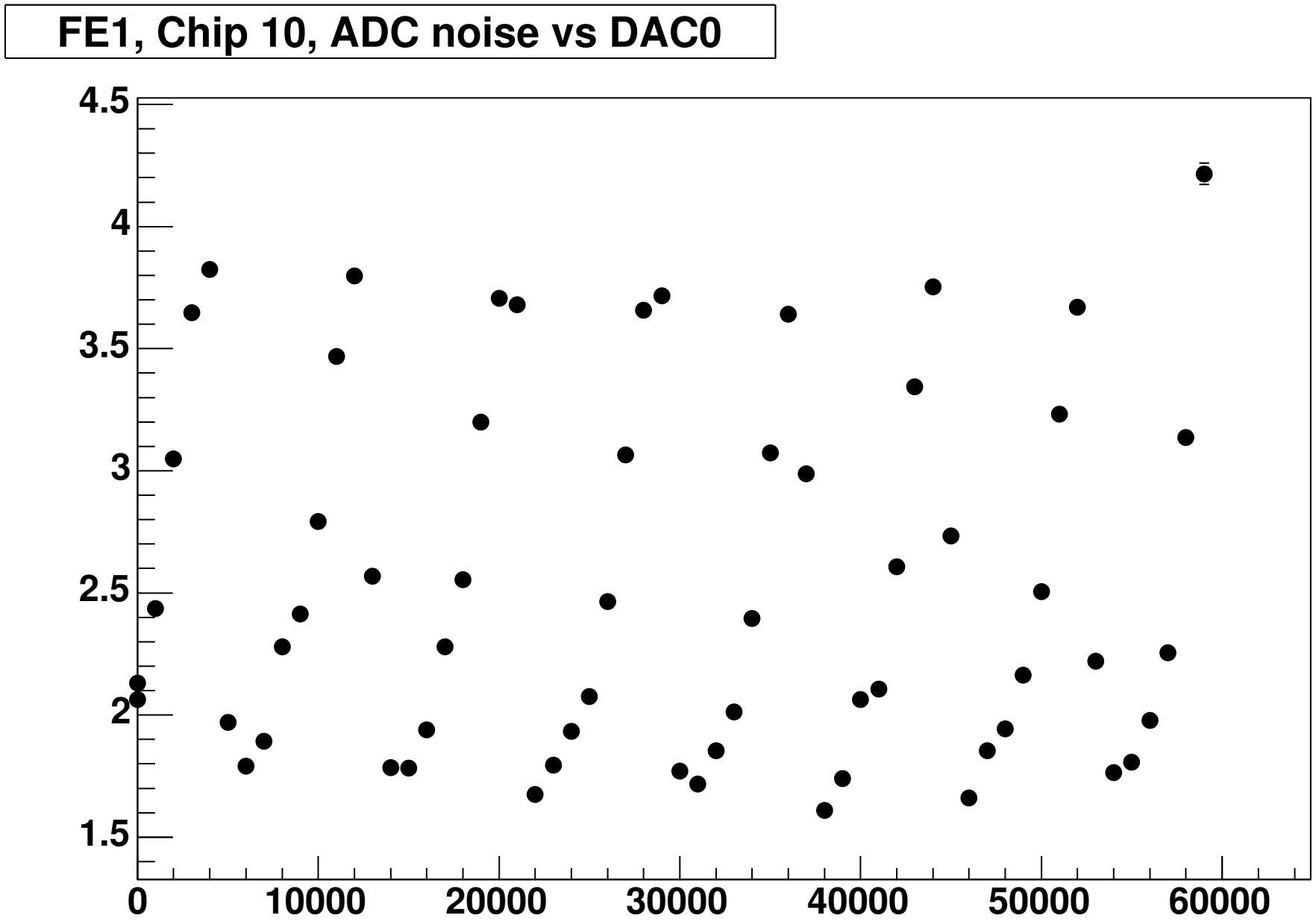

FE1, Chip 9, ADC residuals vs DAC0
0.8
0.6
0.4
0.2
-0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
-1.4
0
10000
20000
30000
40000
50000
60000

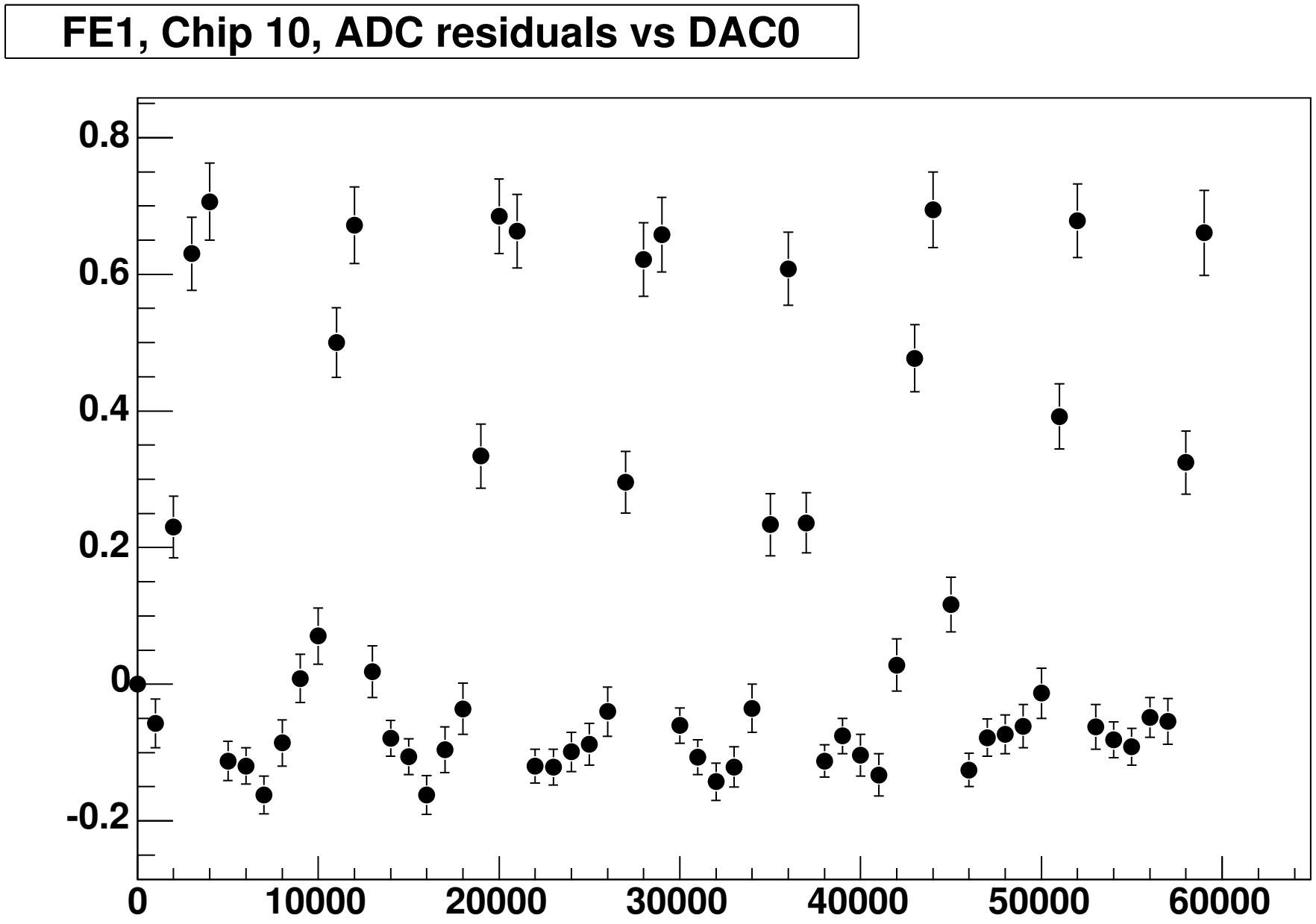

FE1, Chip 9, ADC mean vs DAC1
χ² / ndf 1.154e+05 / 57
p0 15.27 ± 0.004113
p1 0.2314 ± 1.341e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

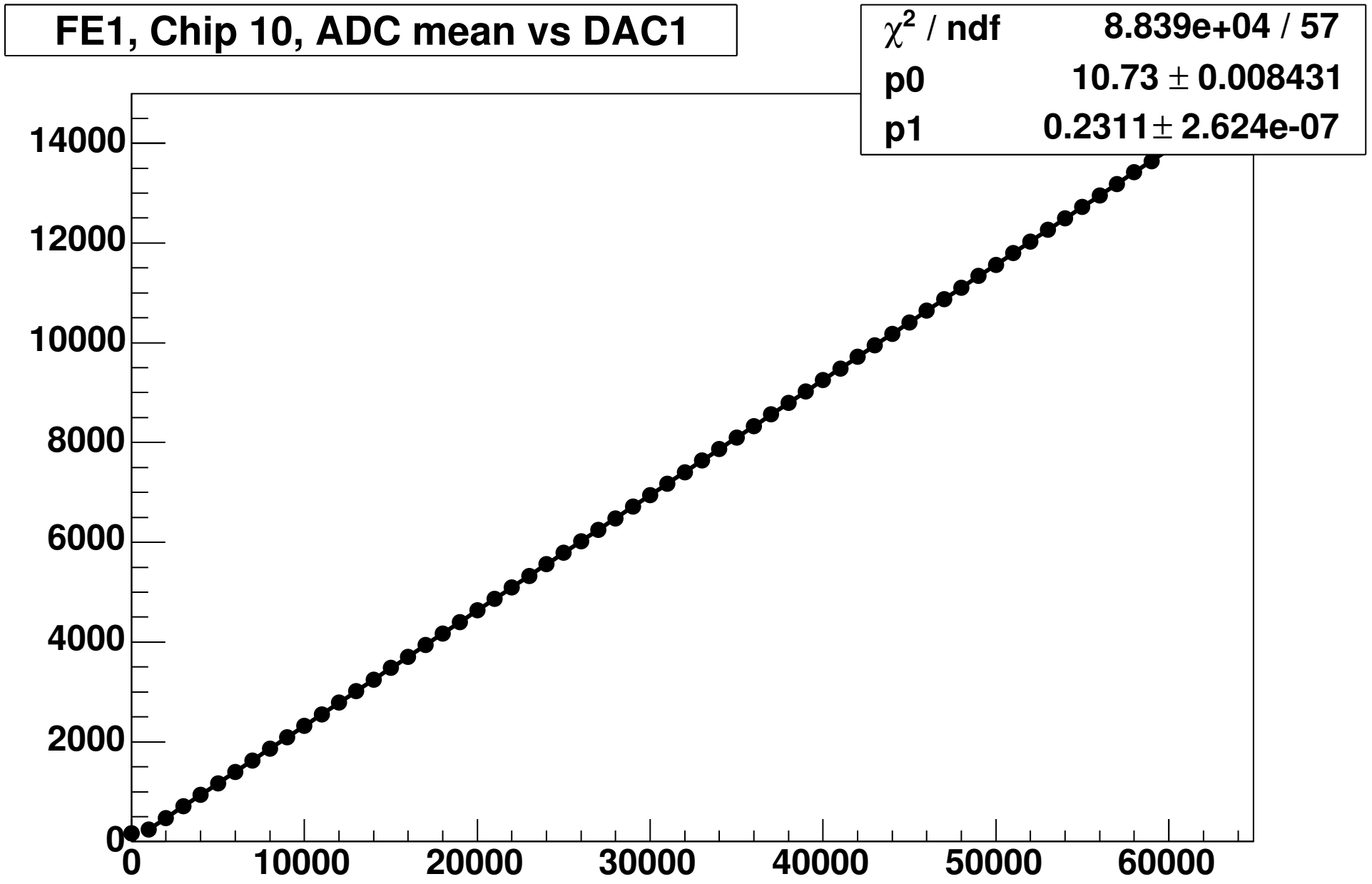

FE1, Chip 9, ADC noise vs DAC1
1.5
1.4
1.3
1.2
1.1
1
0.9
0
10000
20000
30000
40000
50000
60000

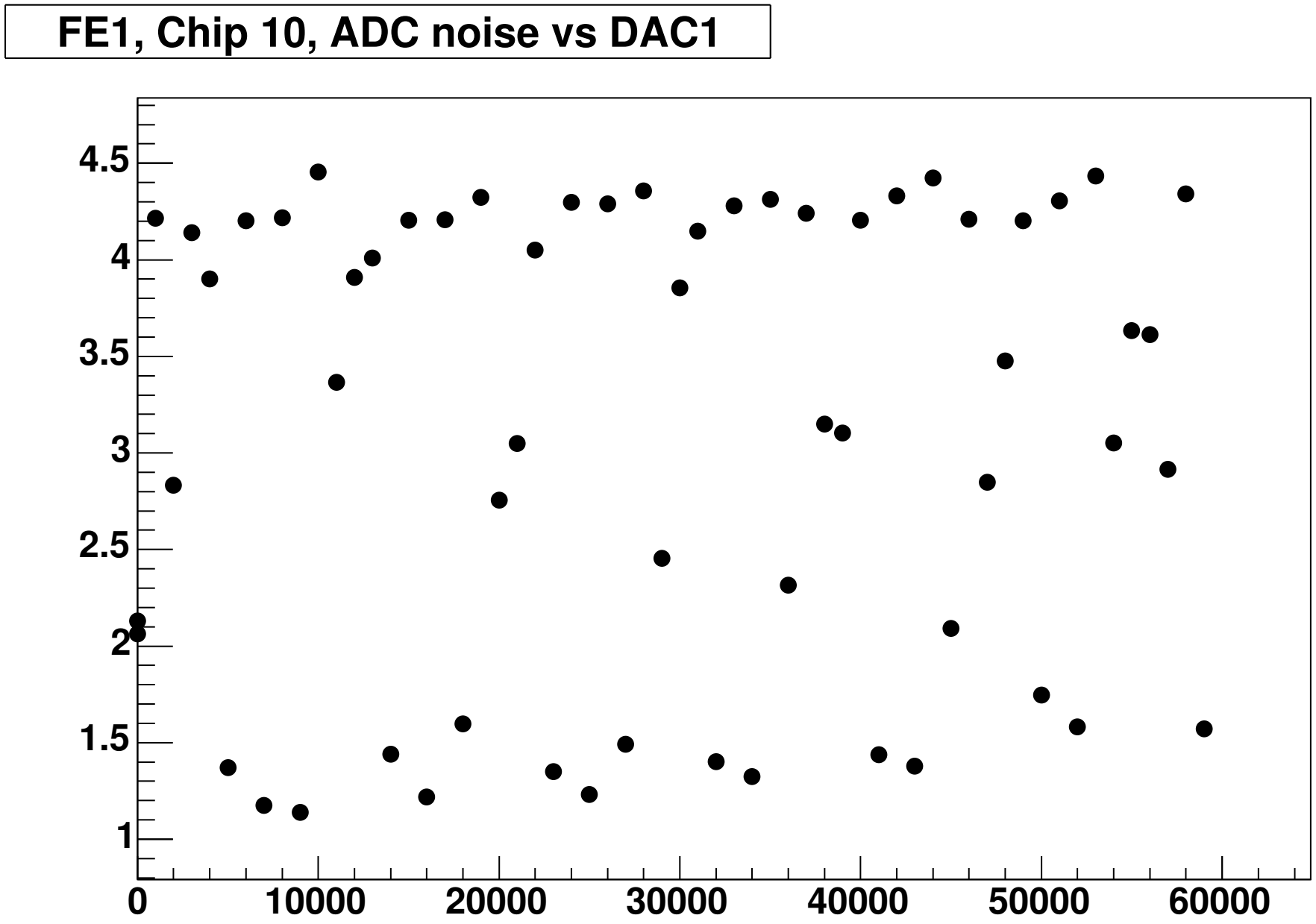

FE1, Chip 9, ADC residuals vs DAC1
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
0
10000
20000
30000
40000
50000
60000

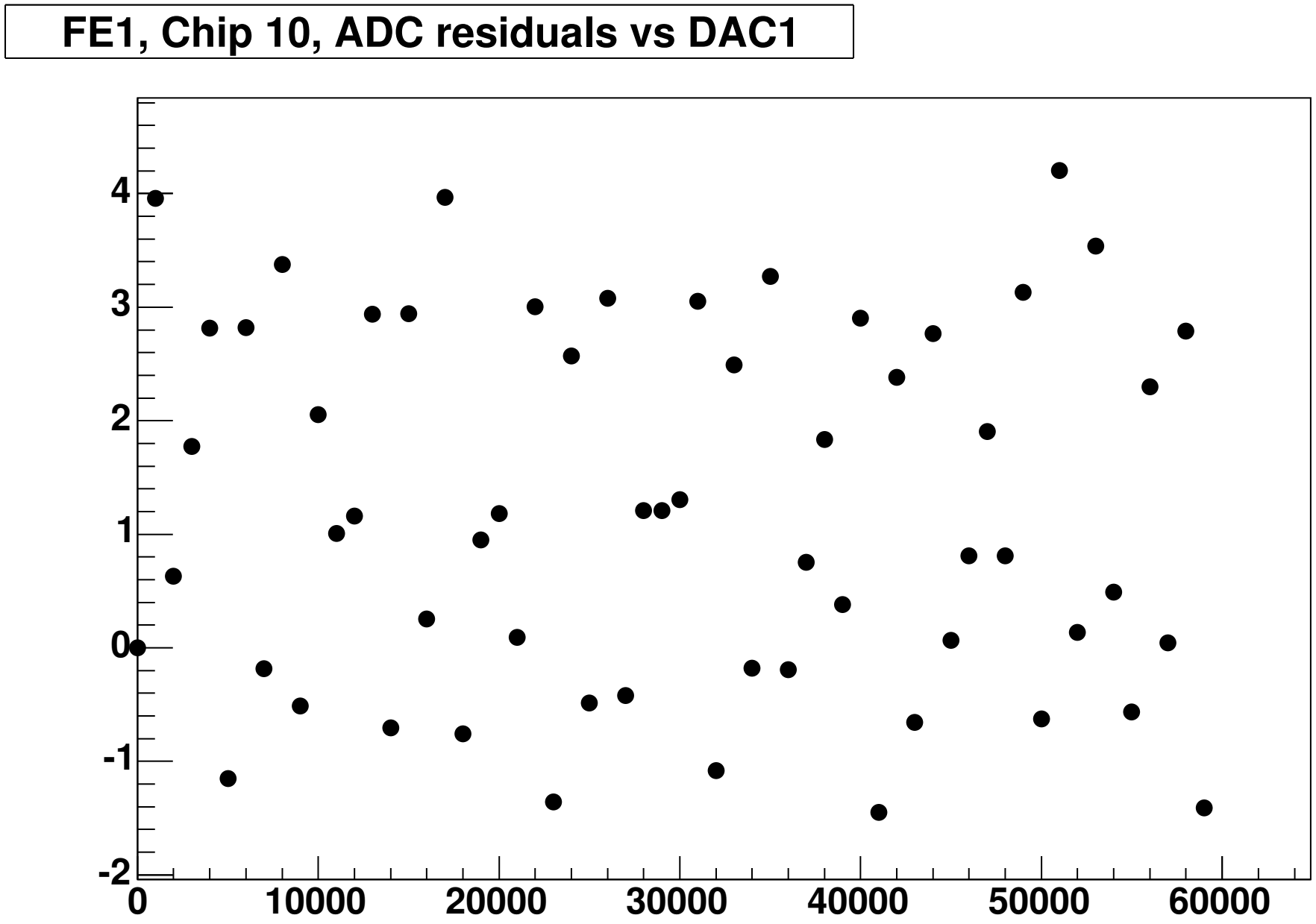

FE1, Chip 10, ADC mean vs DAC0
χ² / ndf 2491 / 57
p0 169.3 ± 0.009228
p1 -9.688e-07 ± 2.656e-07
170
169.8
169.6
169.4
169.2
169
0
10000
20000
30000
40000
50000
60000

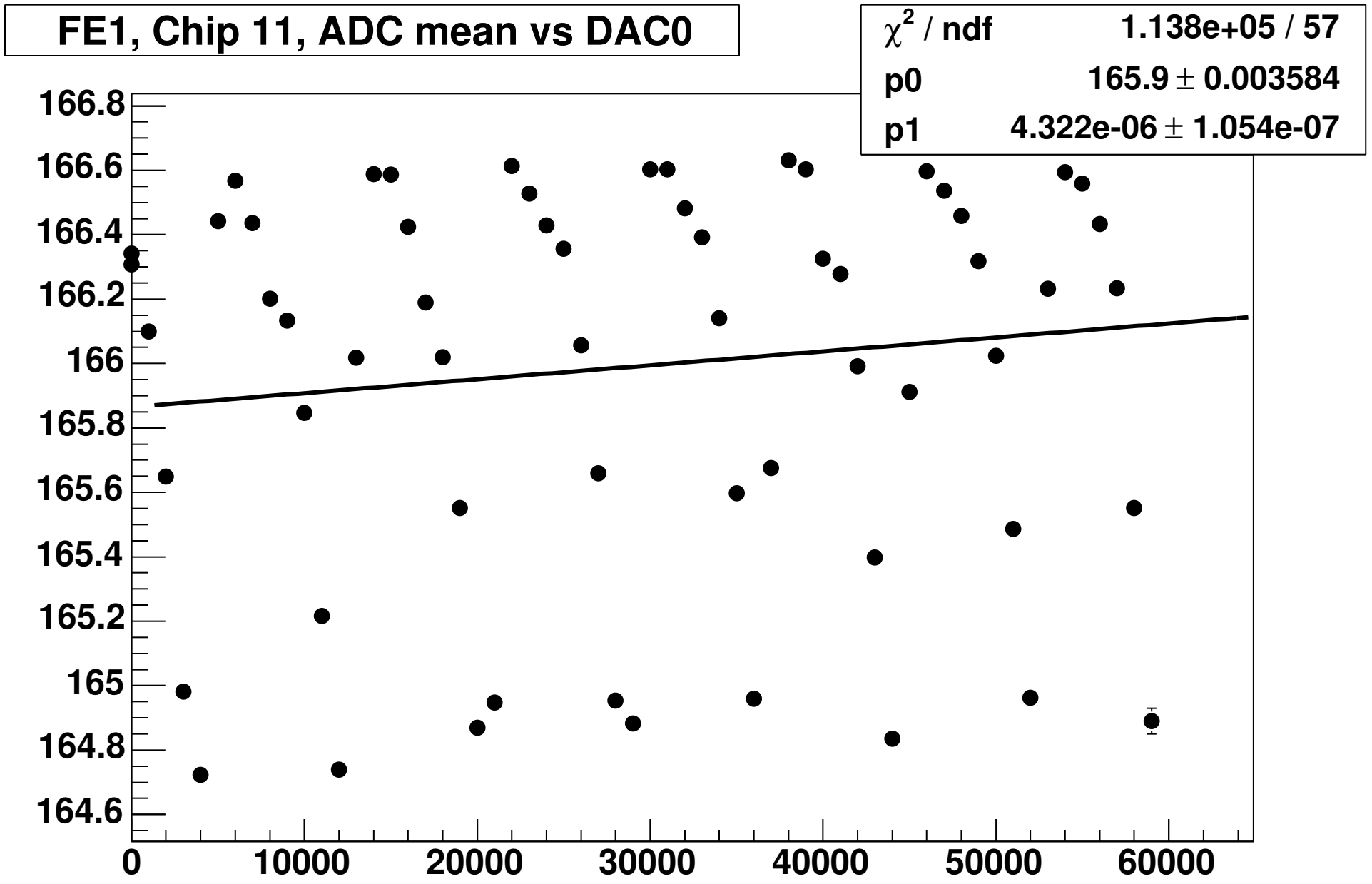

FE1, Chip 10, ADC noise vs DAC0
4.5
4
3.5
3
2.5
2
1.5
0
10000
20000
30000
40000
50000
60000

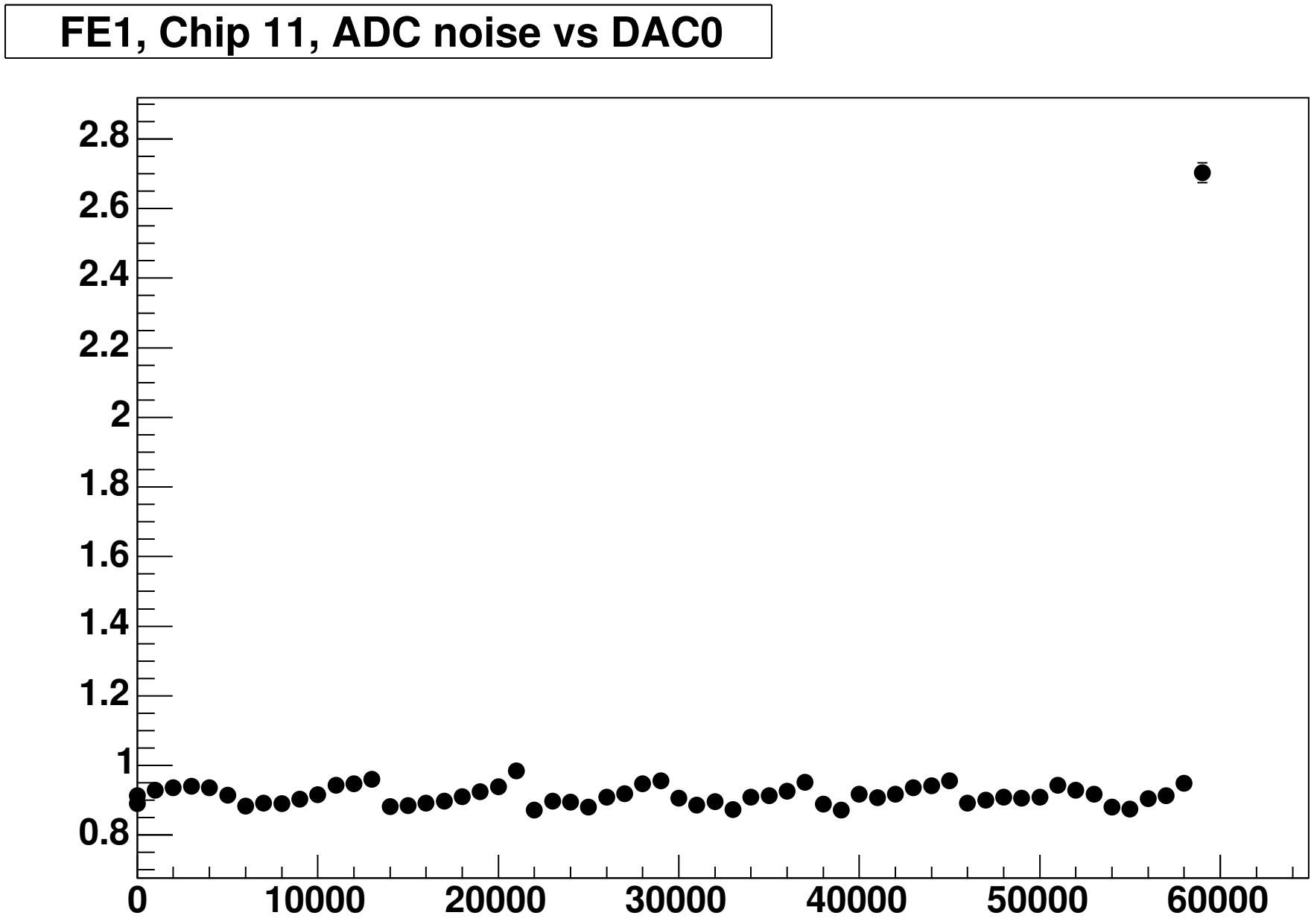

FE1, Chip 10, ADC residuals vs DAC0
0.8
0.6
0.4
0.2
0
-0.2
0
10000
20000
30000
40000
50000
60000

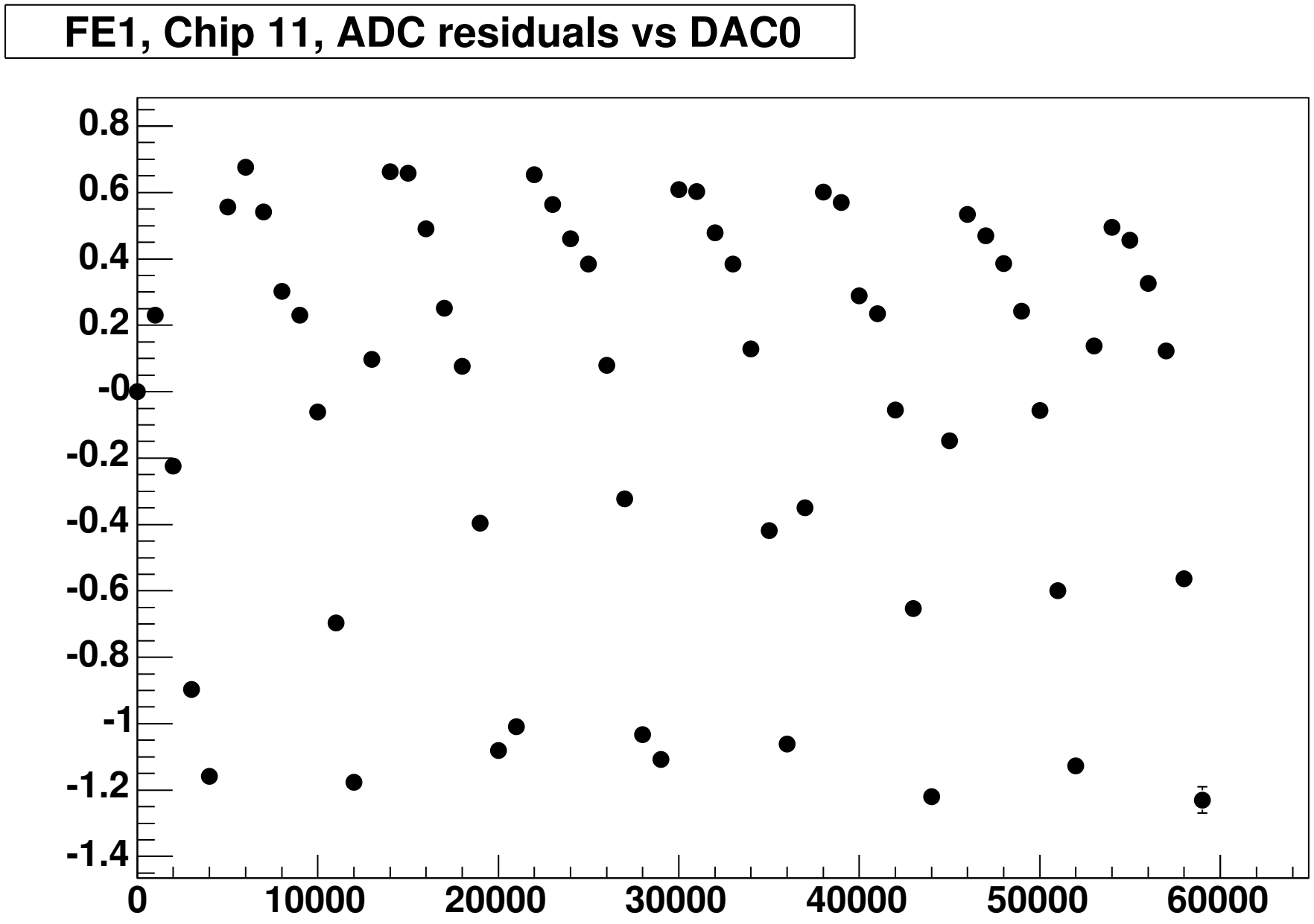

FE1, Chip 10, ADC mean vs DAC1
χ² / ndf 8.839e+04 / 57
p0 10.73 ± 0.008431
p1 0.2311 ± 2.624e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

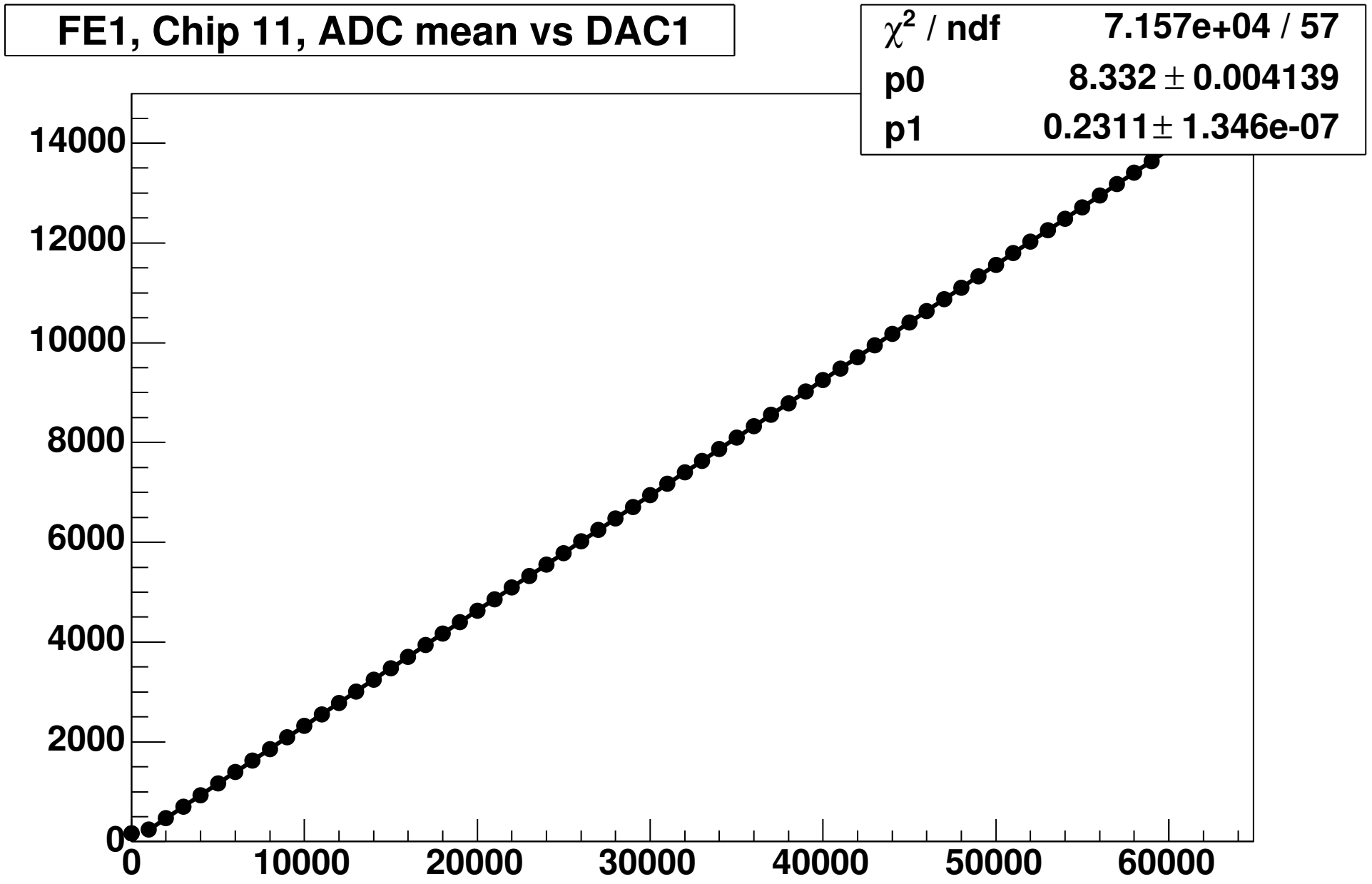

FE1, Chip 10, ADC noise vs DAC1
4.5
4
3.5
3
2.5
2
1.5
1
0
10000
20000
30000
40000
50000
60000

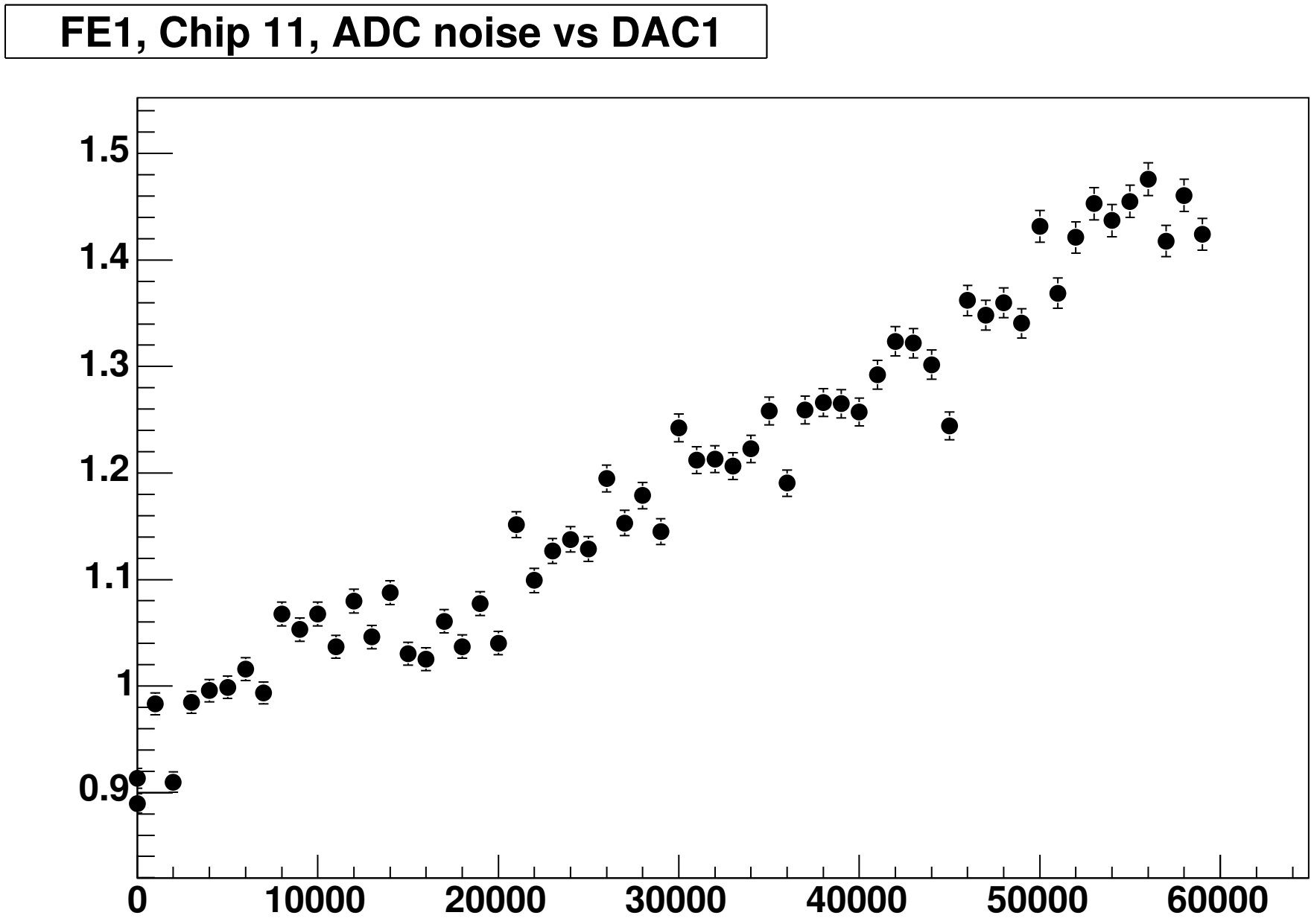

FE1, Chip 10, ADC residuals vs DAC1
4
3
2
1
0
-1
-2
0
10000
20000
30000
40000
50000
60000

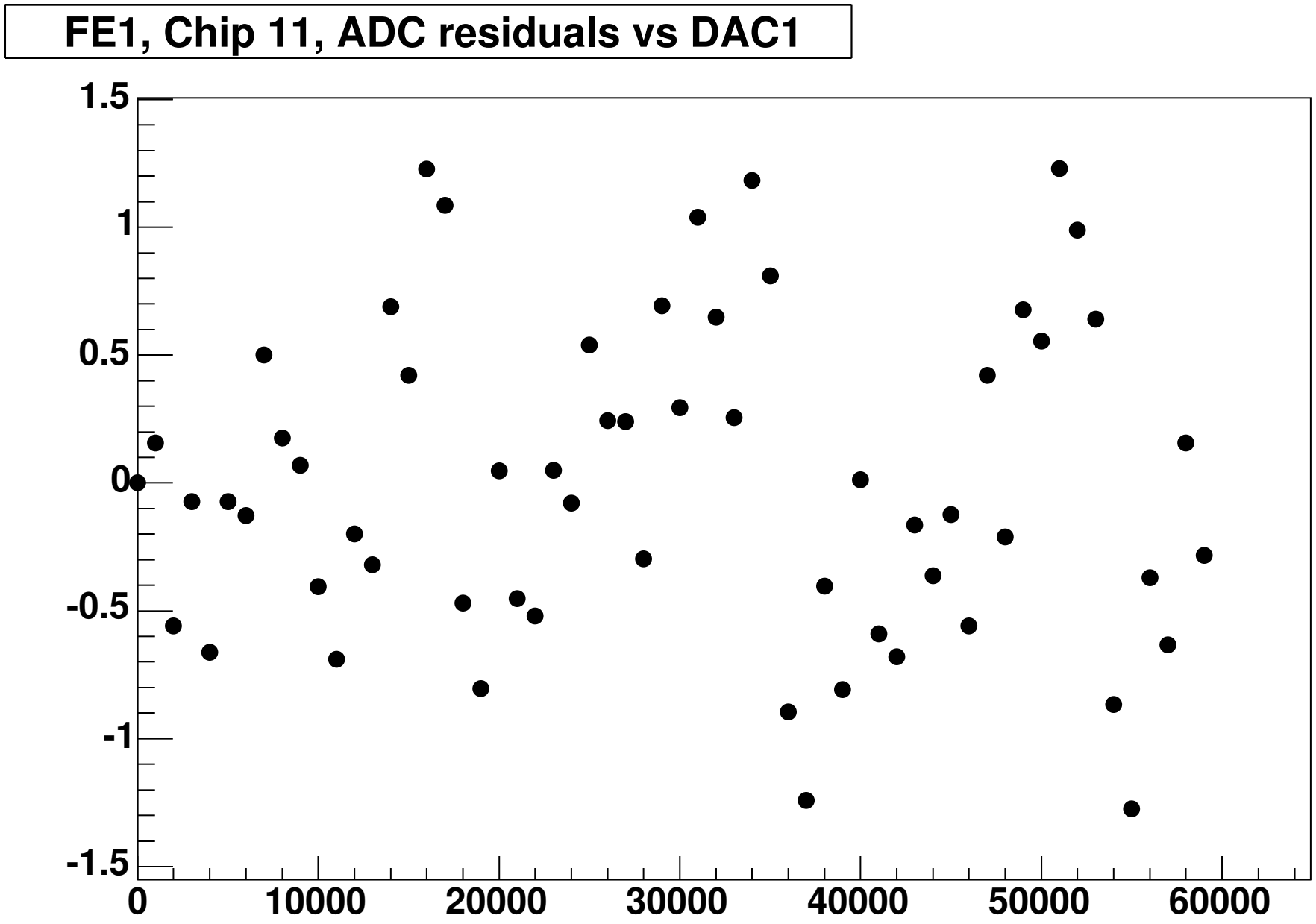

FE1, Chip 11, ADC mean vs DAC0
χ² / ndf 1.138e+05 / 57
p0 165.9 ± 0.003584
p1 4.322e-06 ± 1.054e-07
166.8
166.6
166.4
166.2
166
165.8
165.6
165.4
165.2
165
164.8
164.6
0
10000
20000
30000
40000
50000
60000

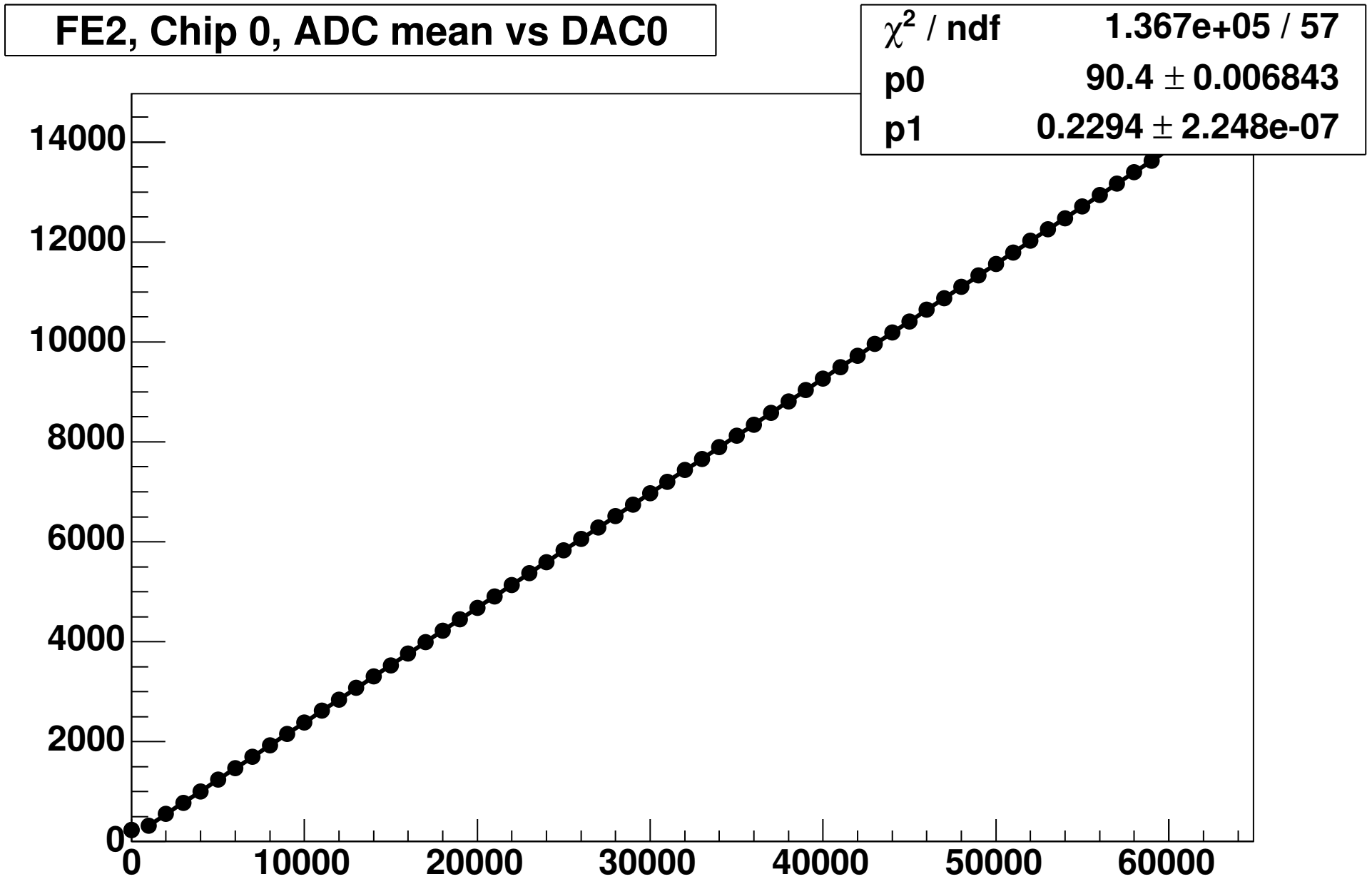

FE1, Chip 11, ADC noise vs DAC0
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0
10000
20000
30000
40000
50000
60000

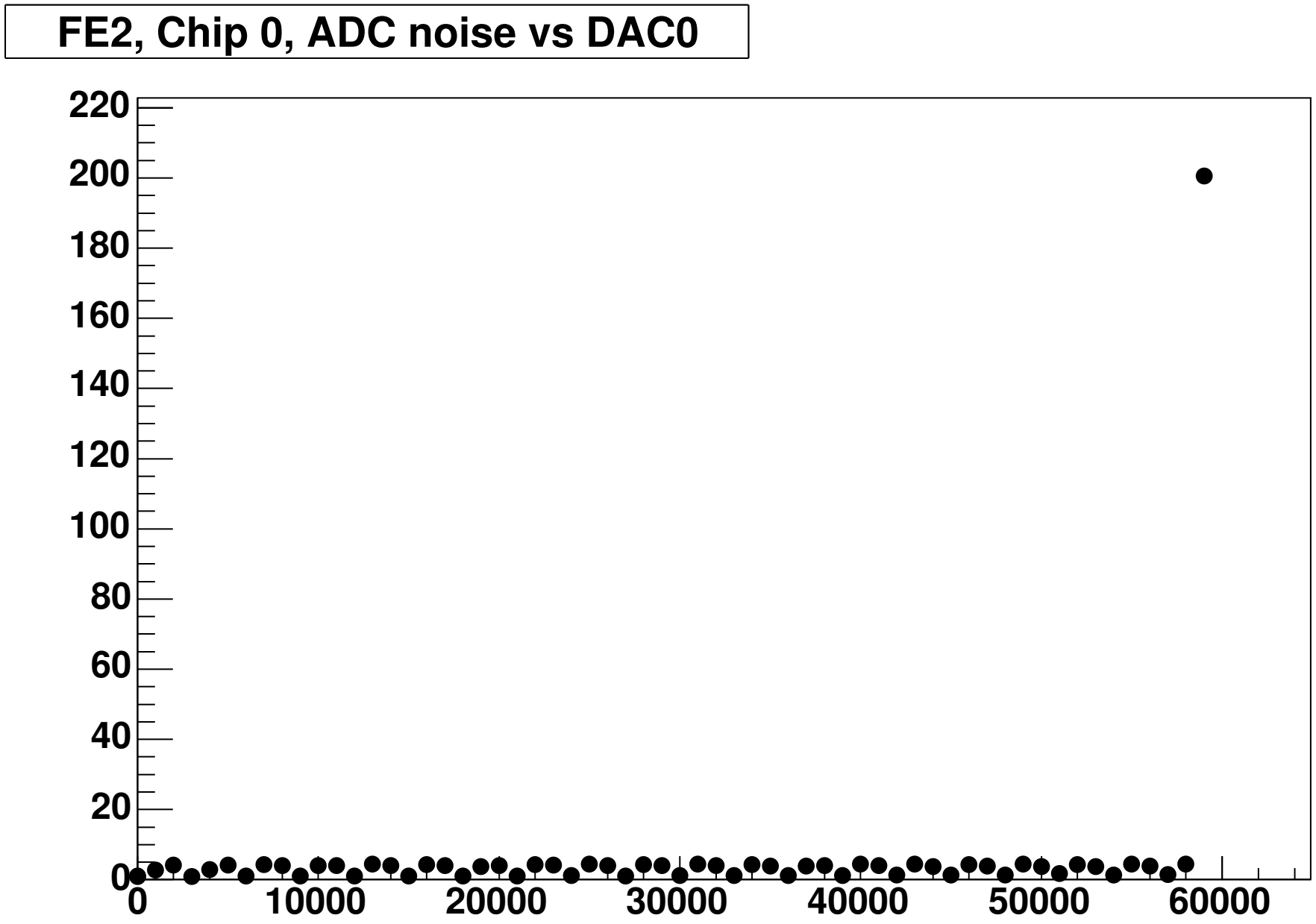

FE1, Chip 11, ADC residuals vs DAC0
0.8
0.6
0.4
0.2
-0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
-1.4
0
10000
20000
30000
40000
50000
60000

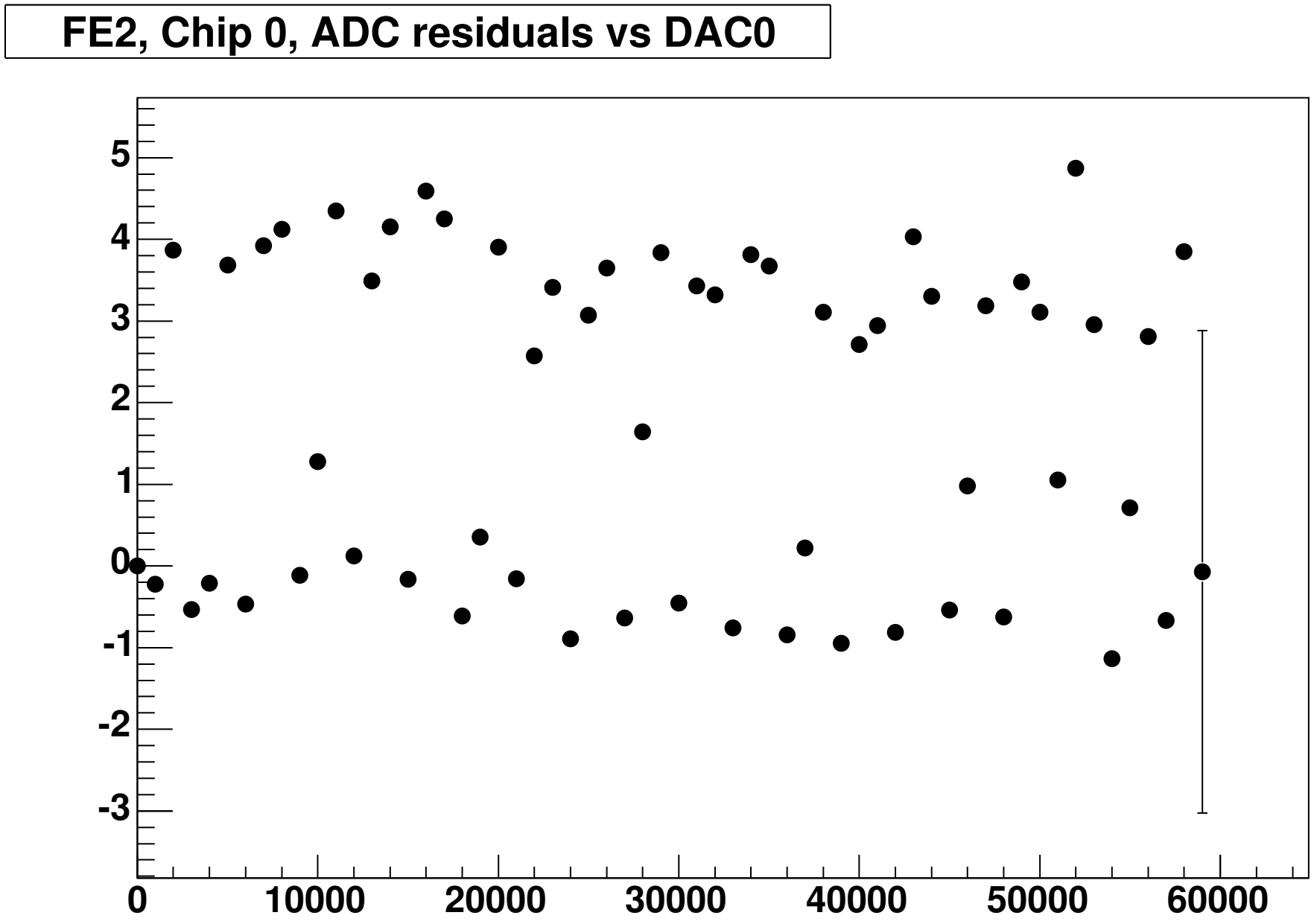

FE1, Chip 11, ADC mean vs DAC1
χ² / ndf 7.157e+04 / 57
p0 8.332 ± 0.004139
p1 0.2311 ± 1.346e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

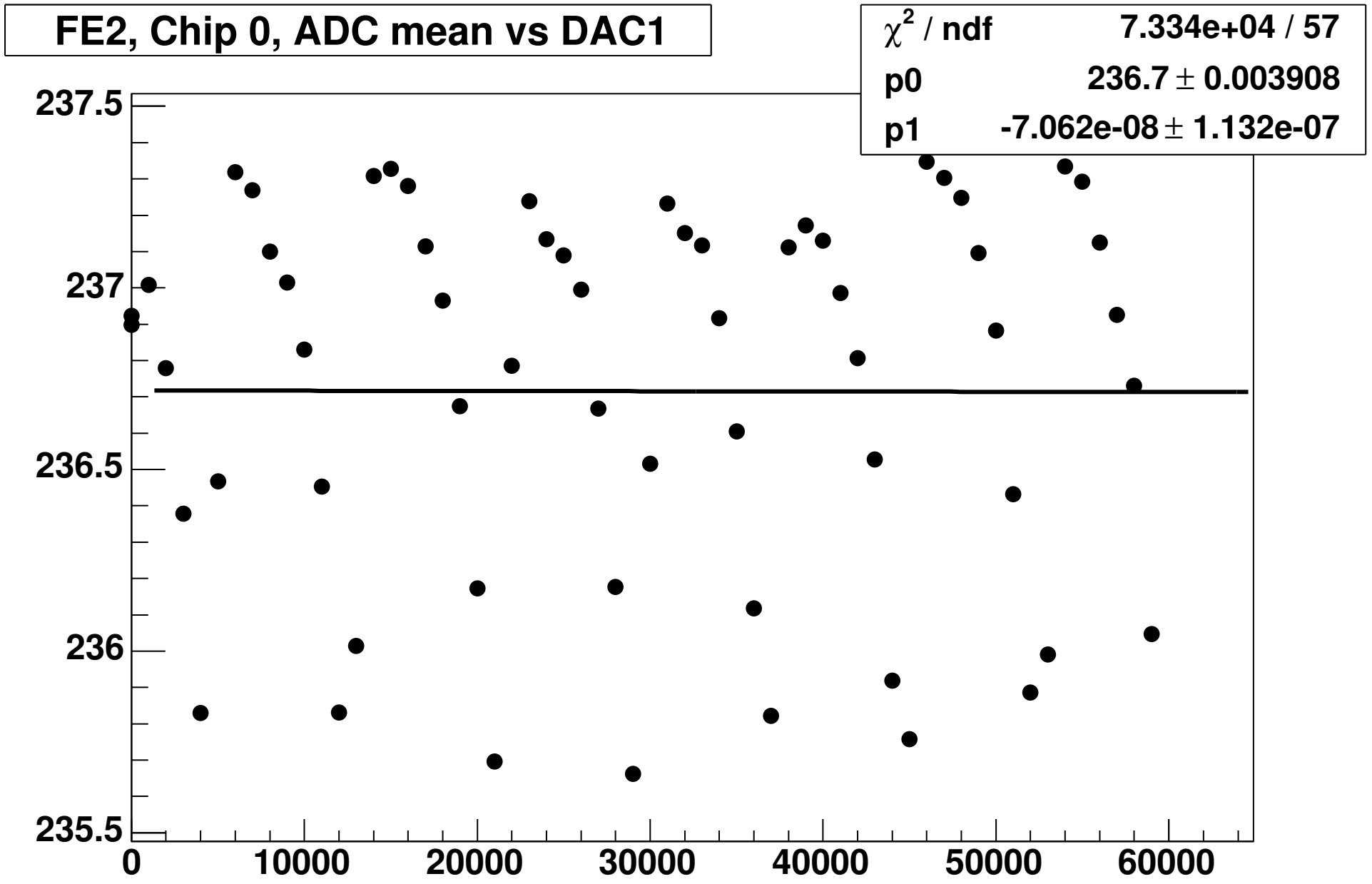

FE1, Chip 11, ADC noise vs DAC1
1.5
1.4
1.3
1.2
1.1
1
0.9
0
10000
20000
30000
40000
50000
60000

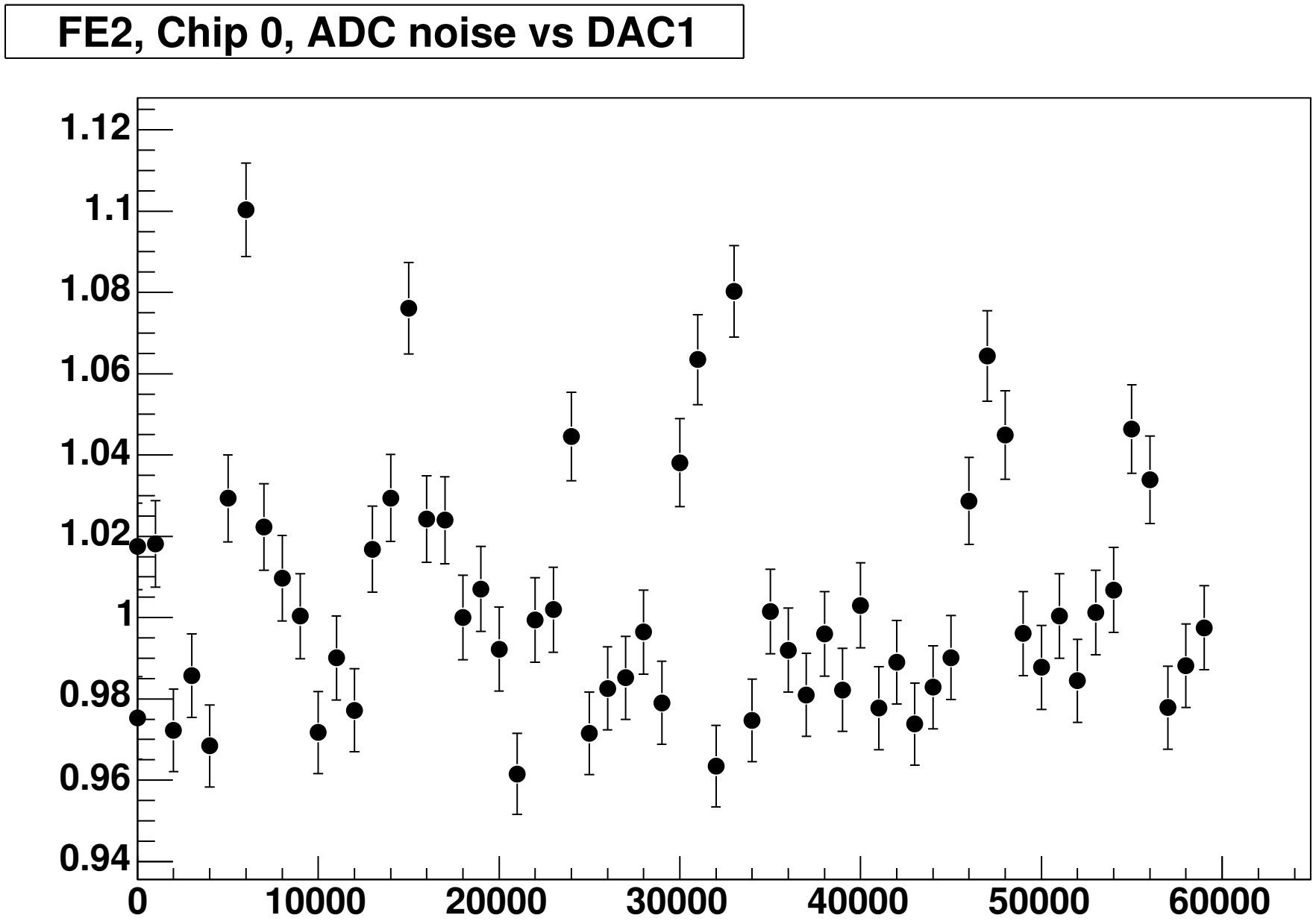

FE1, Chip 11, ADC residuals vs DAC1
1.5
1
0.5
0
-0.5
-1
-1.5
0
10000
20000
30000
40000
50000
60000

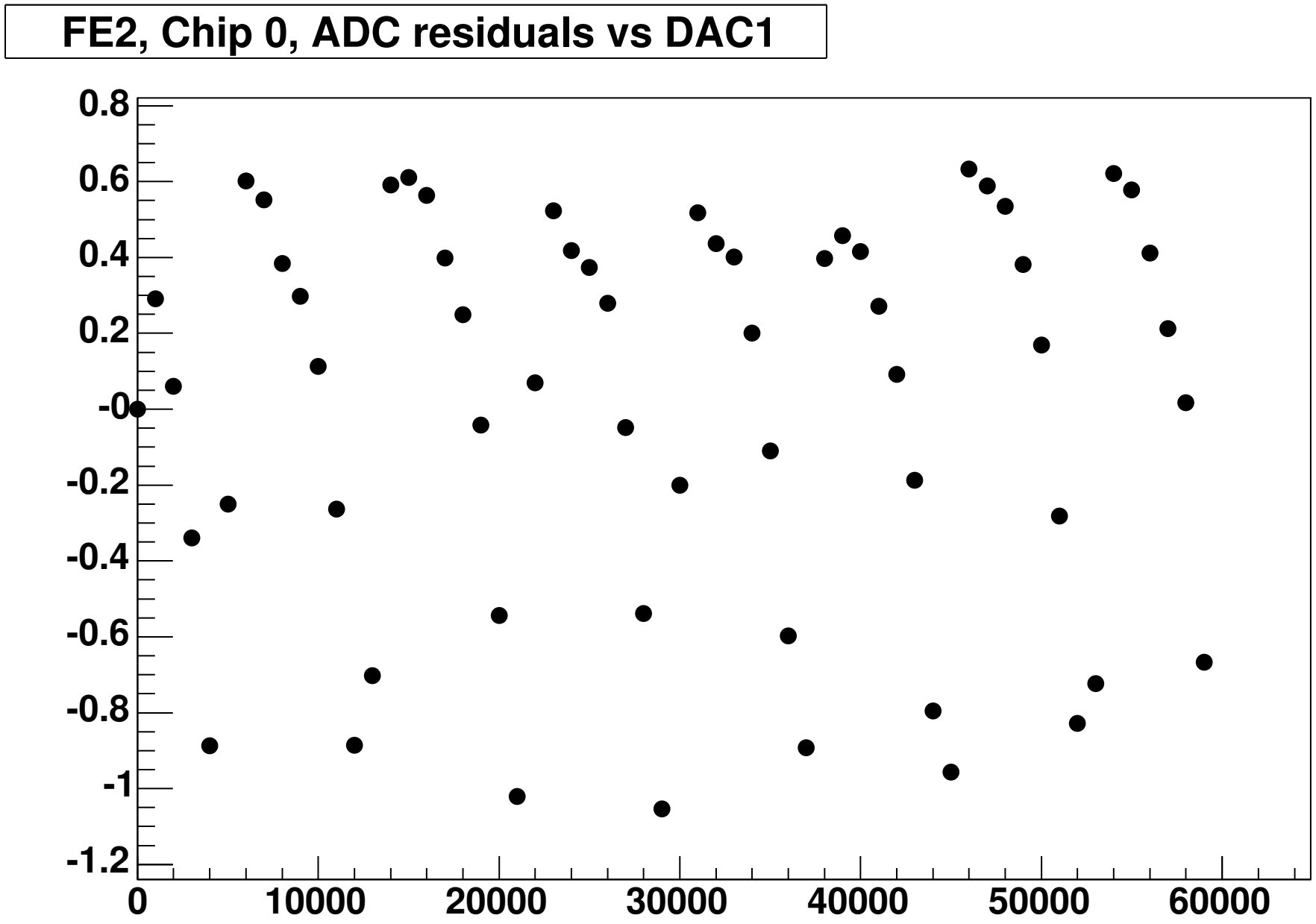

FE2, Chip 0, ADC mean vs DAC0
χ² / ndf 1.367e+05 / 57
p0 90.4 ± 0.006843
p1 0.2294 ± 2.248e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

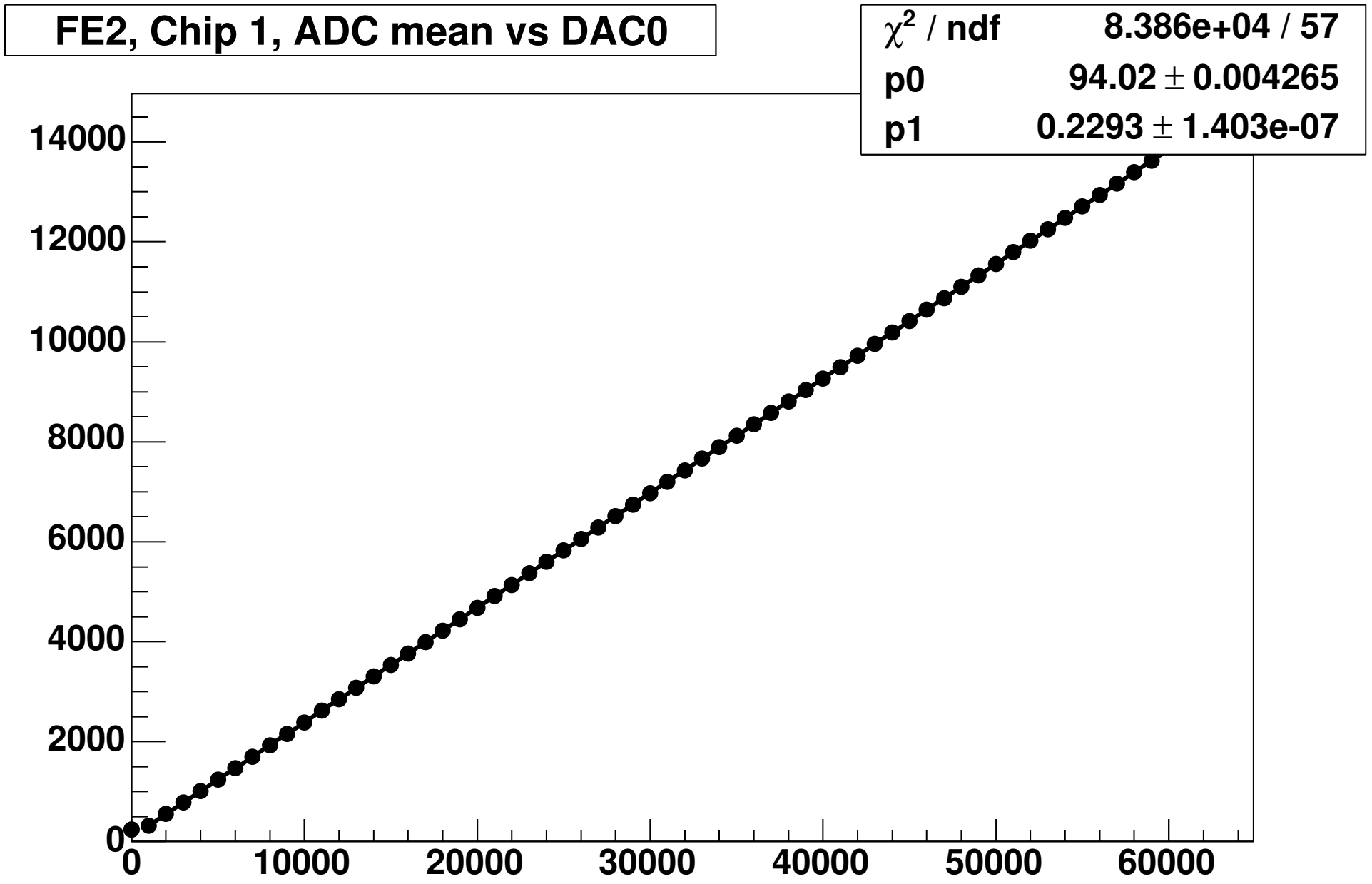

FE2, Chip 0, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

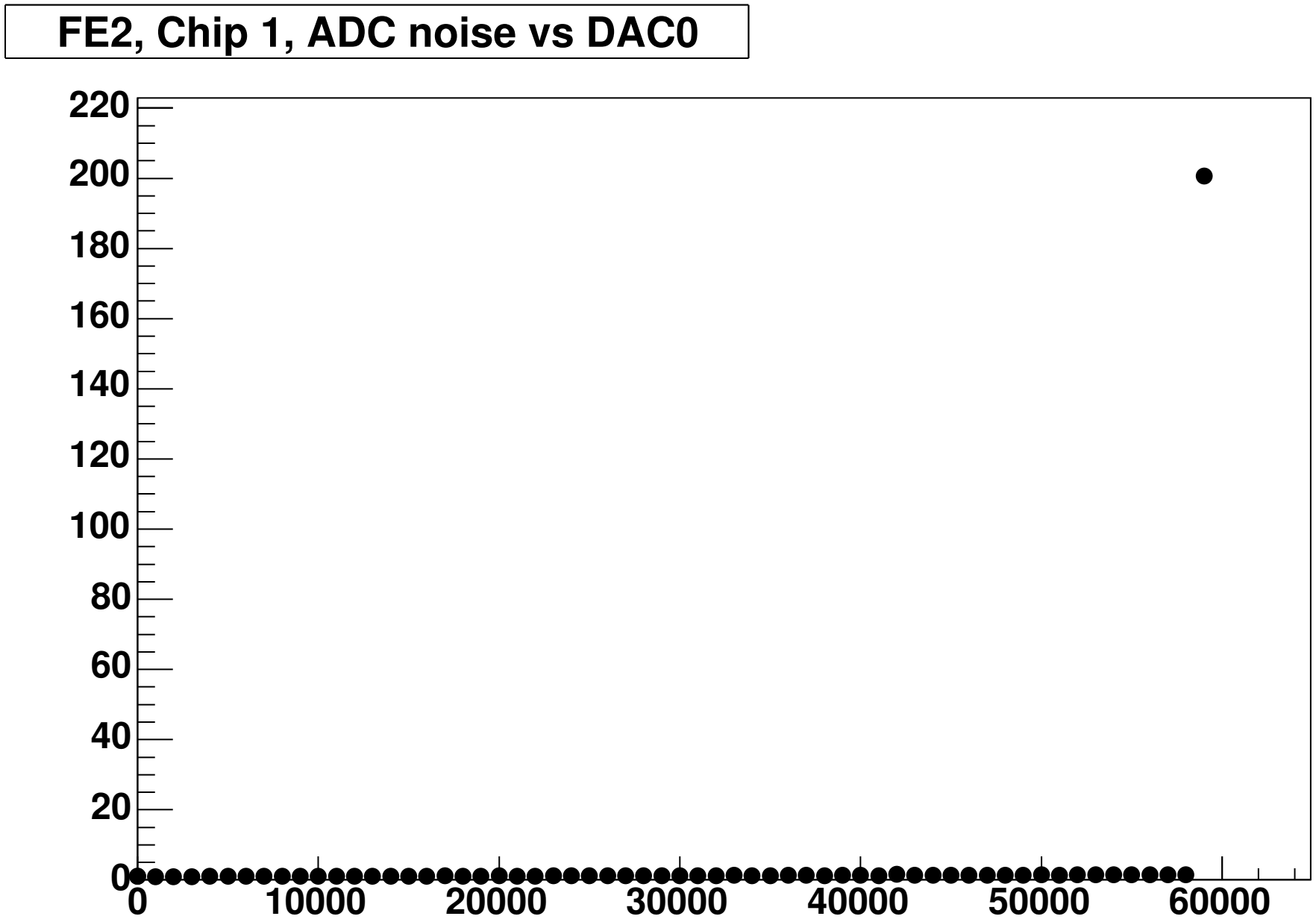

FE2, Chip 0, ADC residuals vs DAC0
5
4
3
2
1
0
-1
-2
-3
0
10000
20000
30000
40000
50000
60000

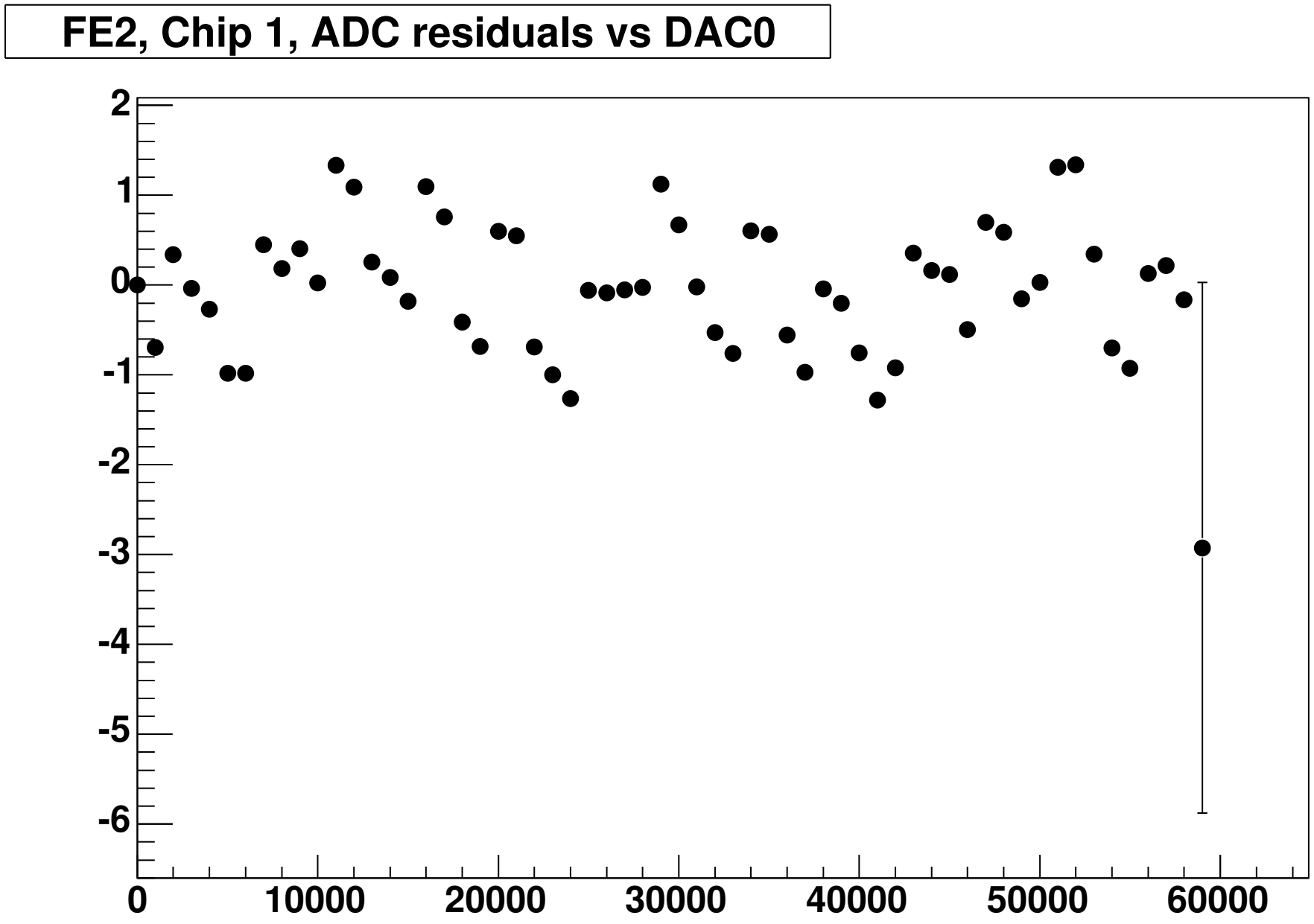

FE2, Chip 0, ADC mean vs DAC1
χ² / ndf 7.334e+04 / 57
p0 236.7 ± 0.003908
p1 -7.062e-08 ± 1.132e-07
237.5
237
236.5
236
235.5
0
10000
20000
30000
40000
50000
60000

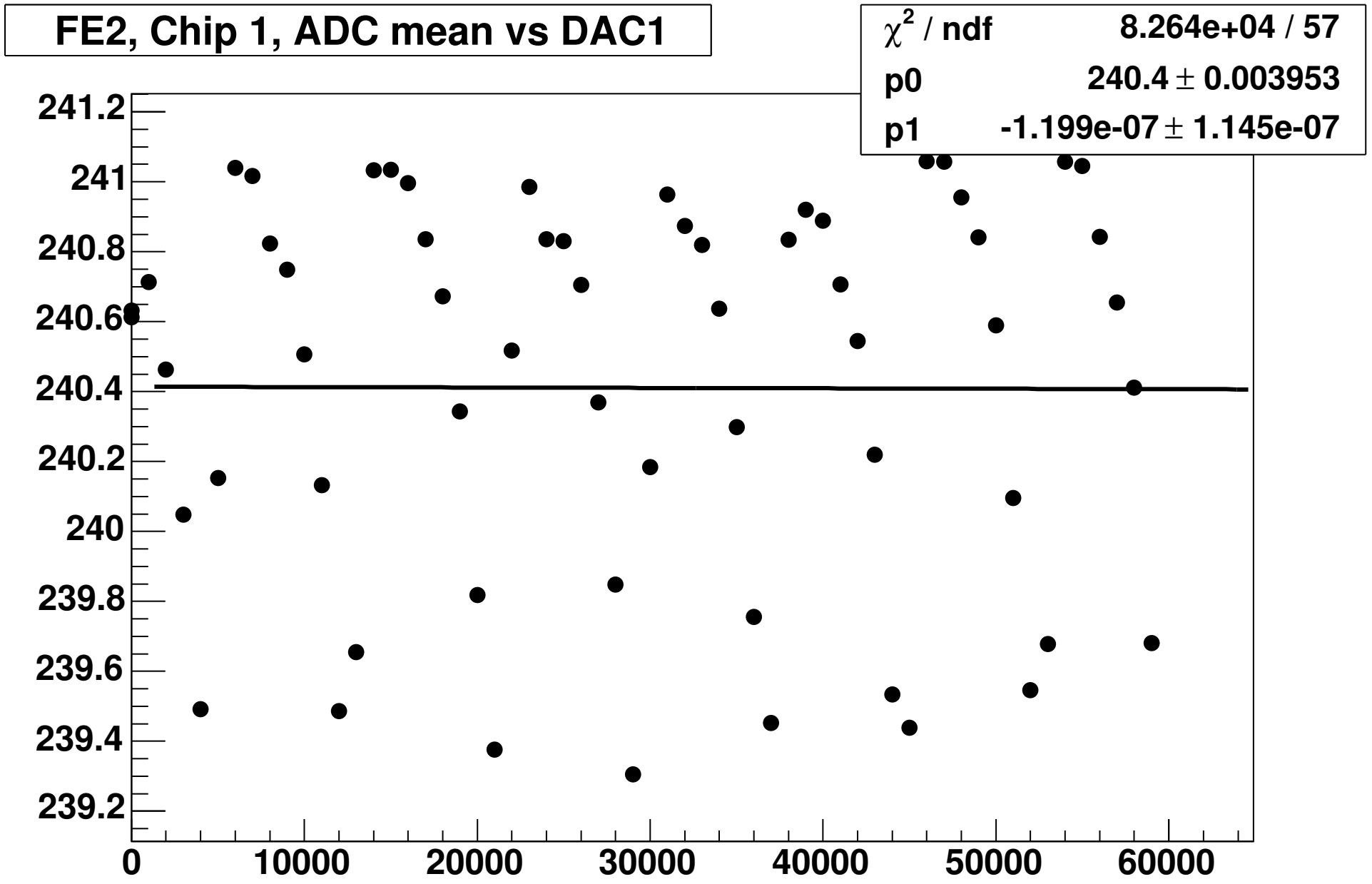

FE2, Chip 0, ADC noise vs DAC1
1.12
1.1
1.08
1.06
1.04
1.02
1
0.98
0.96
0.94
0
10000
20000
30000
40000
50000
60000

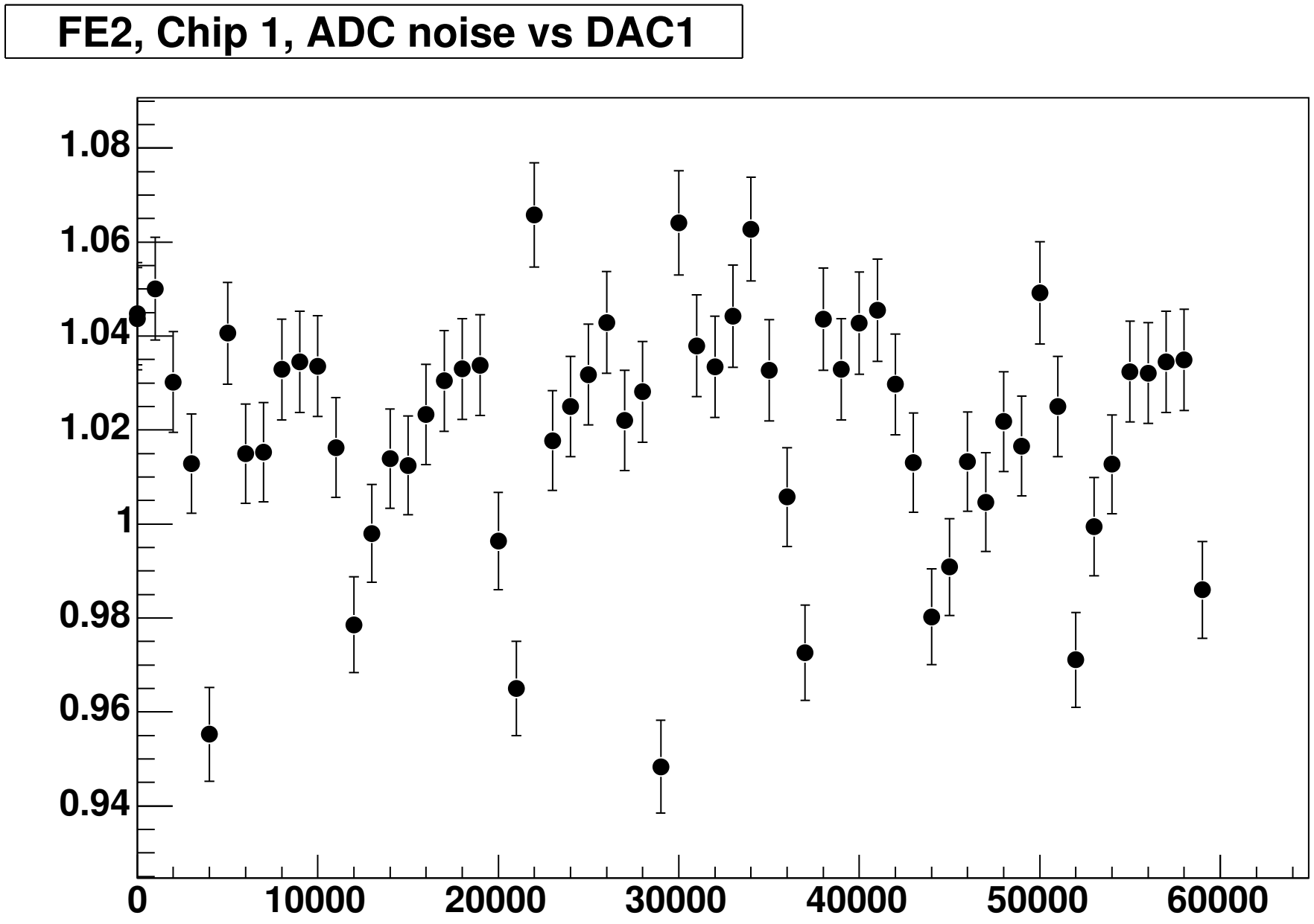

FE2, Chip 0, ADC residuals vs DAC1
0.8
0.6
0.4
0.2
-0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
0
10000
20000
30000
40000
50000
60000

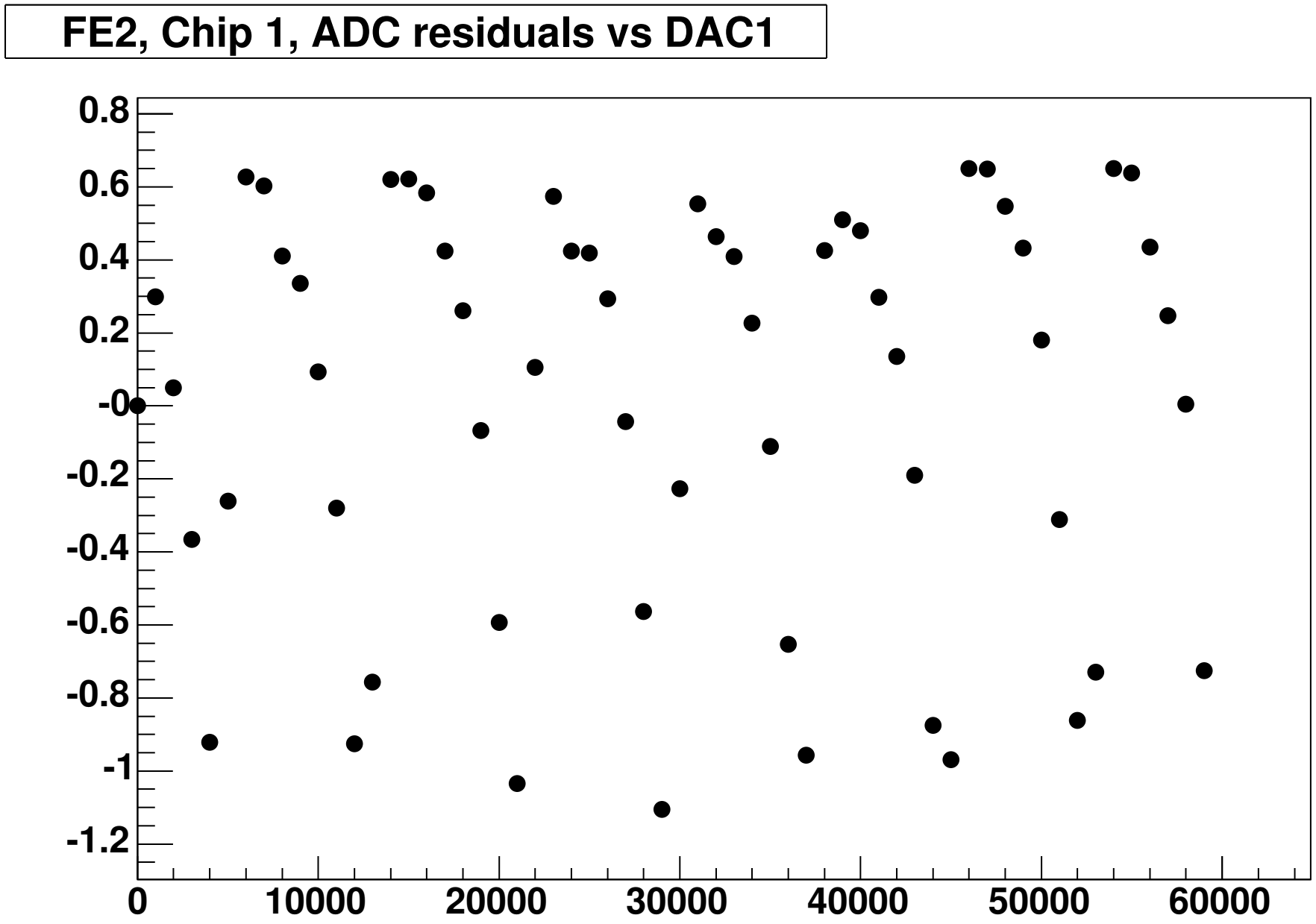

FE2, Chip 1, ADC mean vs DAC0
χ² / ndf 8.386e+04 / 57
p0 94.02 ± 0.004265
p1 0.2293 ± 1.403e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

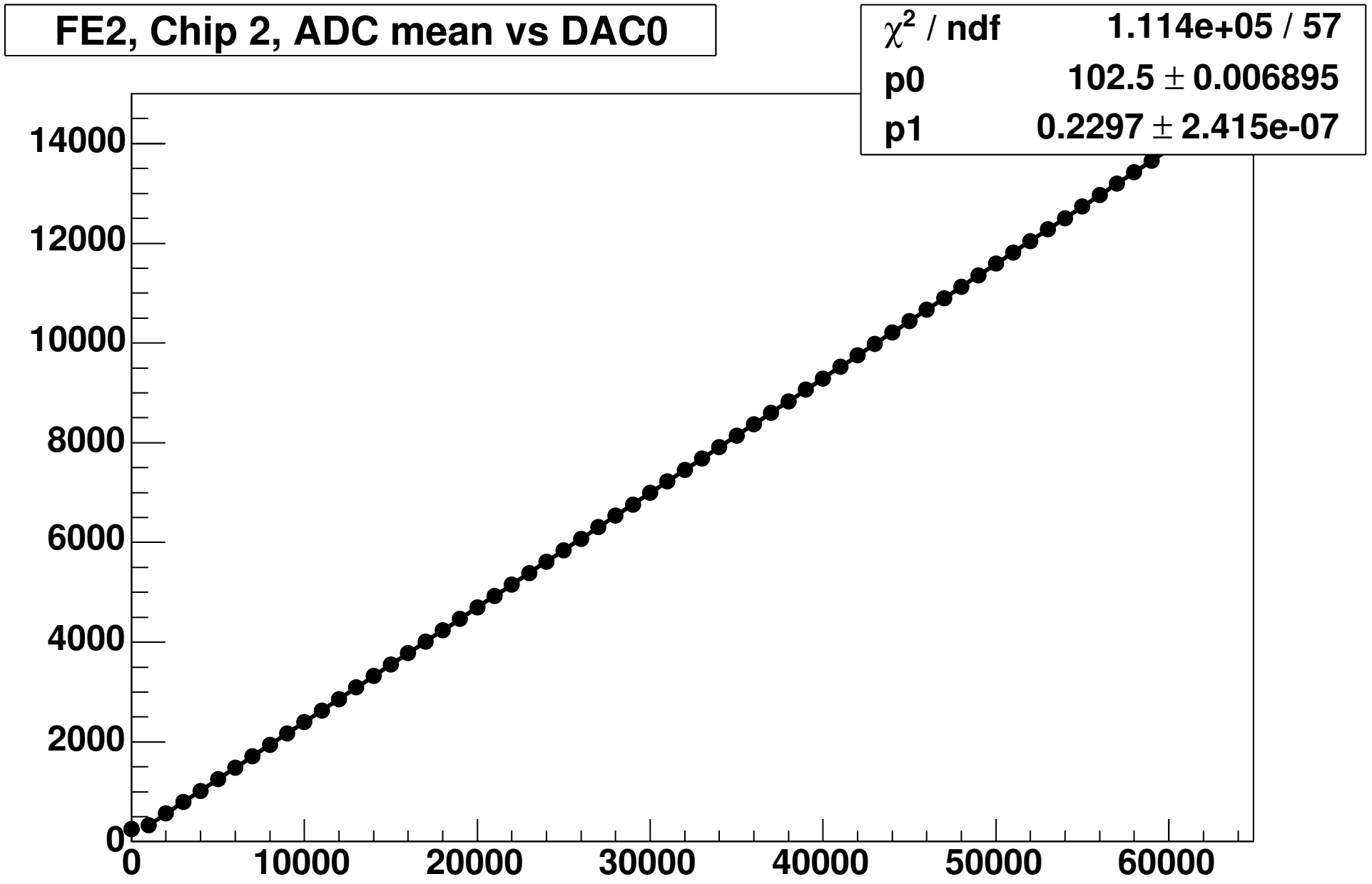

FE2, Chip 1, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

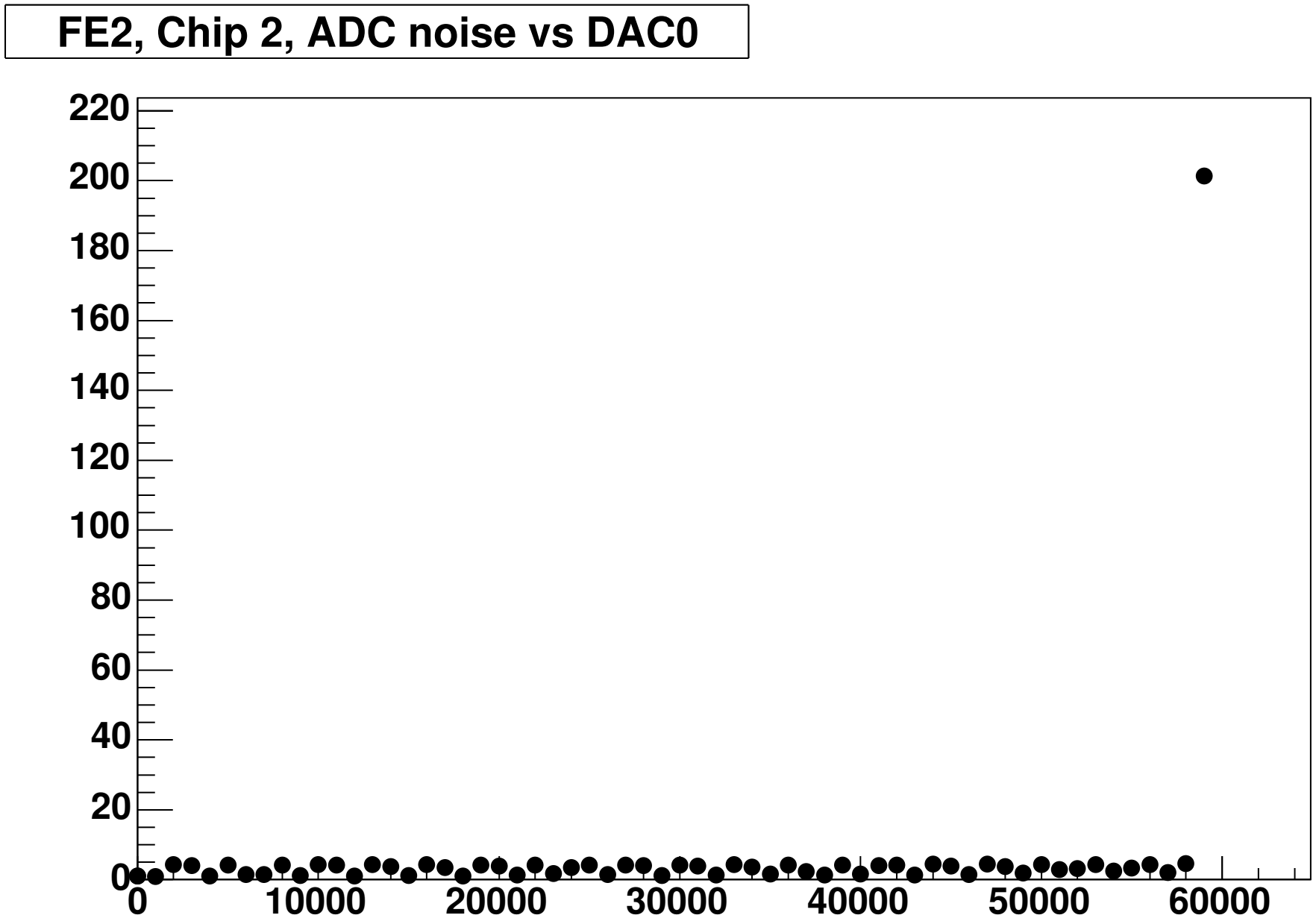

FE2, Chip 1, ADC residuals vs DAC0
2
1
0
-1
-2
-3
-4
-5
-6
0
10000
20000
30000
40000
50000
60000

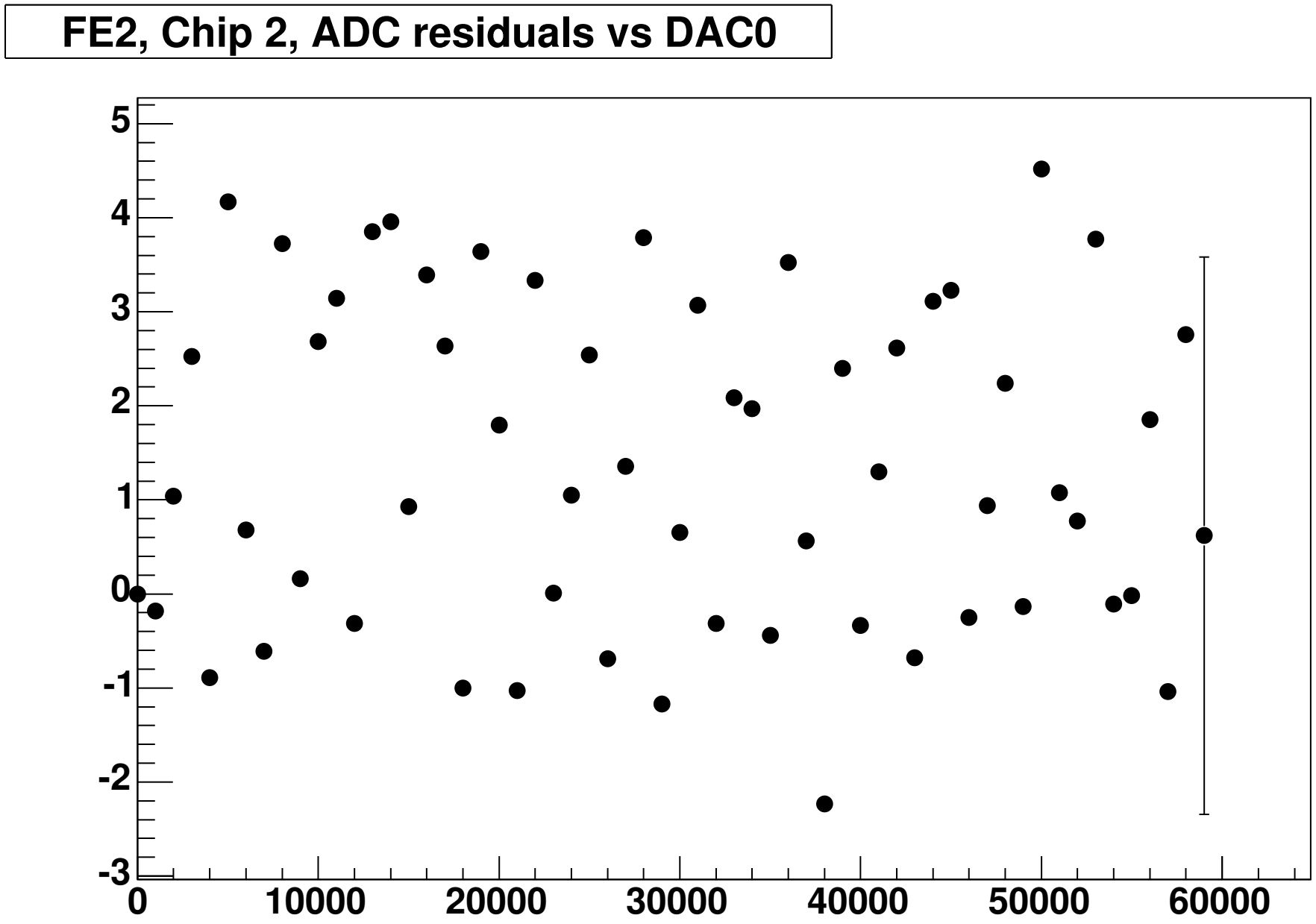

FE2, Chip 1, ADC mean vs DAC1
χ² / ndf 8.264e+04 / 57
p0 240.4 ± 0.003953
p1 -1.199e-07 ± 1.145e-07
241.2
241
240.8
240.6
240.4
240.2
240
239.8
239.6
239.4
239.2
0
10000
20000
30000
40000
50000
60000

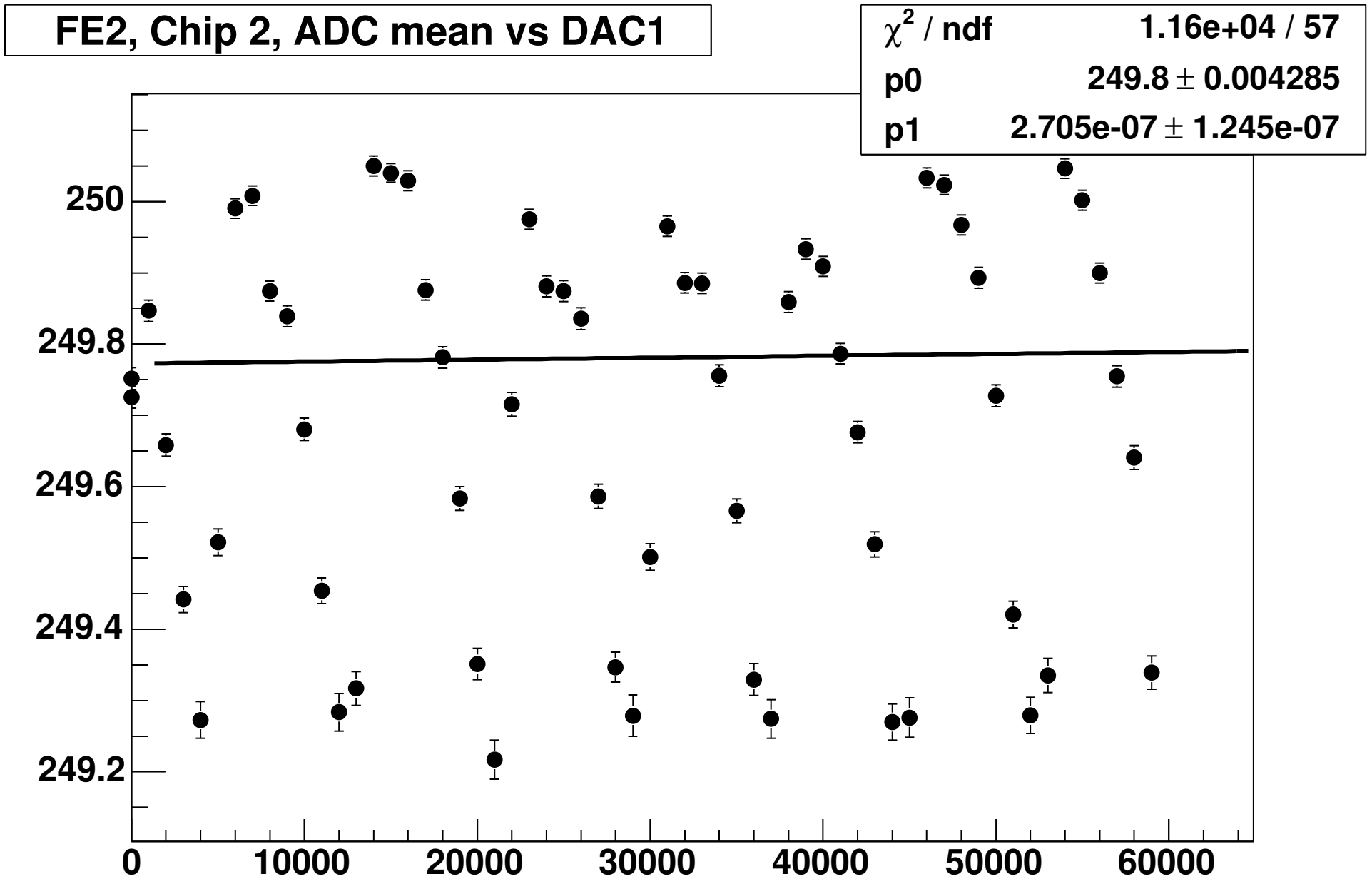

FE2, Chip 1, ADC noise vs DAC1
1.08
1.06
1.04
1.02
1
0.98
0.96
0.94
0
10000
20000
30000
40000
50000
60000

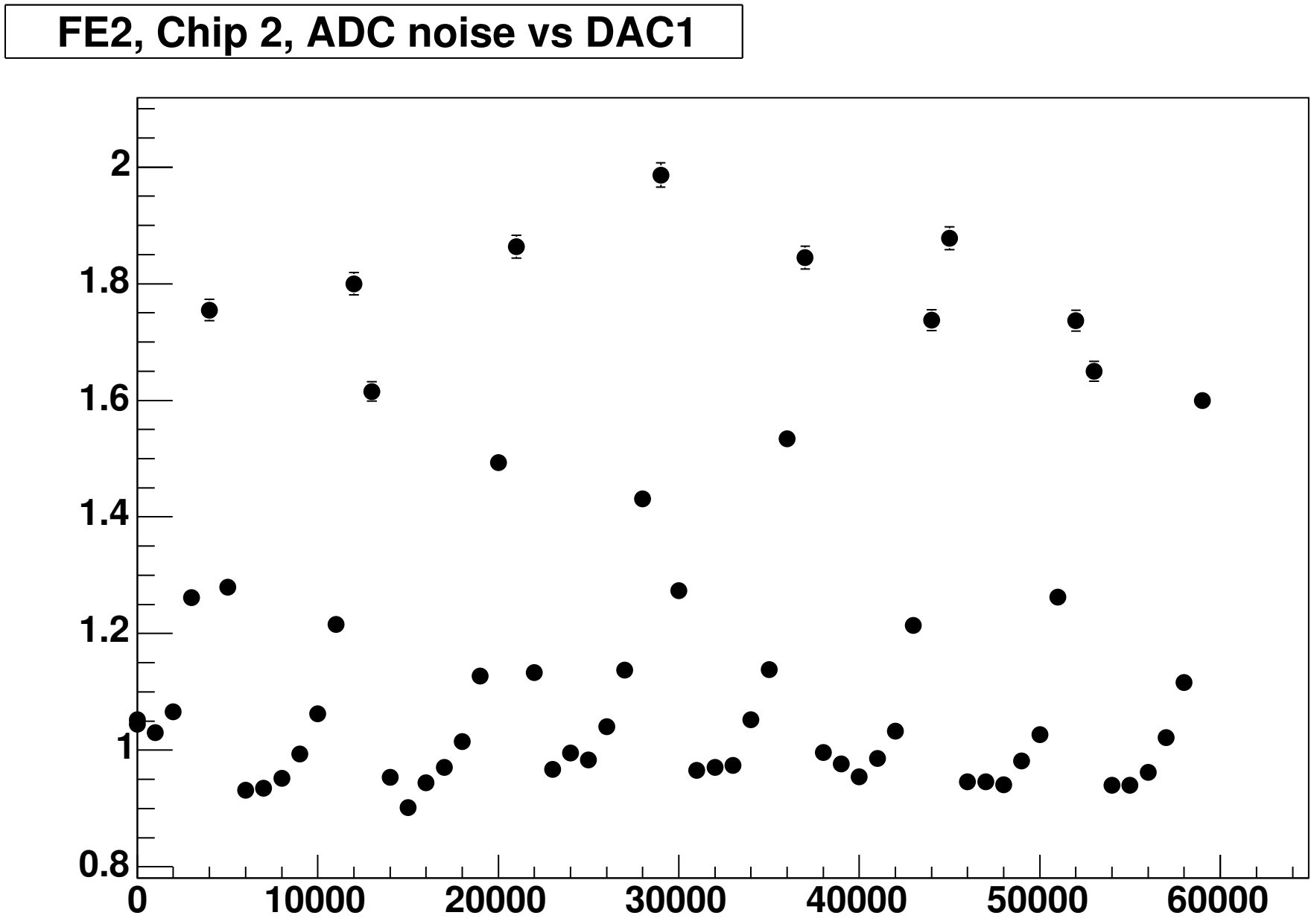

FE2, Chip 1, ADC residuals vs DAC1
0.8
0.6
0.4
0.2
-0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
0
10000
20000
30000
40000
50000
60000

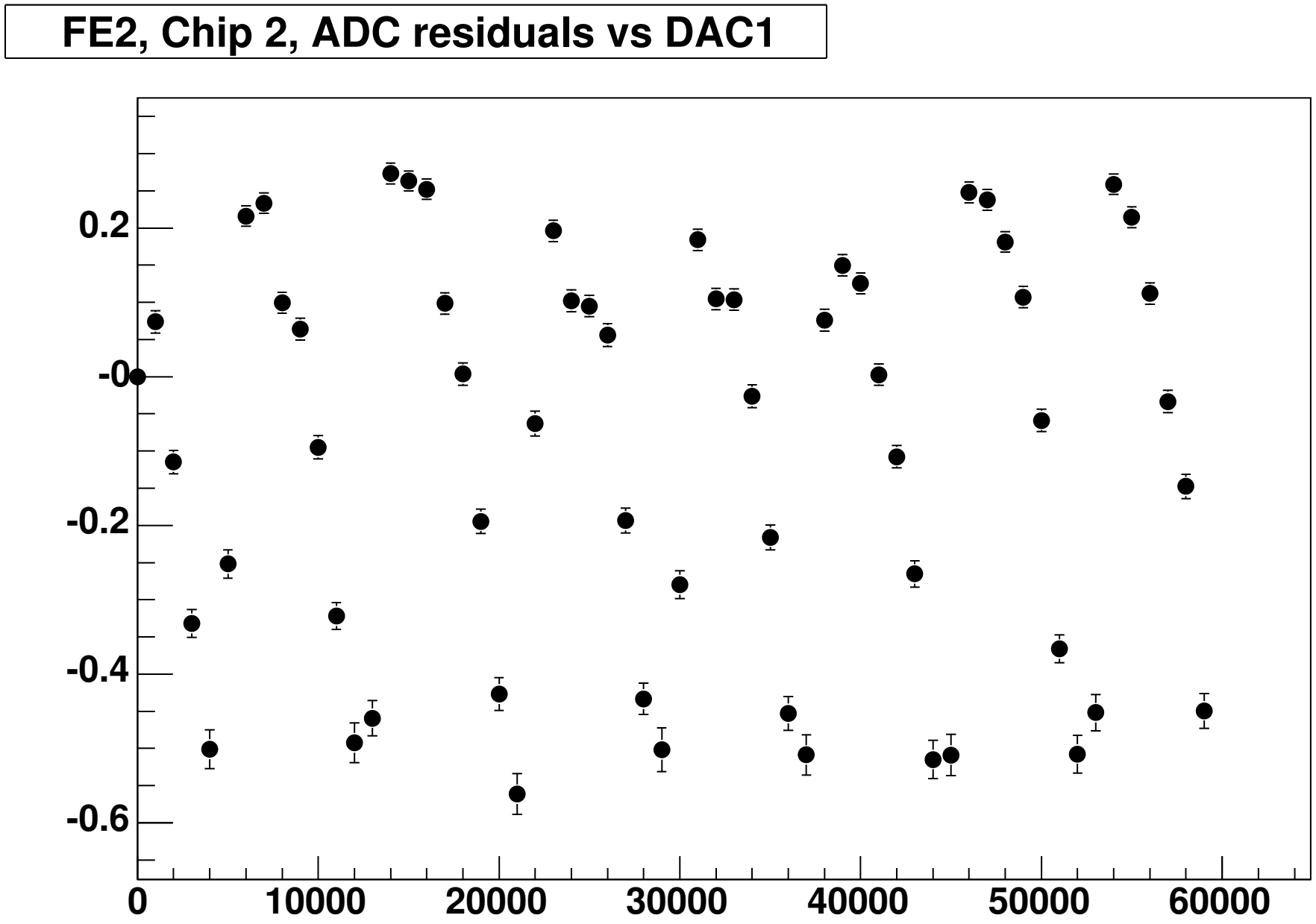

FE2, Chip 2, ADC mean vs DAC0
χ² / ndf 1.114e+05 / 57
p0 102.5 ± 0.006895
p1 0.2297 ± 2.415e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

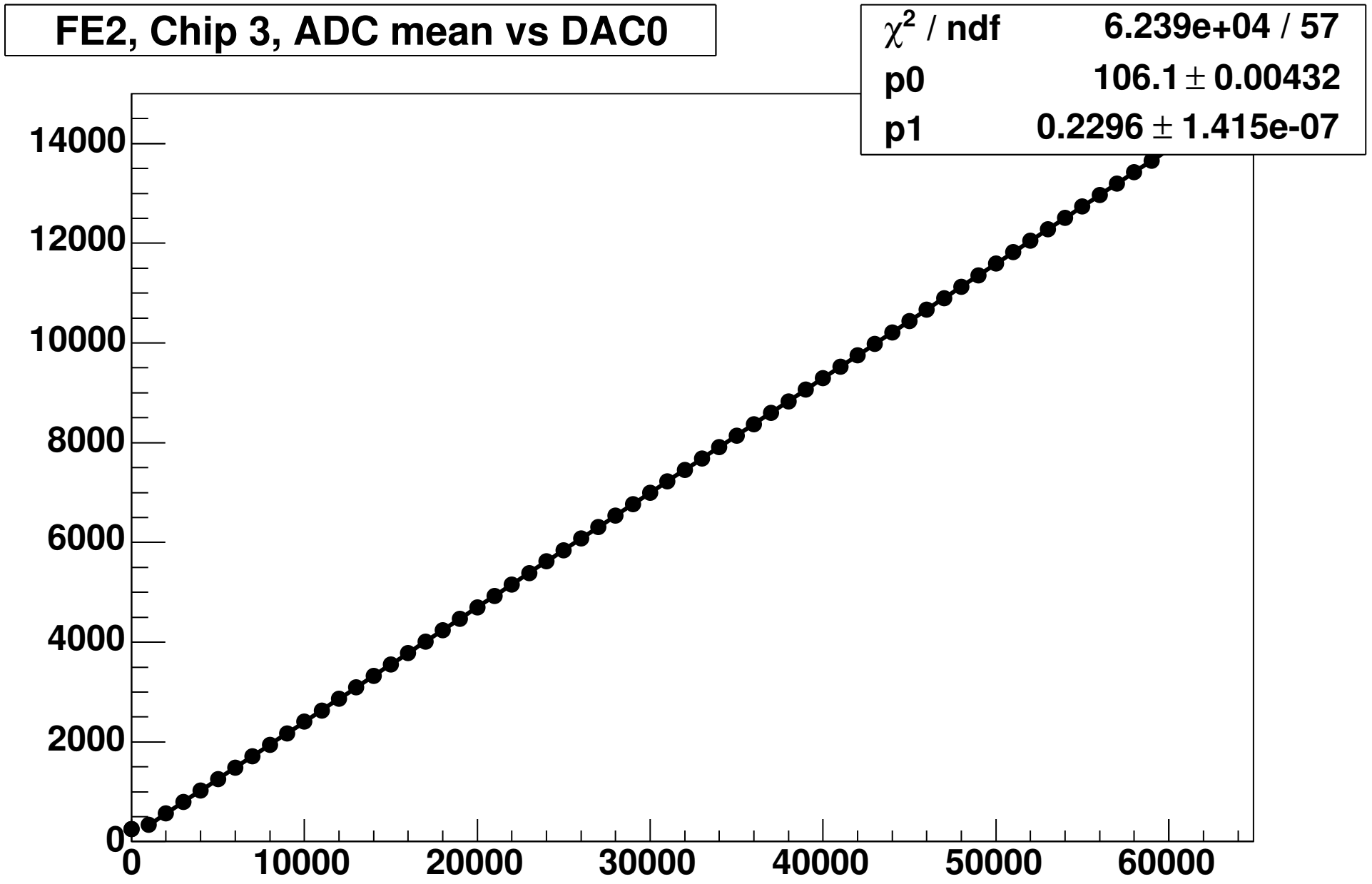

FE2, Chip 2, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

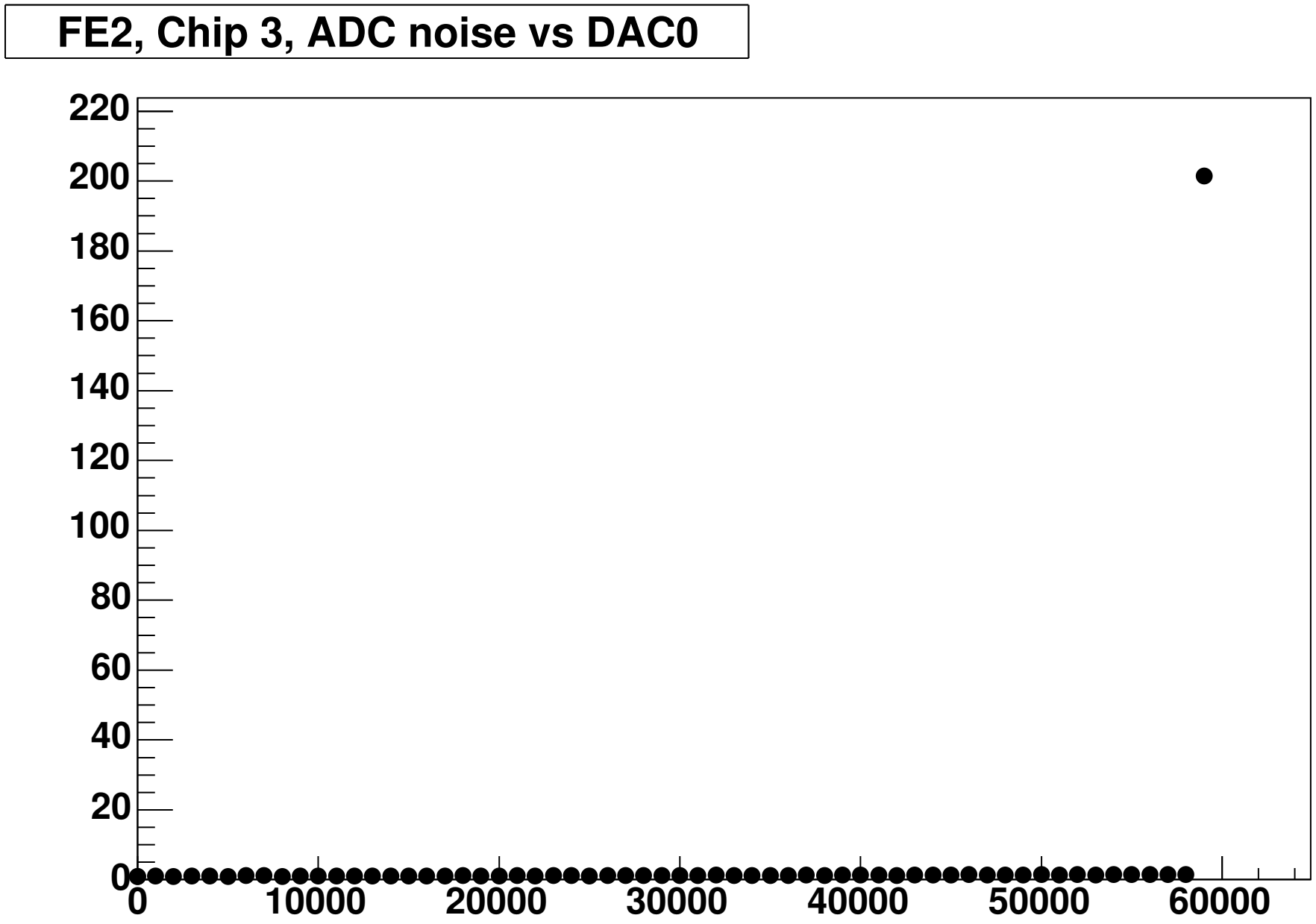

FE2, Chip 2, ADC residuals vs DAC0
5
4
3
2
1
0
-1
-2
-3
0
10000
20000
30000
40000
50000
60000

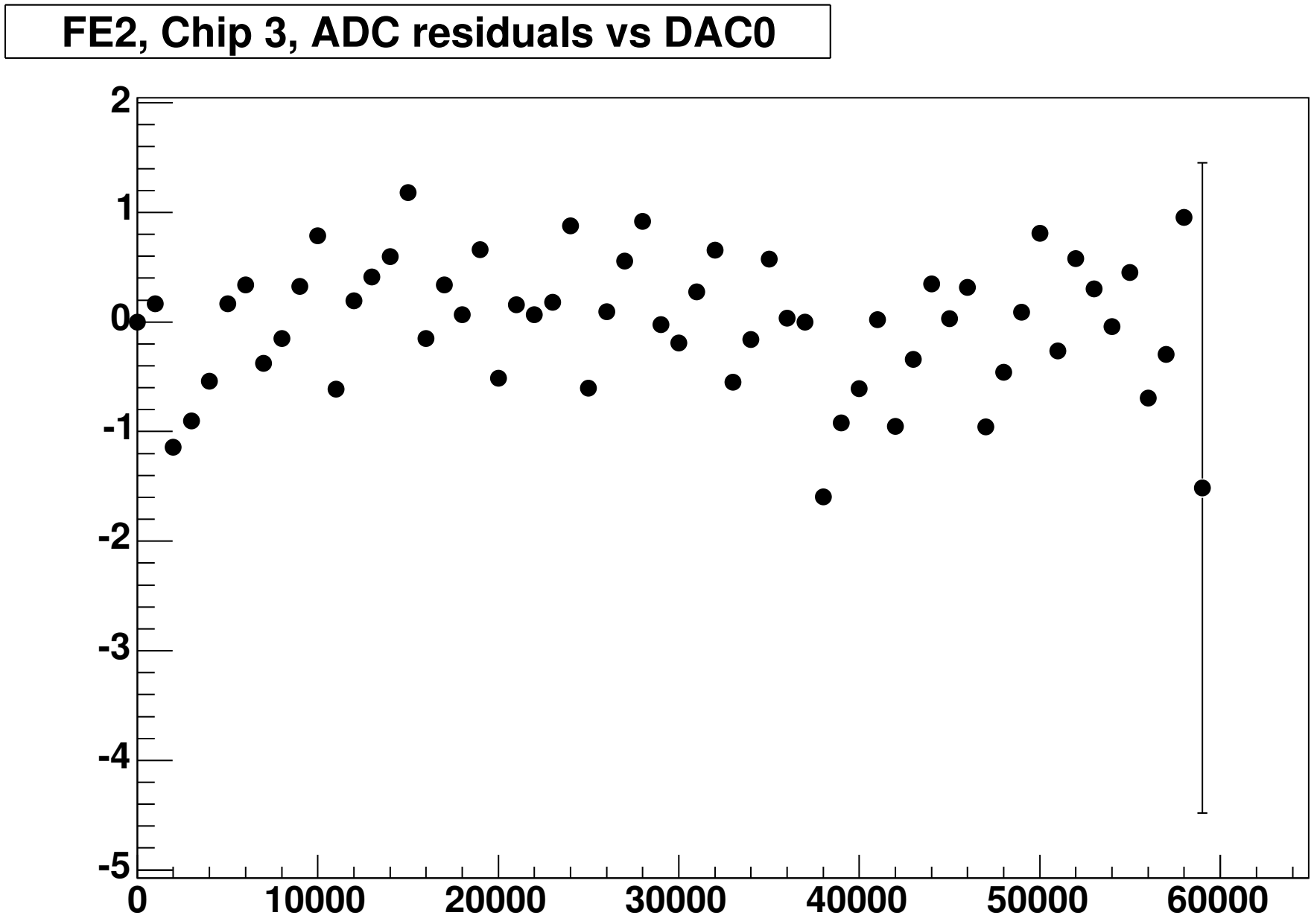

FE2, Chip 2, ADC mean vs DAC1
χ² / ndf 1.16e+04 / 57
p0 249.8 ± 0.004285
p1 2.705e-07 ± 1.245e-07
250
249.8
249.6
249.4
249.2
0
10000
20000
30000
40000
50000
60000

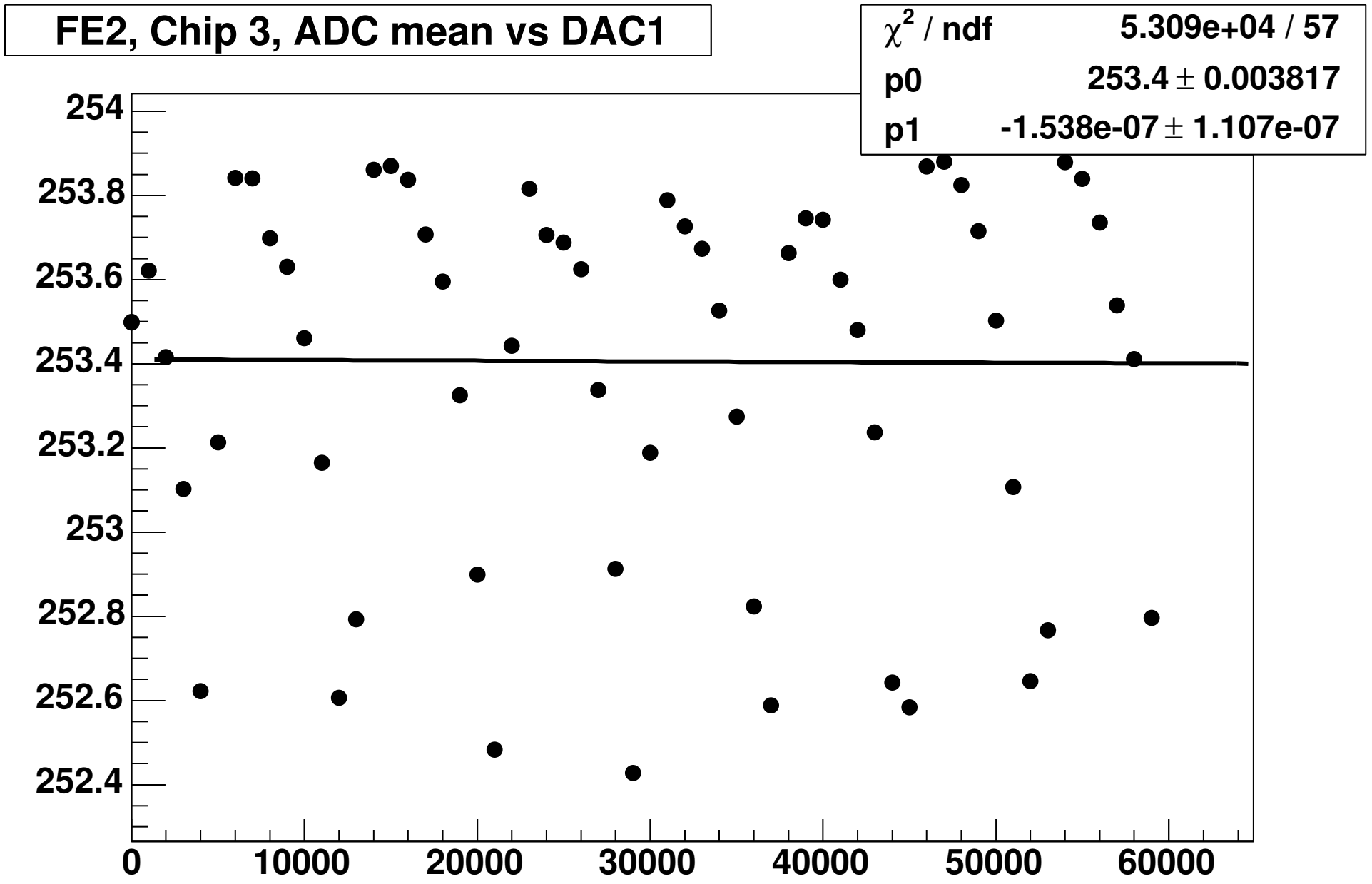

FE2, Chip 2, ADC noise vs DAC1
2
1.8
1.6
1.4
1.2
1
0.8
0
10000
20000
30000
40000
50000
60000

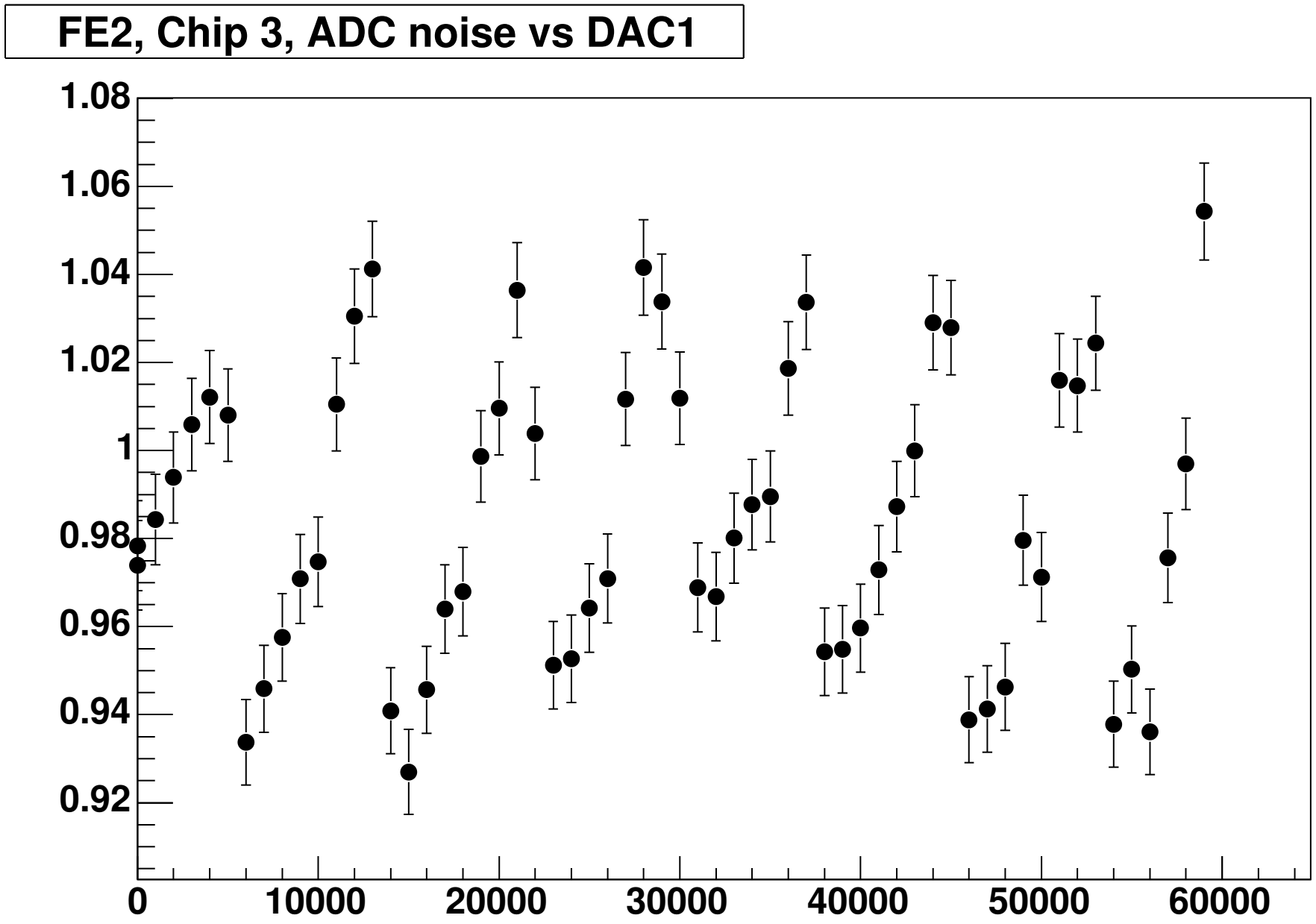

FE2, Chip 2, ADC residuals vs DAC1
0.2
-0
-0.2
-0.4
-0.6
0
10000
20000
30000
40000
50000
60000

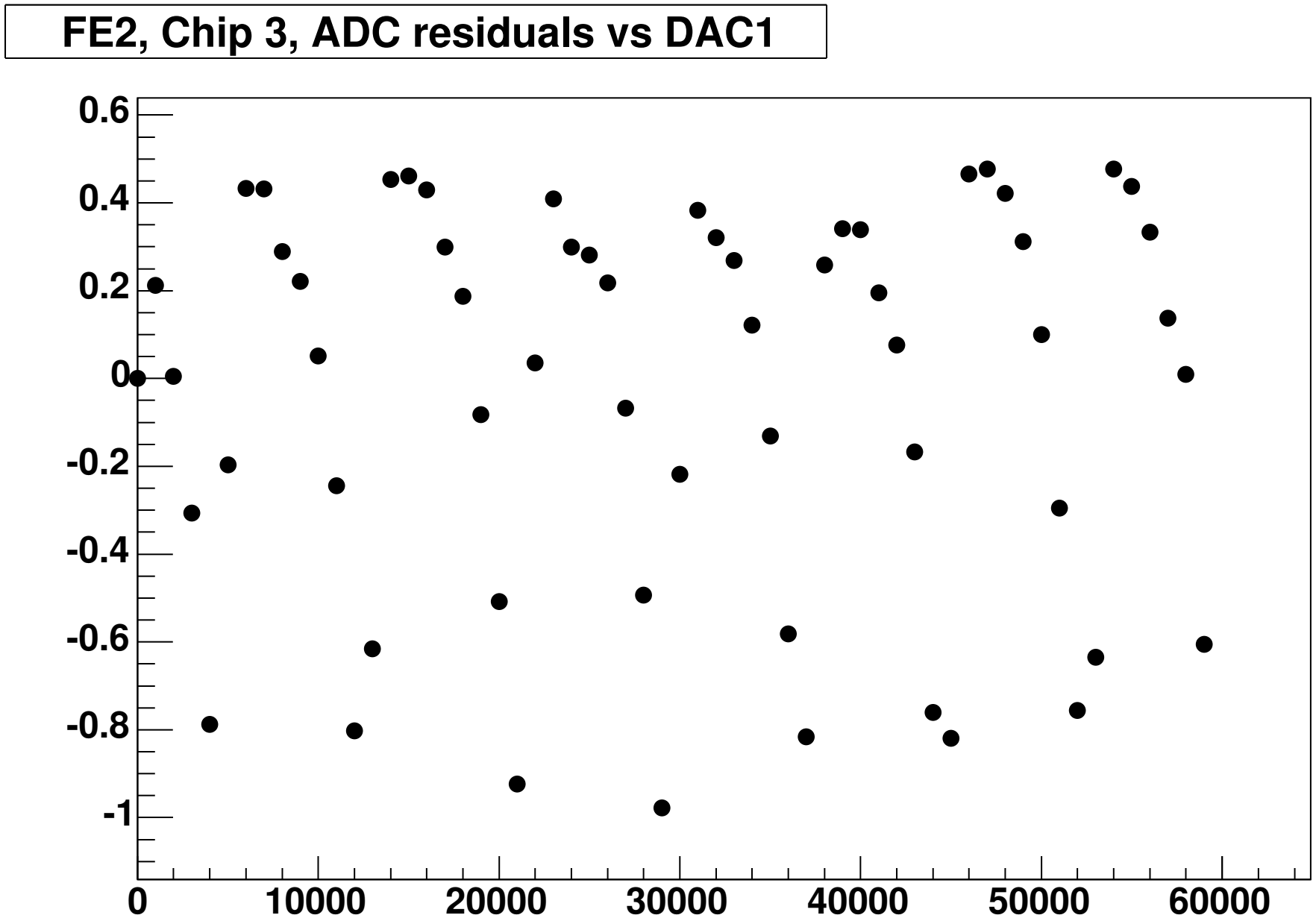

FE2, Chip 3, ADC mean vs DAC0
χ² / ndf 6.239e+04 / 57
p0 106.1 ± 0.00432
p1 0.2296 ± 1.415e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

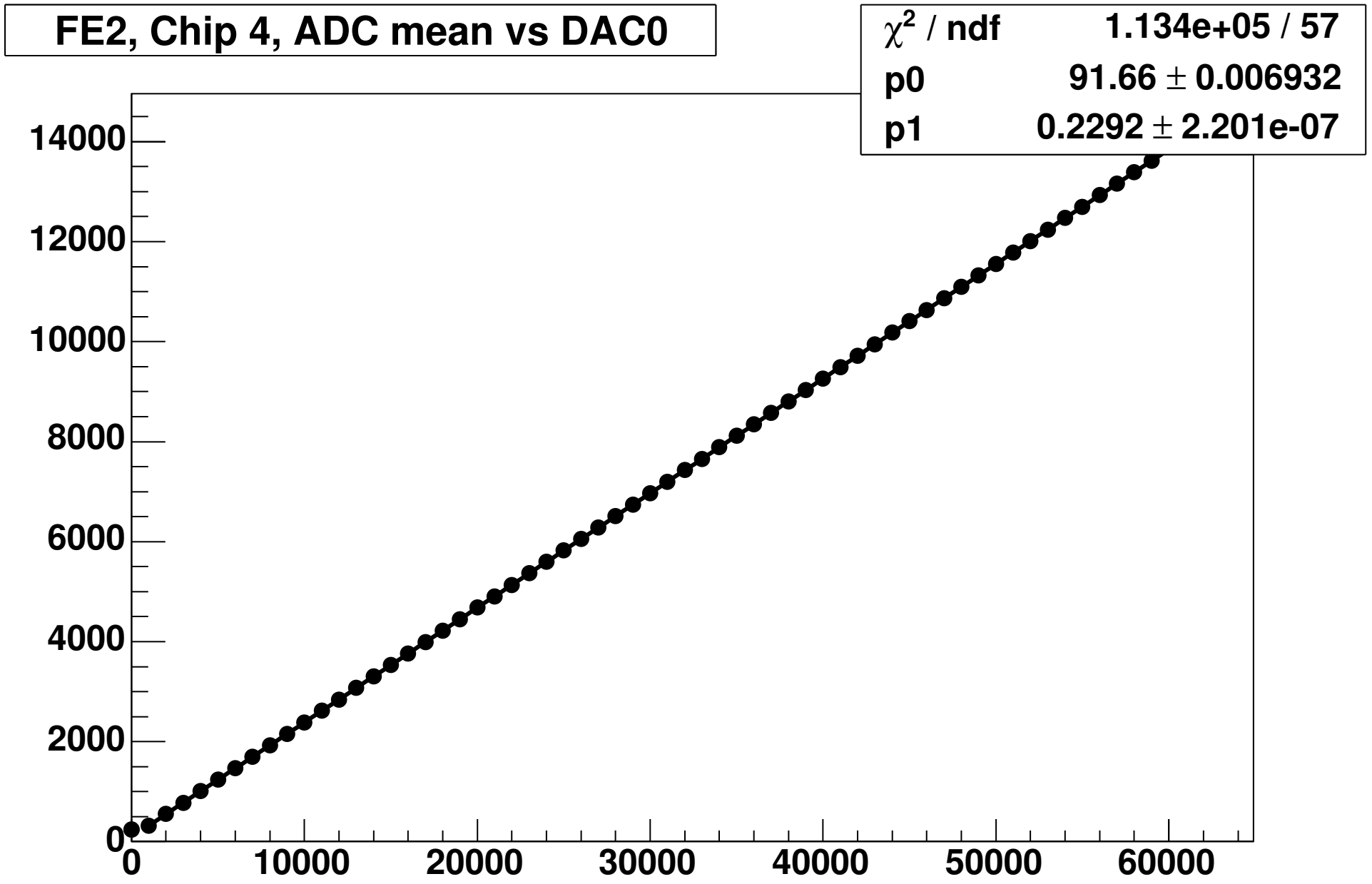

FE2, Chip 3, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

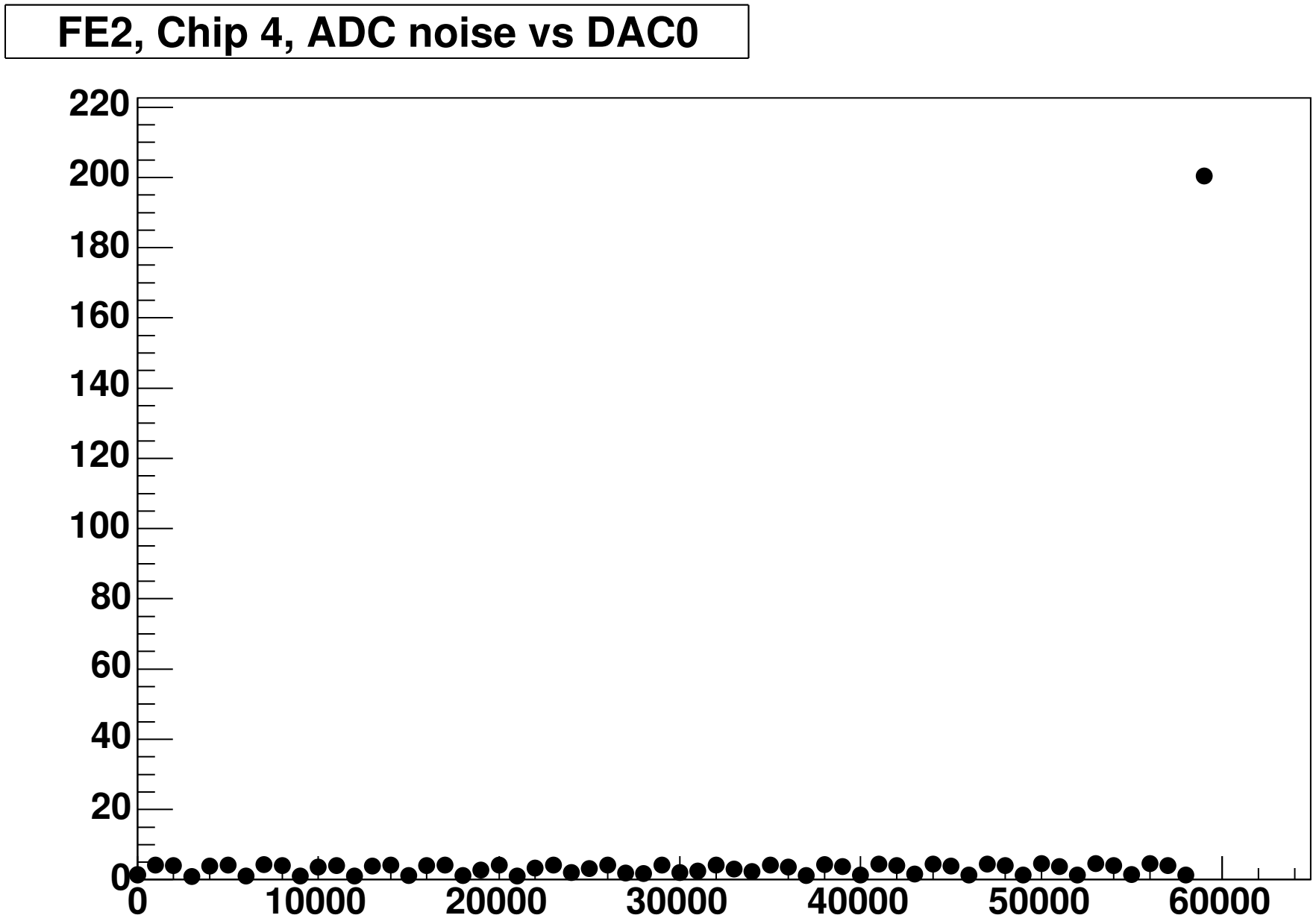

FE2, Chip 3, ADC residuals vs DAC0
2
1
0
-1
-2
-3
-4
-5
0
10000
20000
30000
40000
50000
60000

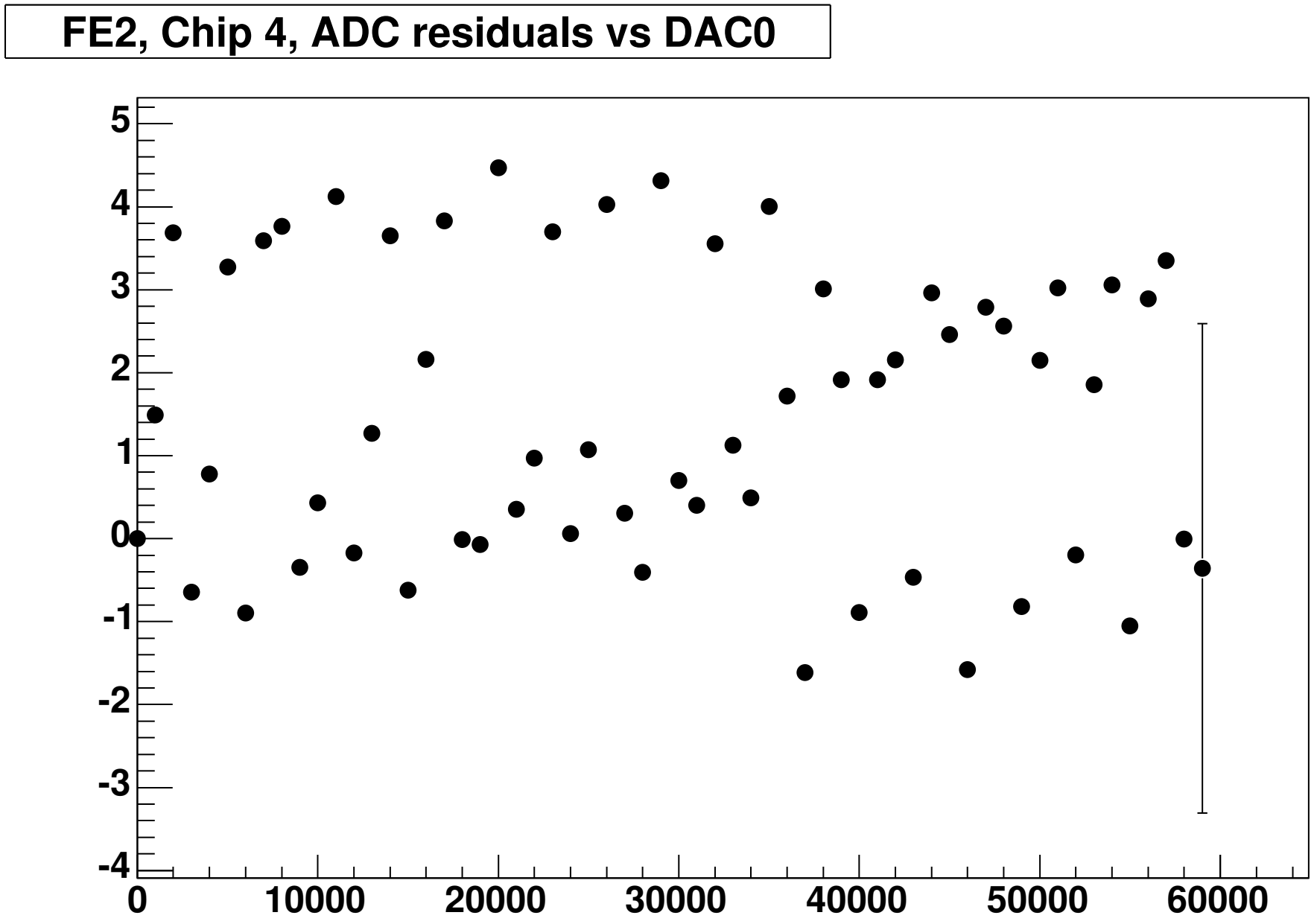

FE2, Chip 3, ADC mean vs DAC1
χ² / ndf 5.309e+04 / 57
p0 253.4 ± 0.003817
p1 -1.538e-07 ± 1.107e-07
254
253.8
253.6
253.4
253.2
253
252.8
252.6
252.4
0
10000
20000
30000
40000
50000
60000

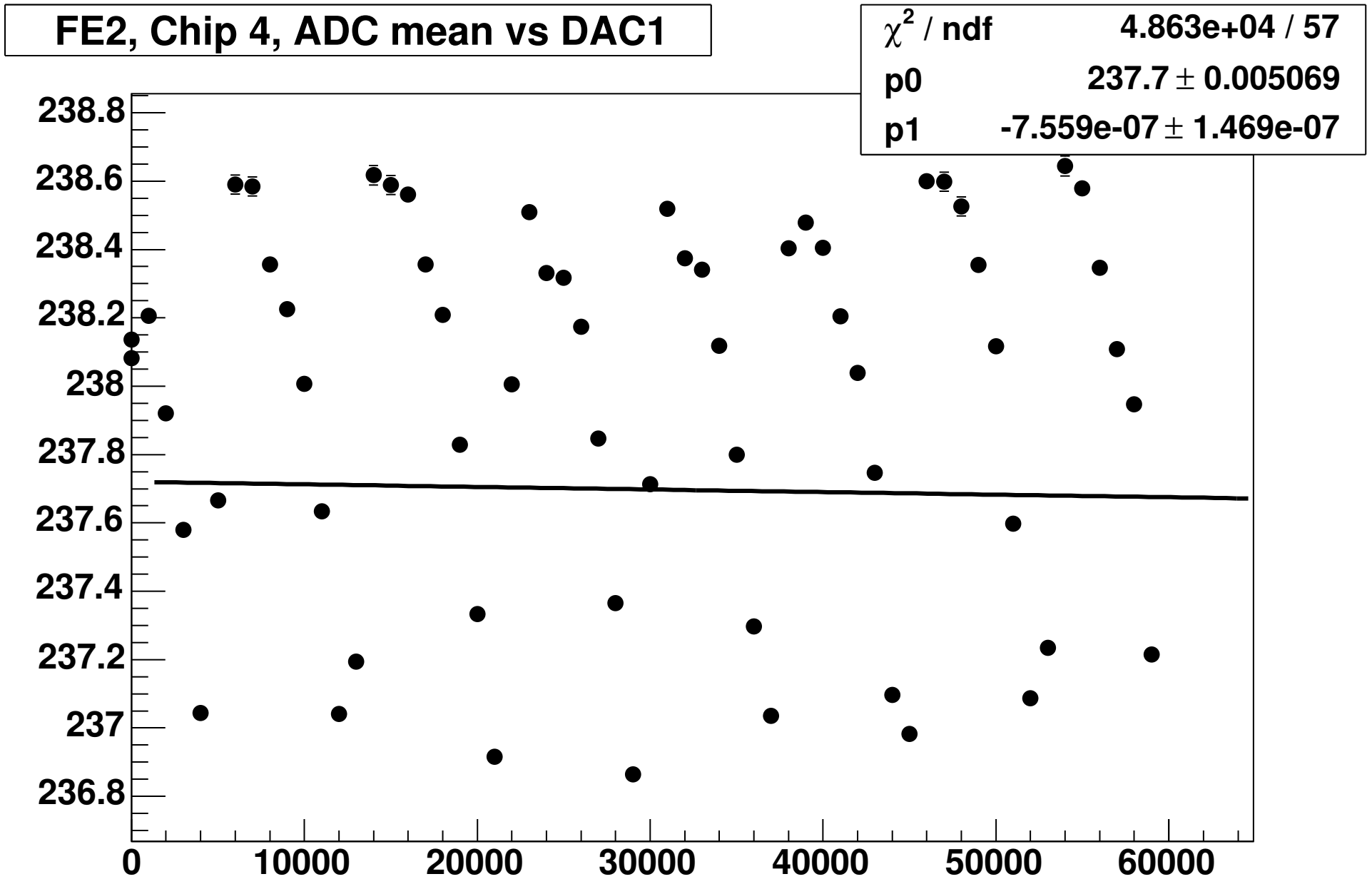

FE2, Chip 3, ADC noise vs DAC1
1.08
1.06
1.04
1.02
1
0.98
0.96
0.94
0.92
0
10000
20000
30000
40000
50000
60000

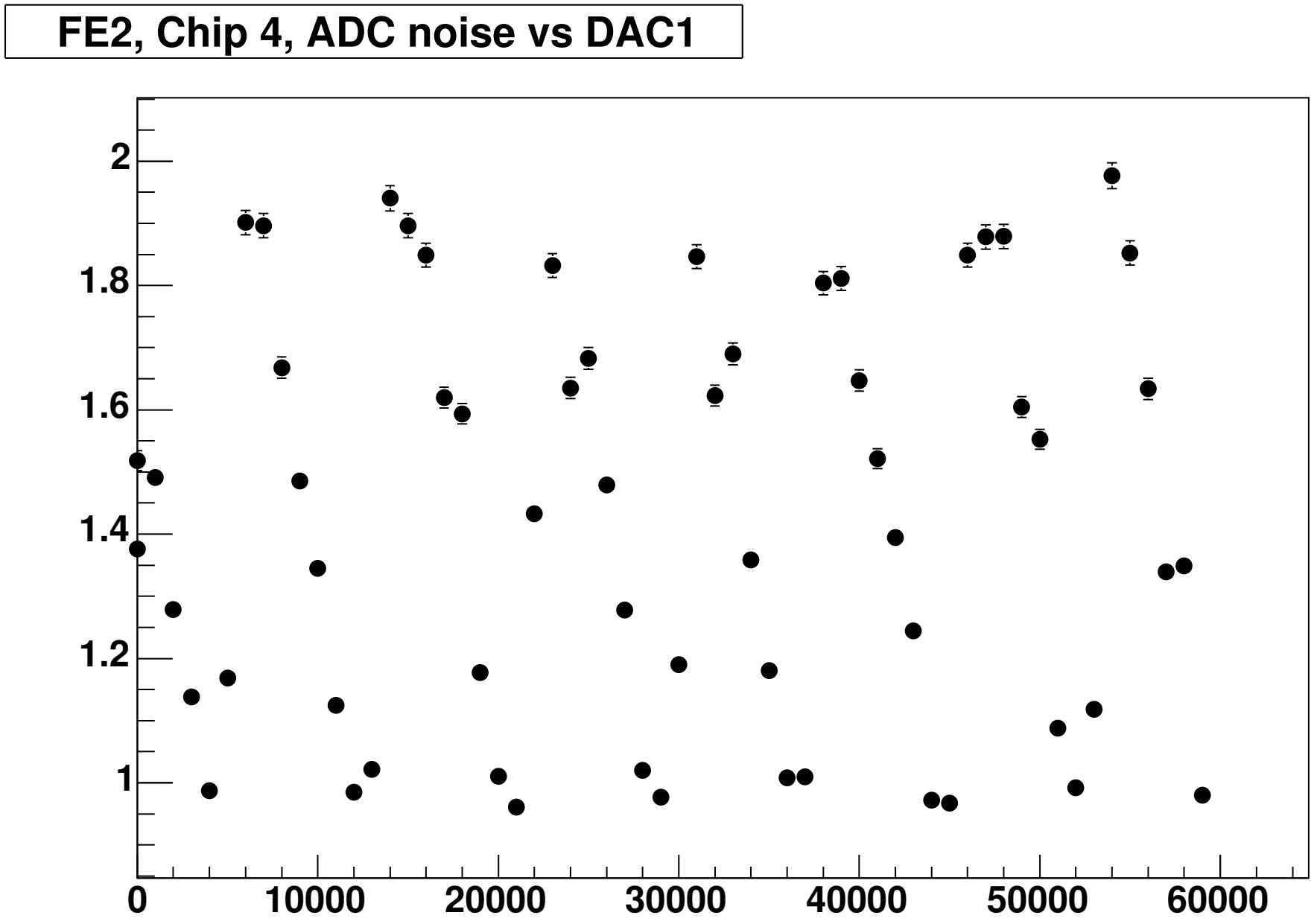

FE2, Chip 3, ADC residuals vs DAC1
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
0
10000
20000
30000
40000
50000
60000

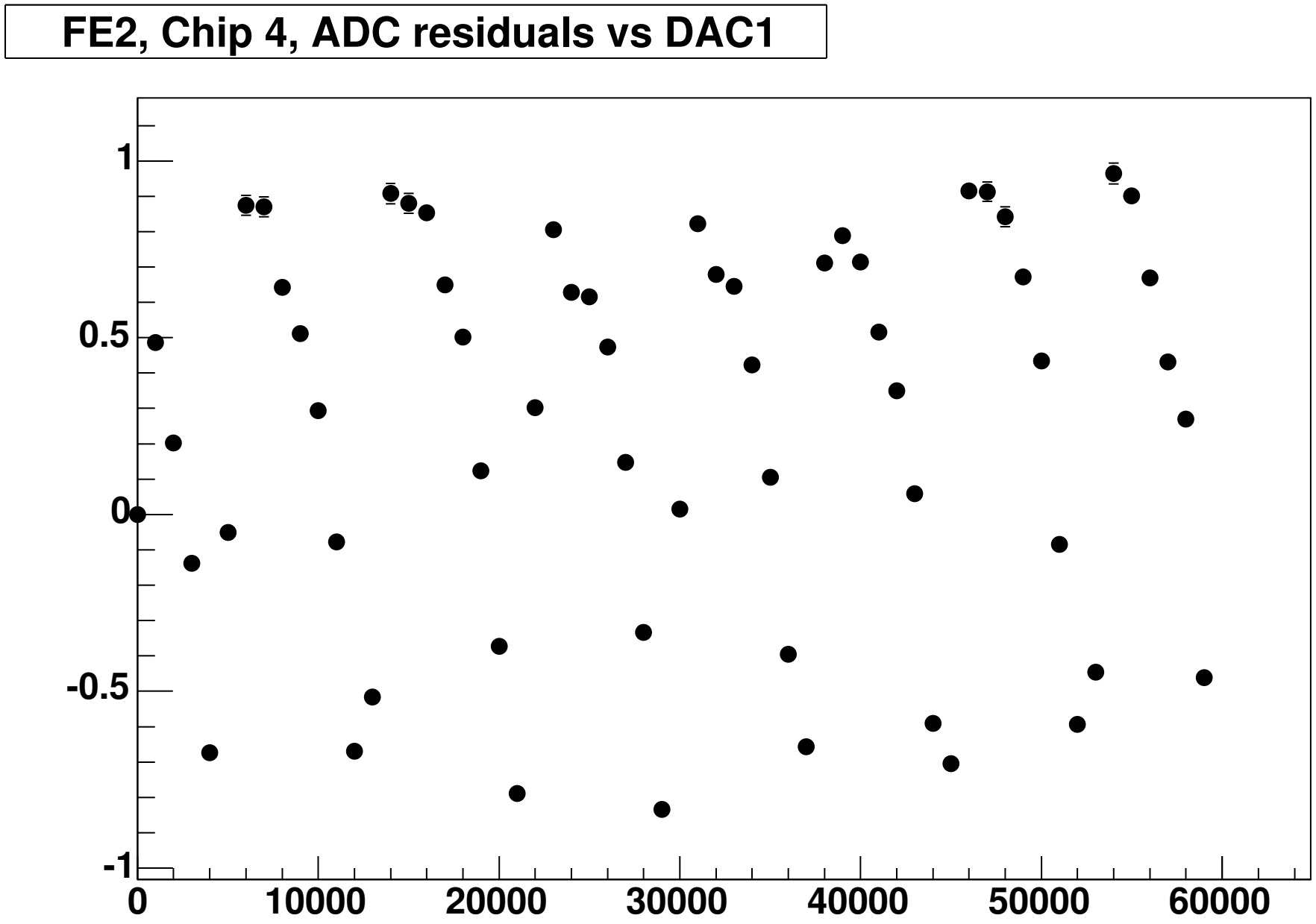

FE2, Chip 4, ADC mean vs DAC0
χ² / ndf 1.134e+05 / 57
p0 91.66 ± 0.006932
p1 0.2292 ± 2.201e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

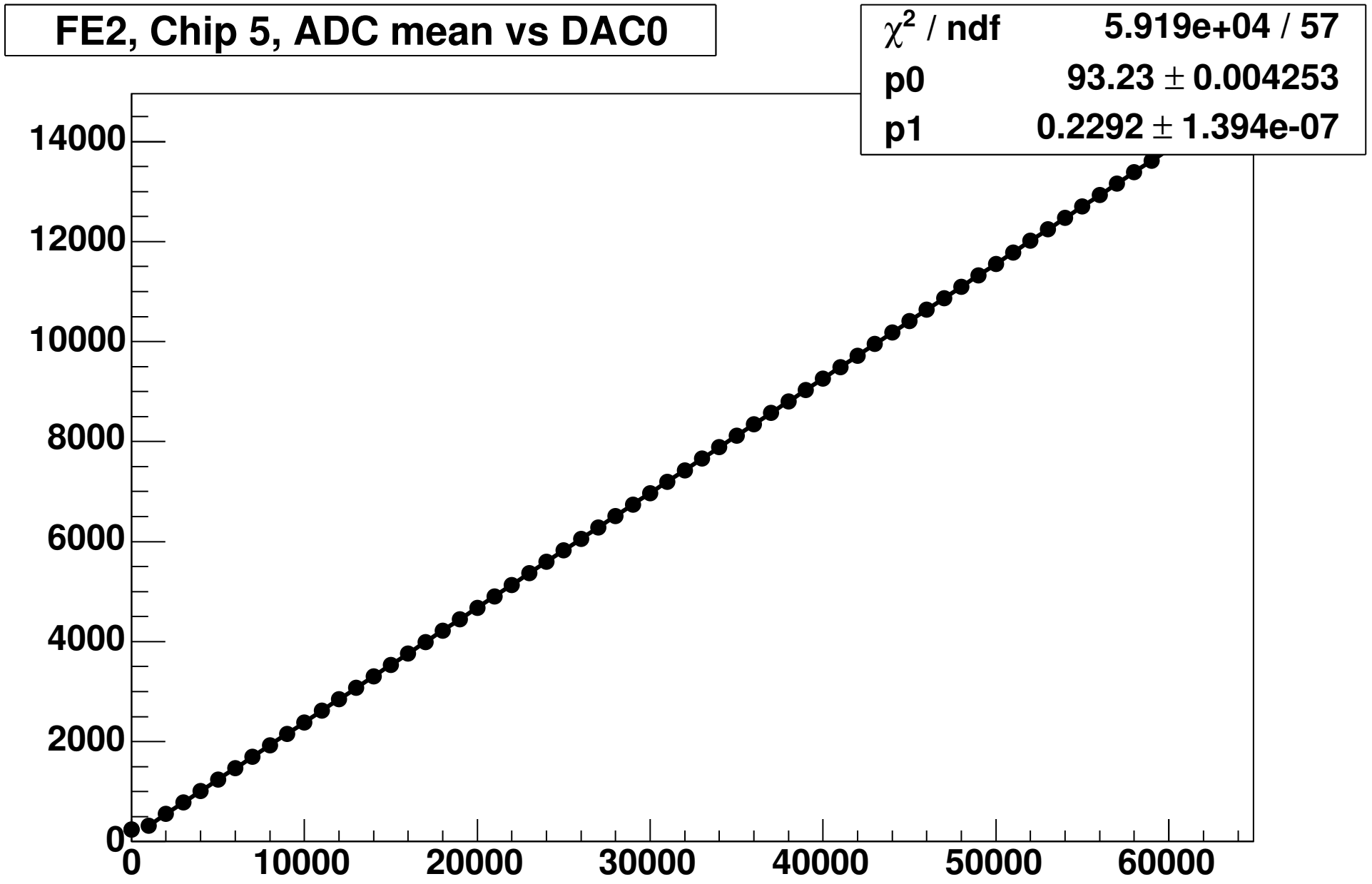

FE2, Chip 4, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

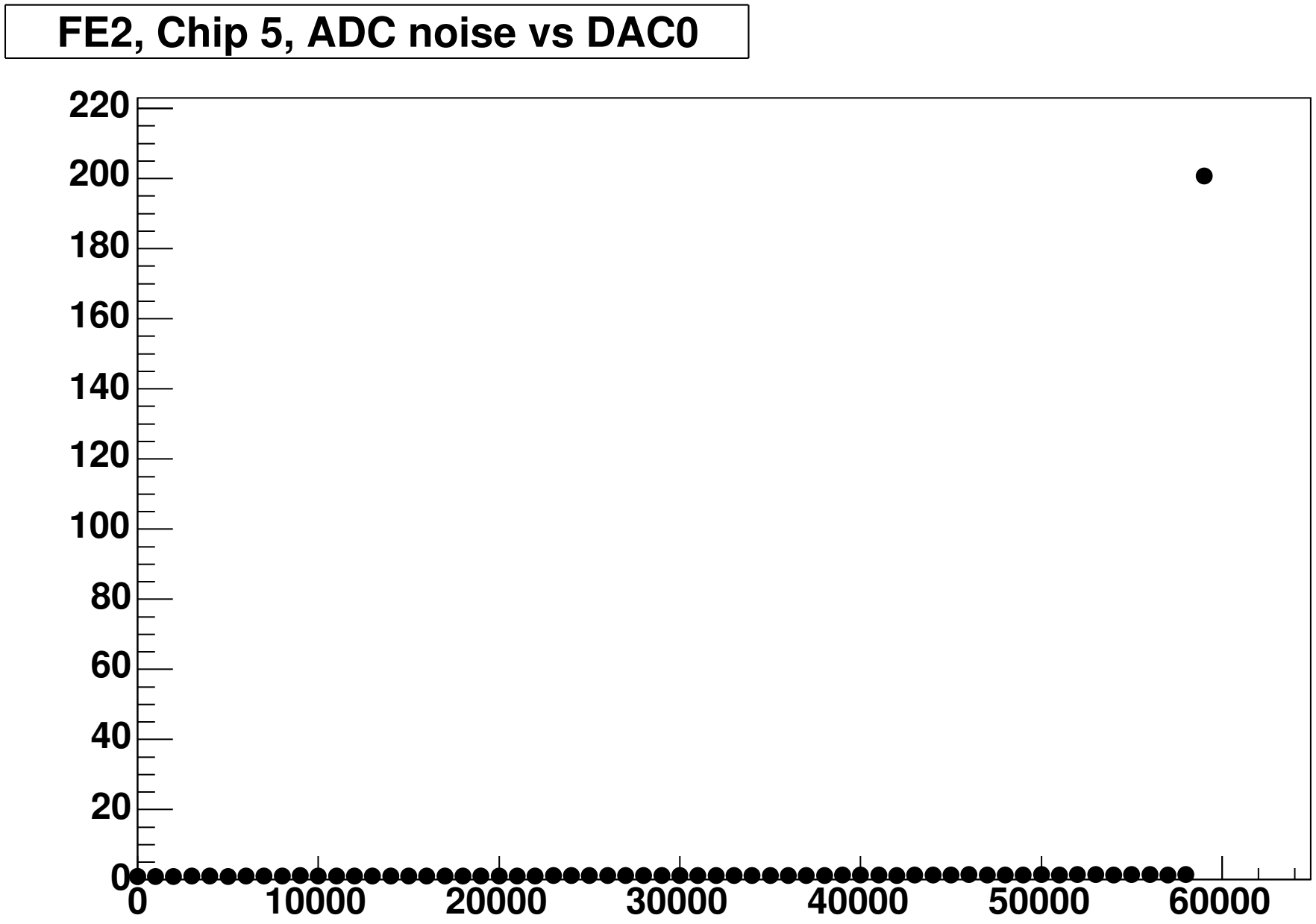

FE2, Chip 4, ADC residuals vs DAC0
5
4
3
2
1
0
-1
-2
-3
-4
0
10000
20000
30000
40000
50000
60000

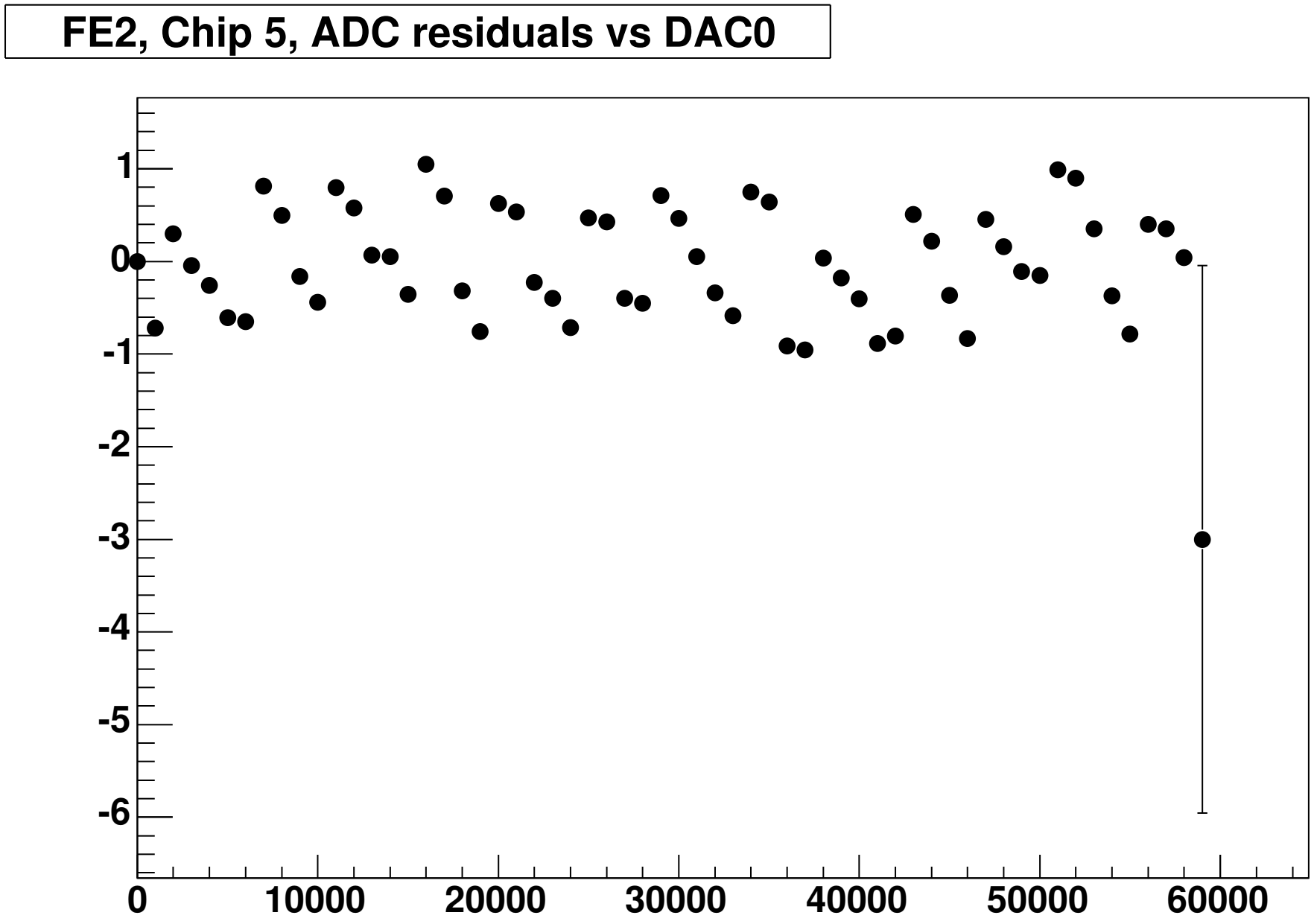

FE2, Chip 4, ADC mean vs DAC1
χ² / ndf 4.863e+04 / 57
p0 237.7 ± 0.005069
p1 -7.559e-07 ± 1.469e-07
238.8
238.6
238.4
238.2
238
237.8
237.6
237.4
237.2
237
236.8
0
10000
20000
30000
40000
50000
60000

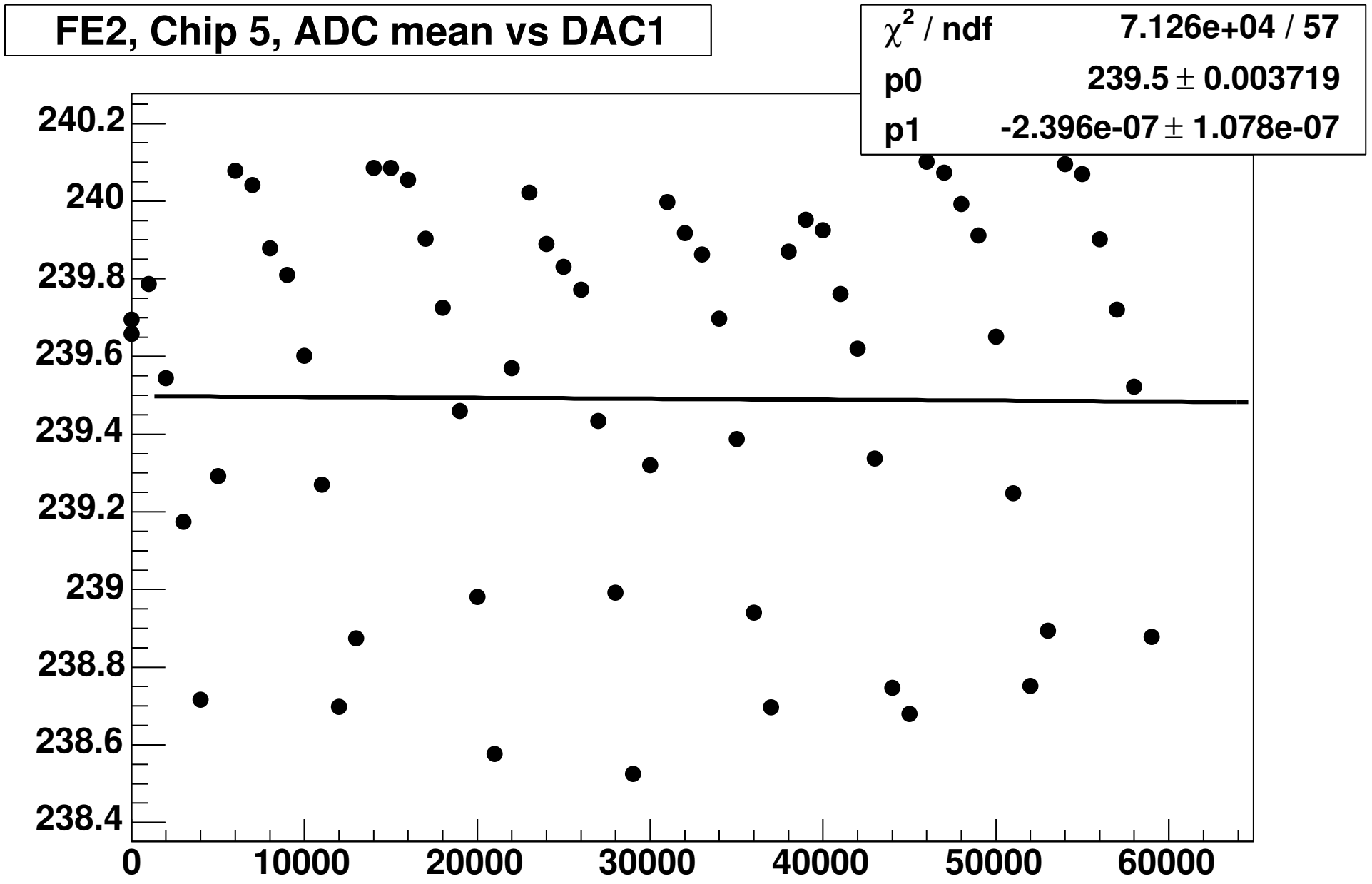

FE2, Chip 4, ADC noise vs DAC1
2
1.8
1.6
1.4
1.2
1
0
10000
20000
30000
40000
50000
60000

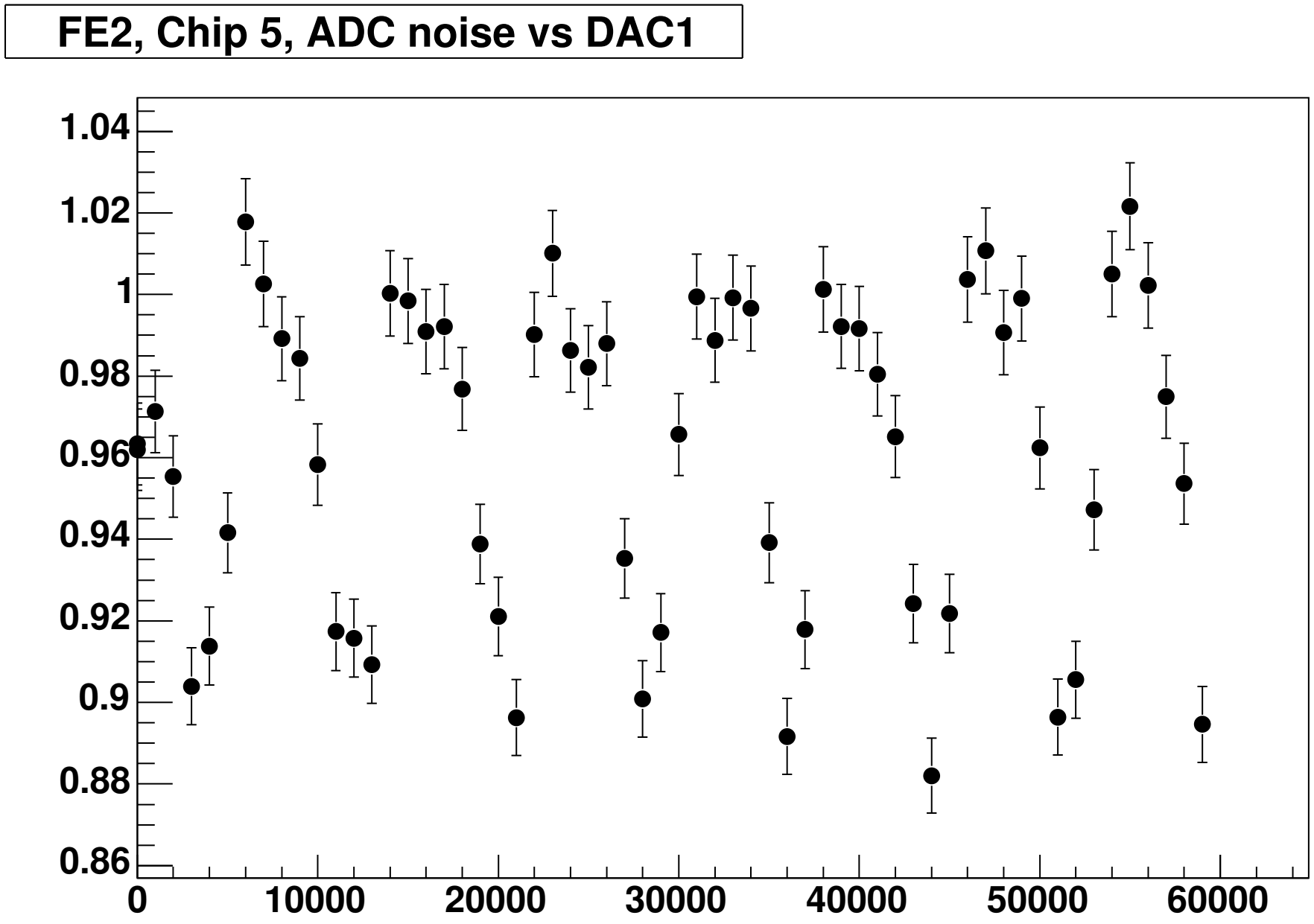

FE2, Chip 4, ADC residuals vs DAC1
1
0.5
0
-0.5
-1
0
10000
20000
30000
40000
50000
60000

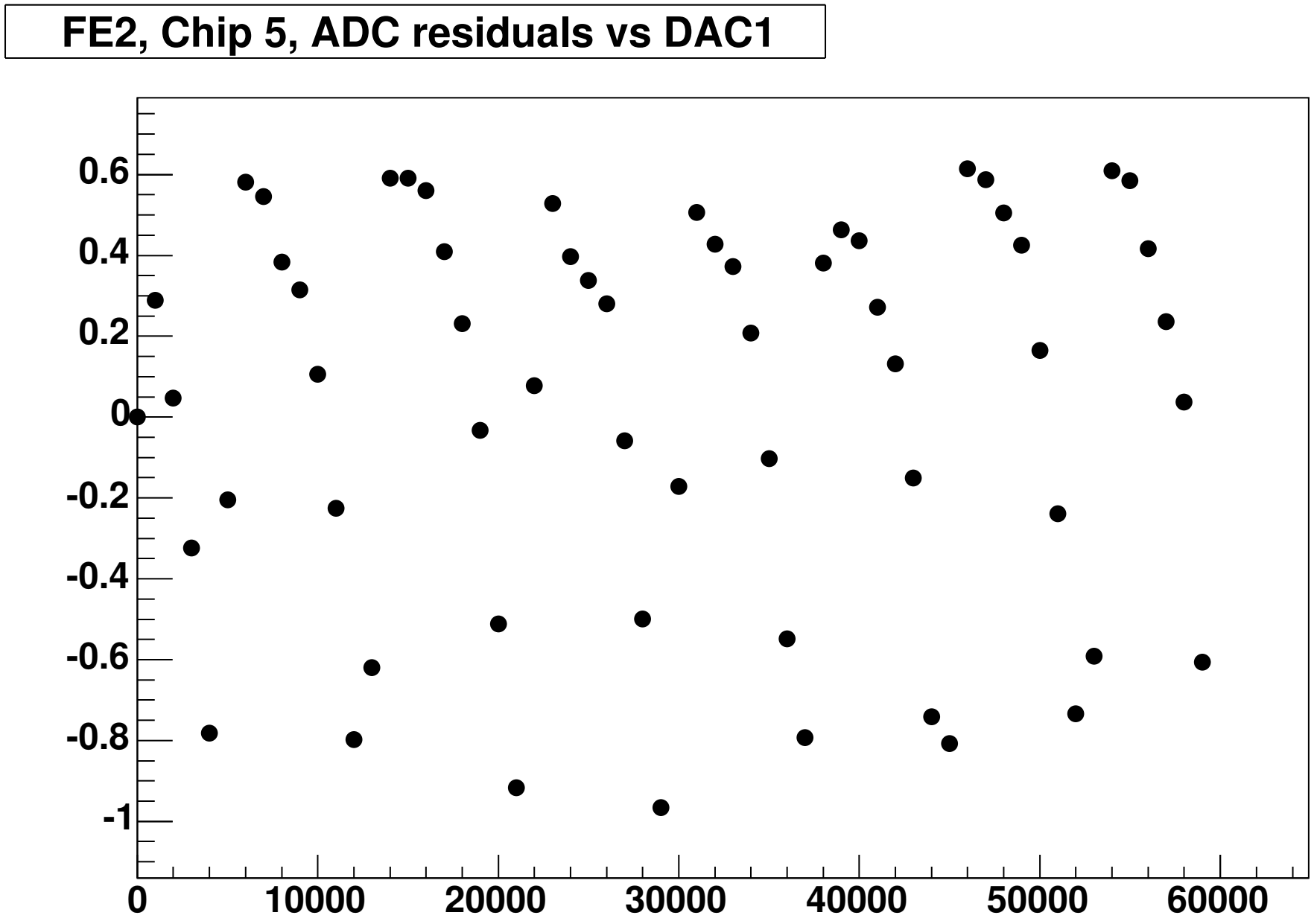

FE2, Chip 5, ADC mean vs DAC0
χ² / ndf 5.919e+04 / 57
p0 93.23 ± 0.004253
p1 0.2292 ± 1.394e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

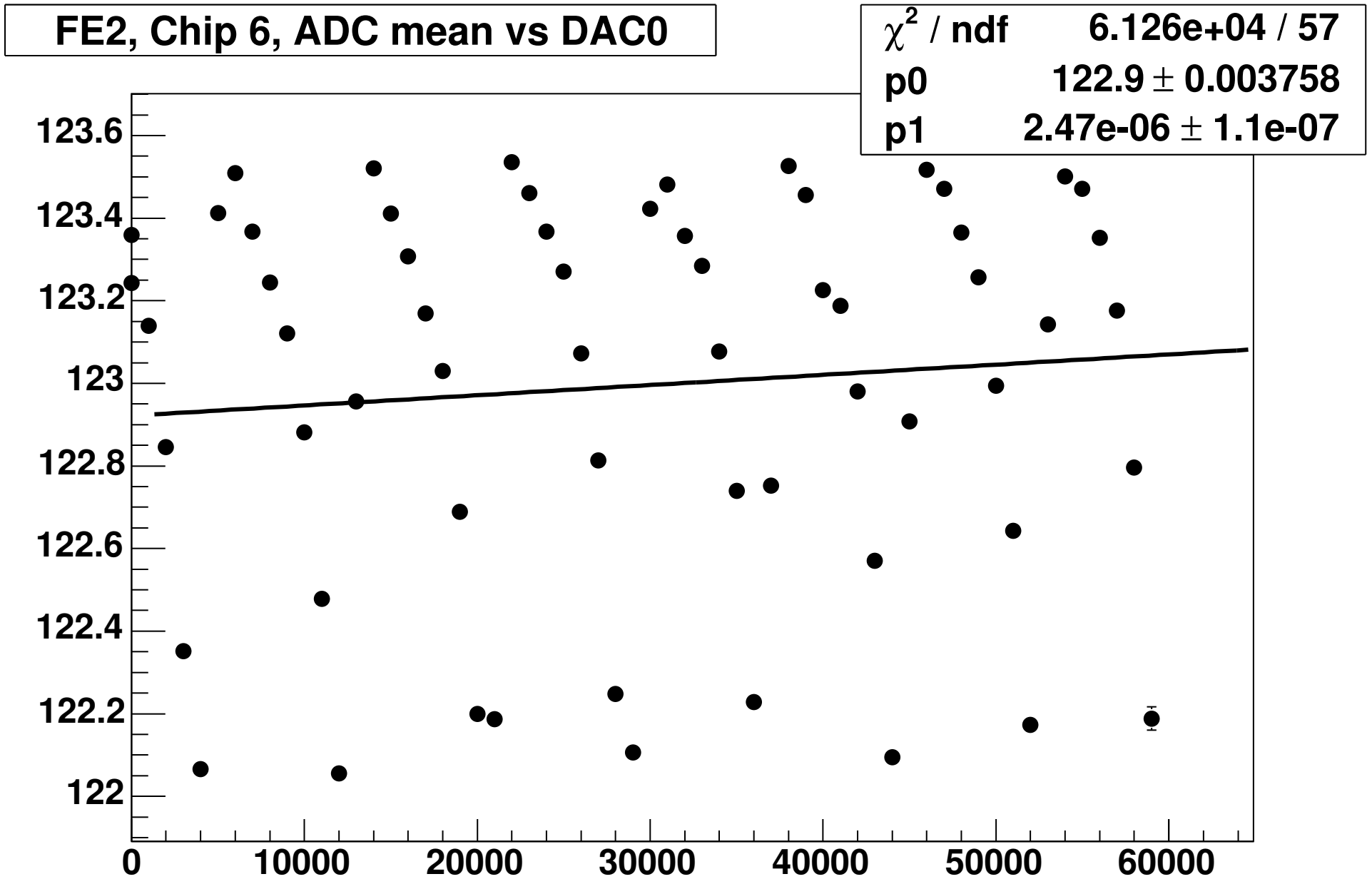

FE2, Chip 5, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

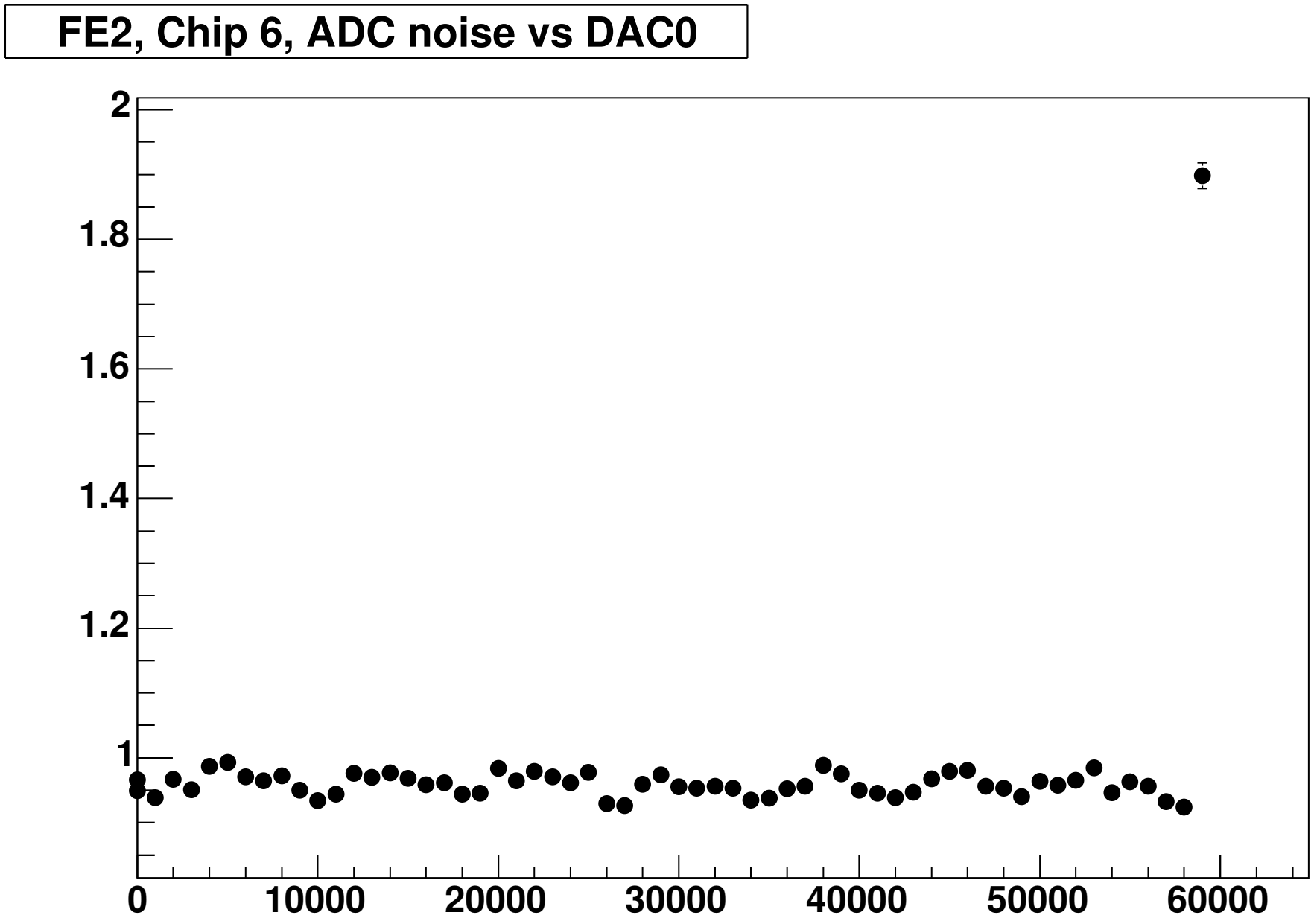

FE2, Chip 5, ADC residuals vs DAC0
1
0
-1
-2
-3
-4
-5
-6
0
10000
20000
30000
40000
50000
60000

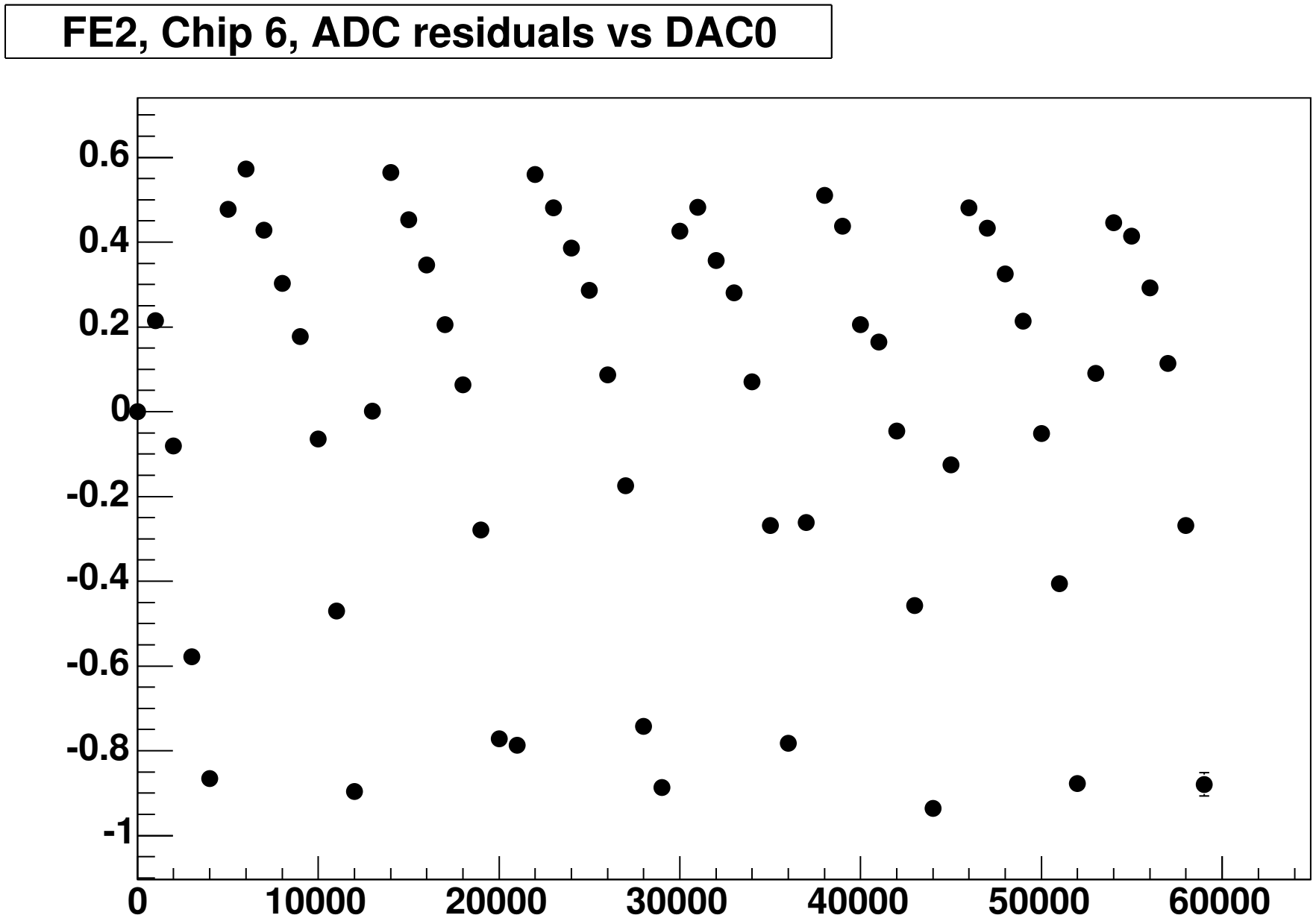

FE2, Chip 5, ADC mean vs DAC1
χ² / ndf 7.126e+04 / 57
p0 239.5 ± 0.003719
p1 -2.396e-07 ± 1.078e-07
240.2
240
239.8
239.6
239.4
239.2
239
238.8
238.6
238.4
0
10000
20000
30000
40000
50000
60000

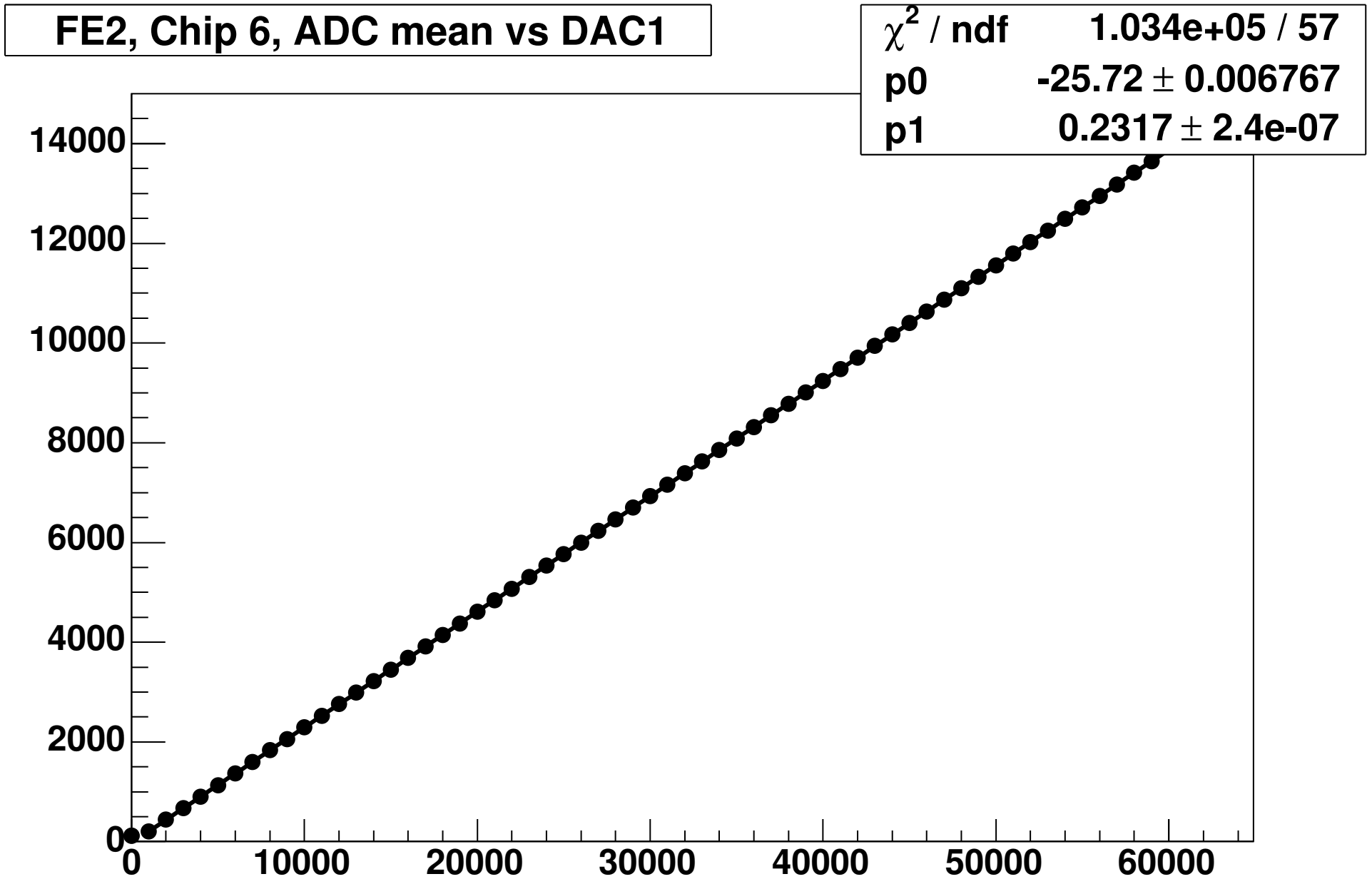

FE2, Chip 5, ADC noise vs DAC1
1.04
1.02
1
0.98
0.96
0.94
0.92
0.9
0.88
0.86
0
10000
20000
30000
40000
50000
60000

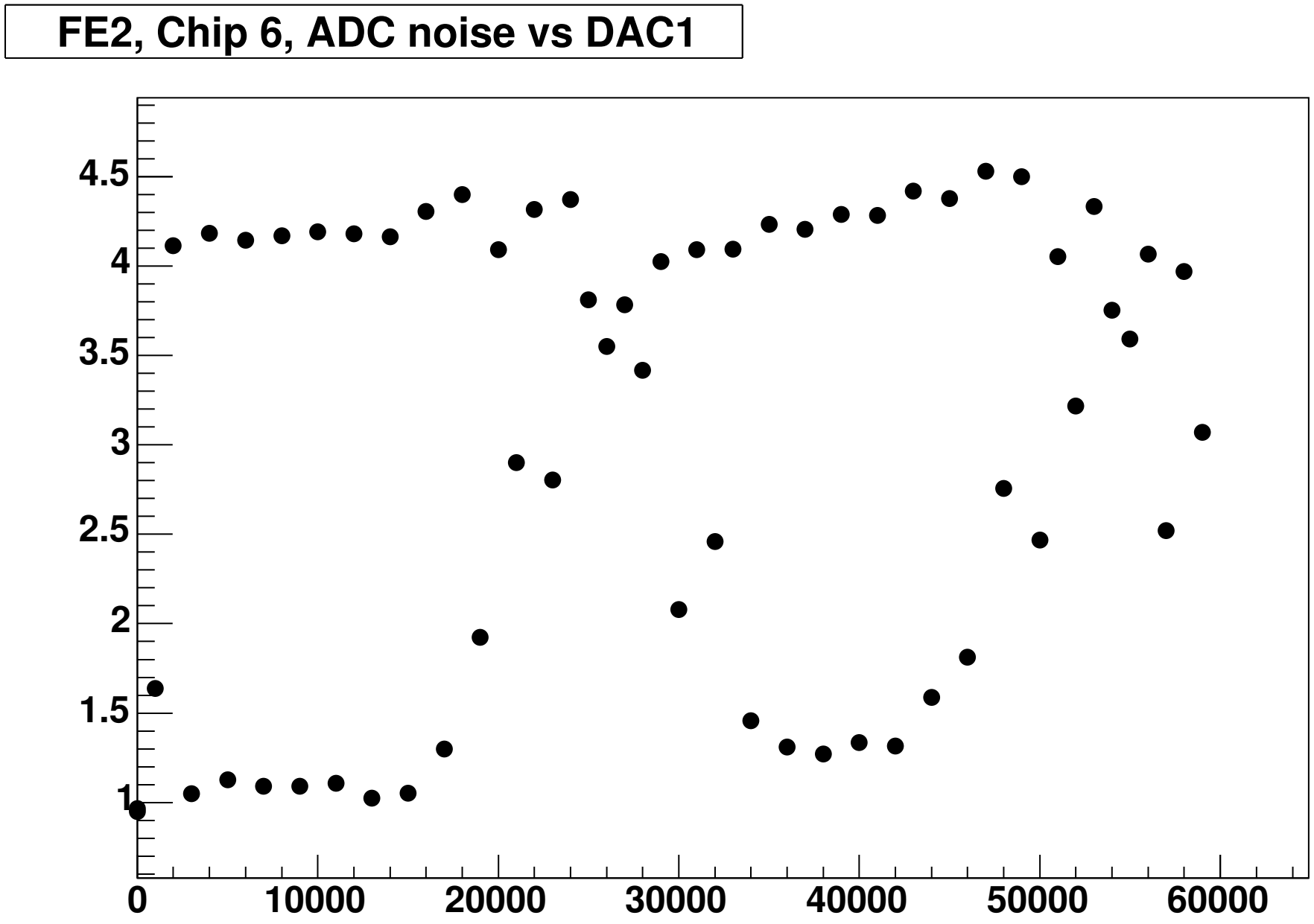

FE2, Chip 5, ADC residuals vs DAC1
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
0
10000
20000
30000
40000
50000
60000

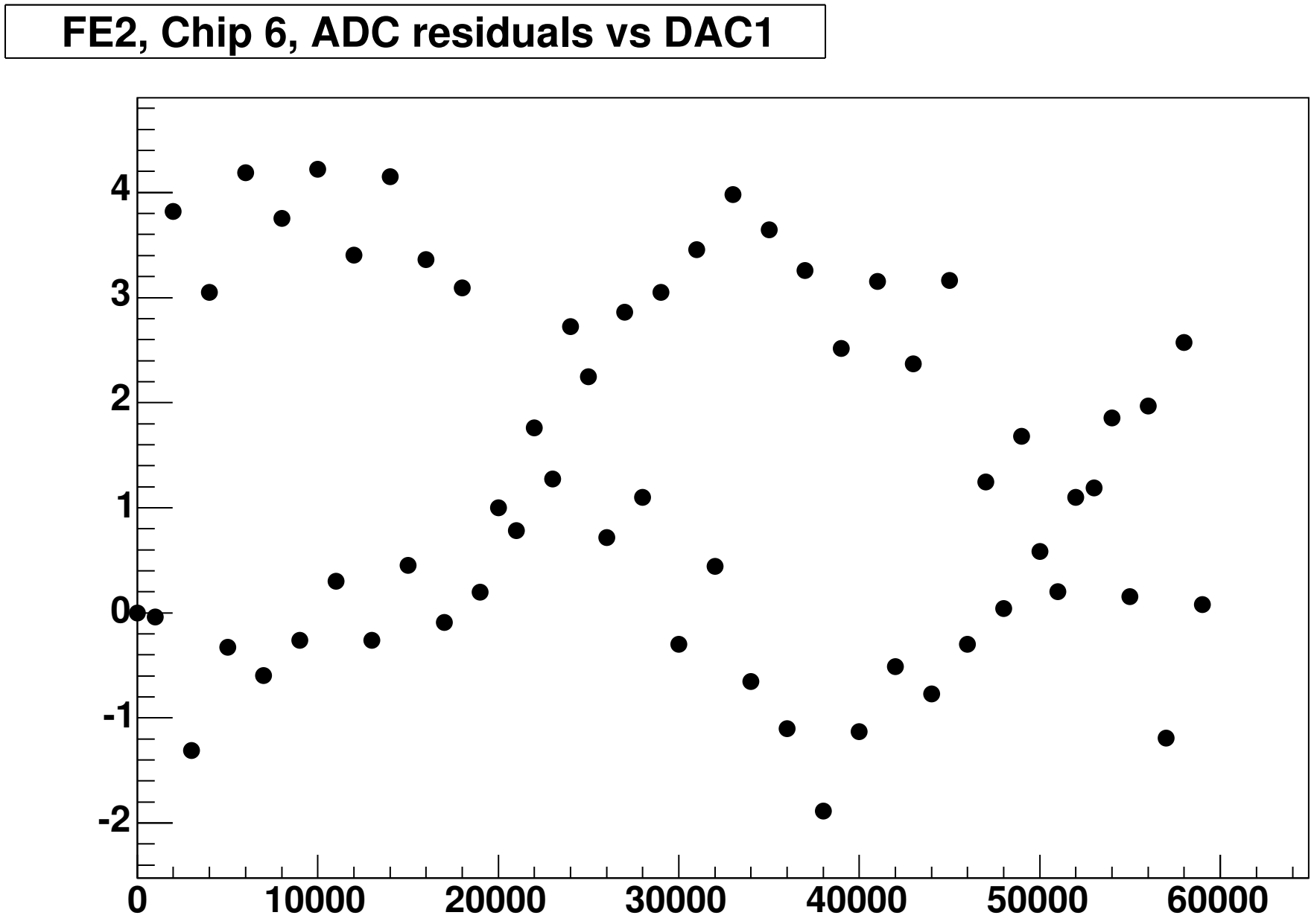

FE2, Chip 6, ADC mean vs DAC0
χ² / ndf 6.126e+04 / 57
p0 122.9 ± 0.003758
p1 2.47e-06 ± 1.1e-07
123.6
123.4
123.2
123
122.8
122.6
122.4
122.2
122
0
10000
20000
30000
40000
50000
60000

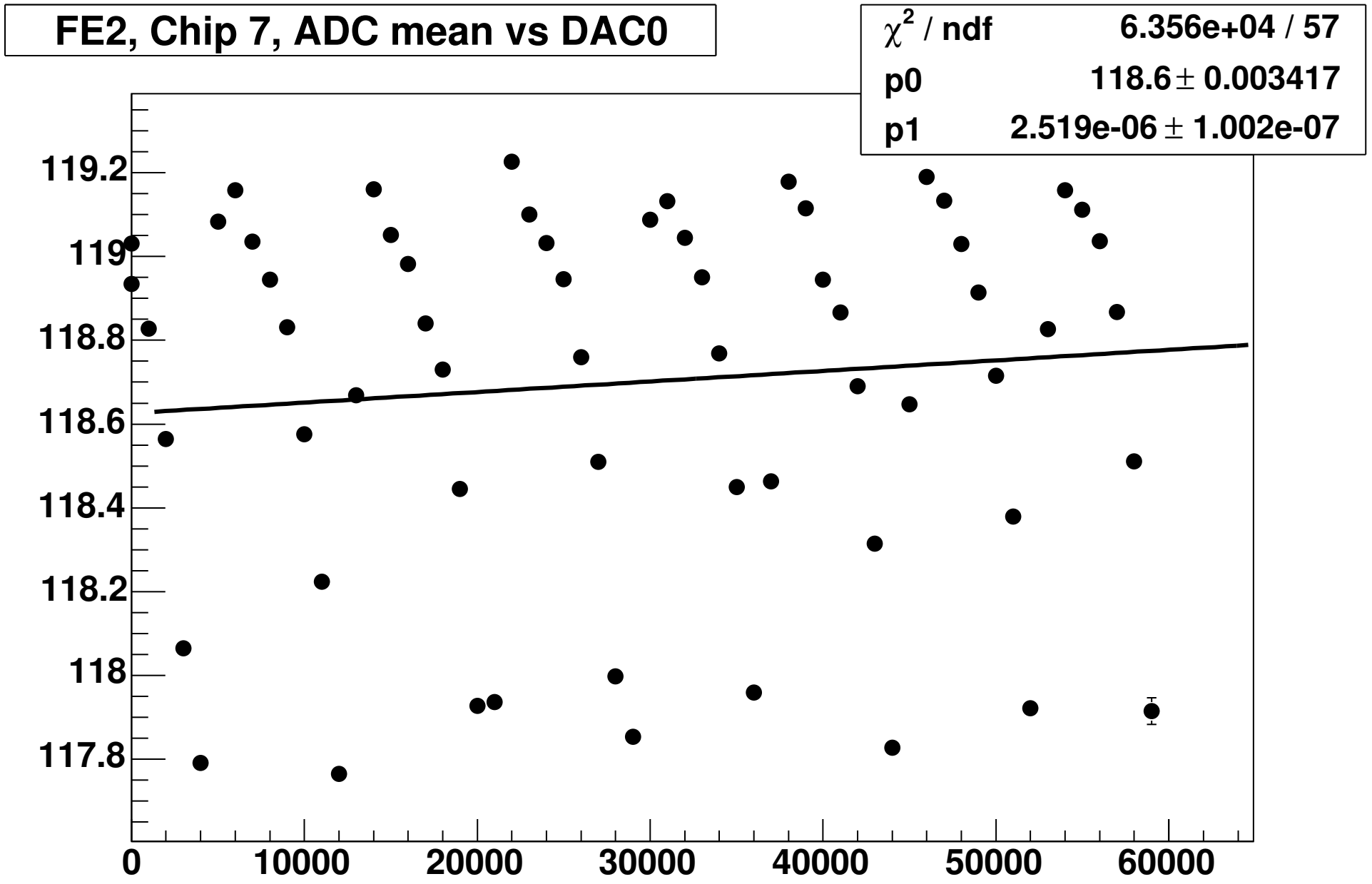

FE2, Chip 6, ADC noise vs DAC0
2
1.8
1.6
1.4
1.2
1
0
10000
20000
30000
40000
50000
60000

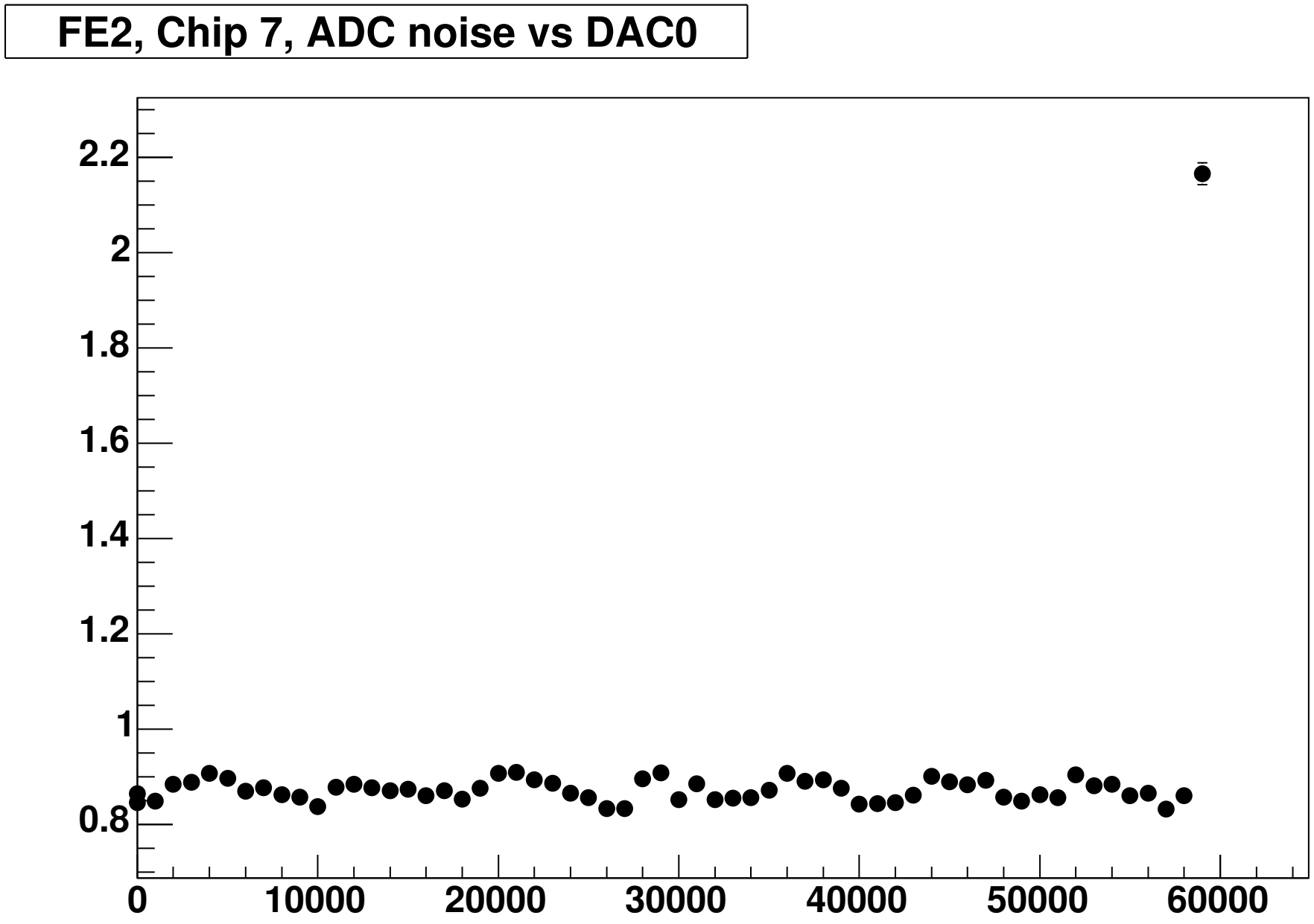

FE2, Chip 6, ADC residuals vs DAC0
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
0
10000
20000
30000
40000
50000
60000

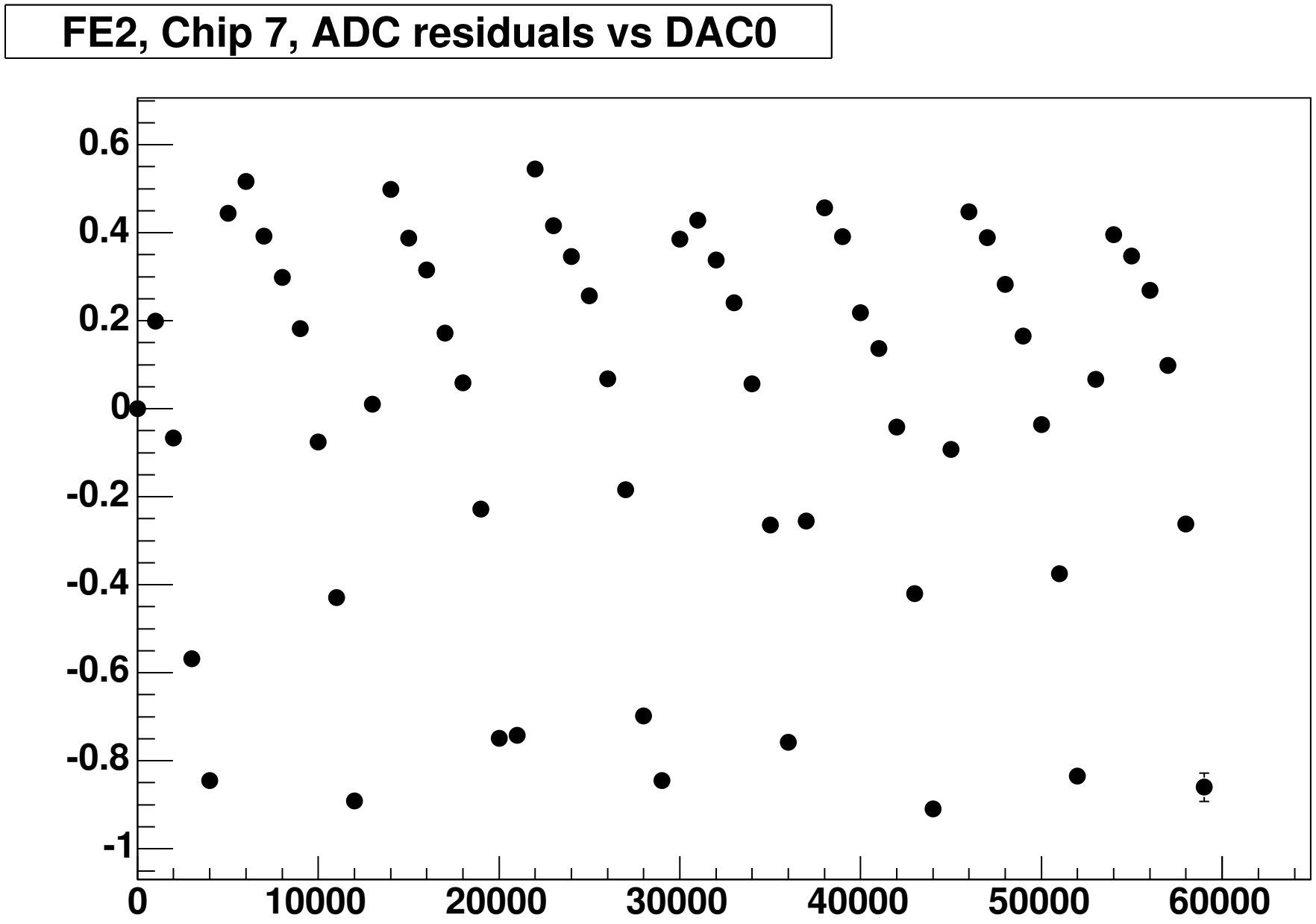

FE2, Chip 6, ADC mean vs DAC1
χ² / ndf 1.034e+05 / 57
p0 -25.72 ± 0.006767
p1 0.2317 ± 2.4e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

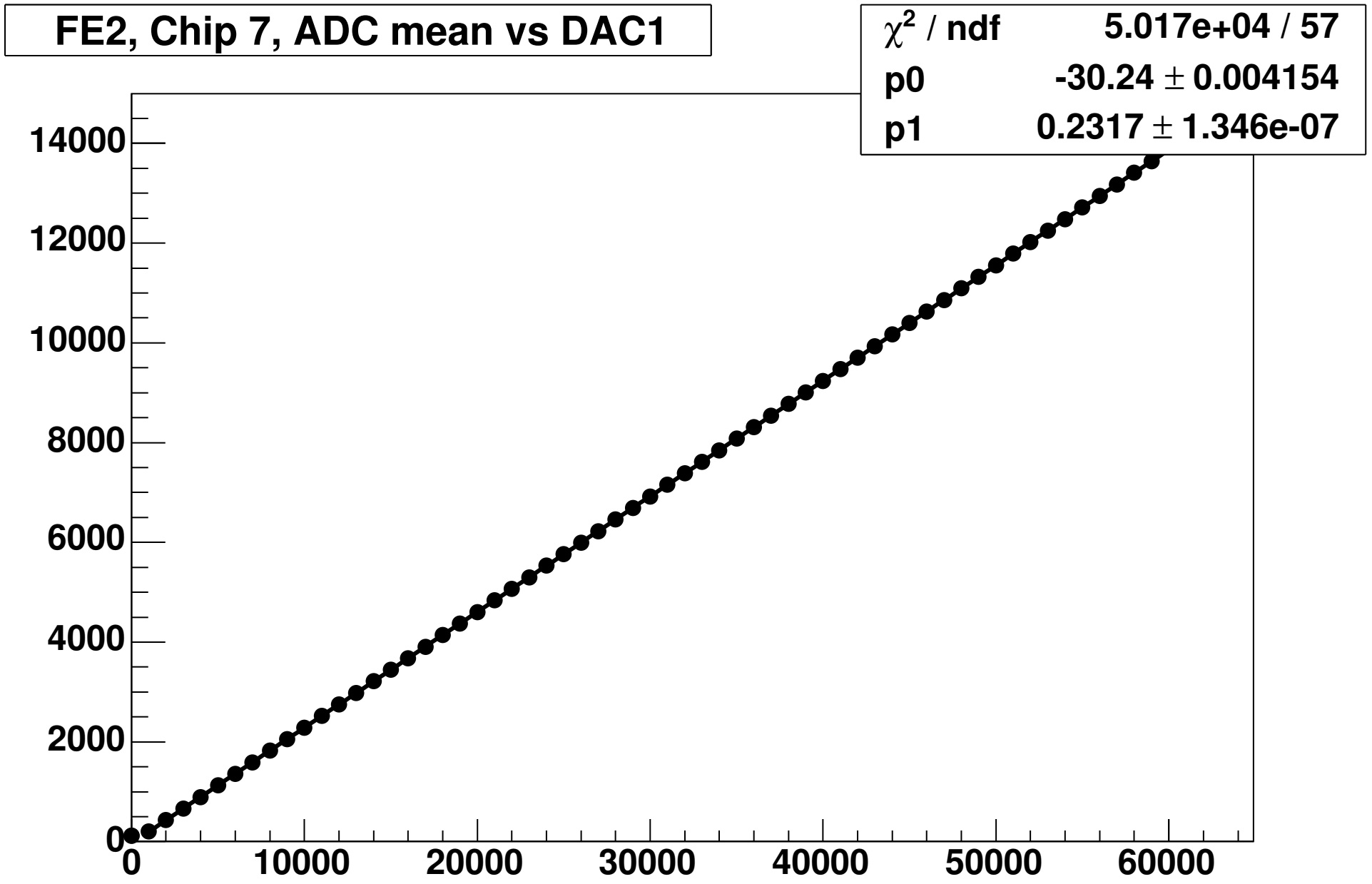

FE2, Chip 6, ADC noise vs DAC1
4.5
4
3.5
3
2.5
2
1.5
1
0
10000
20000
30000
40000
50000
60000

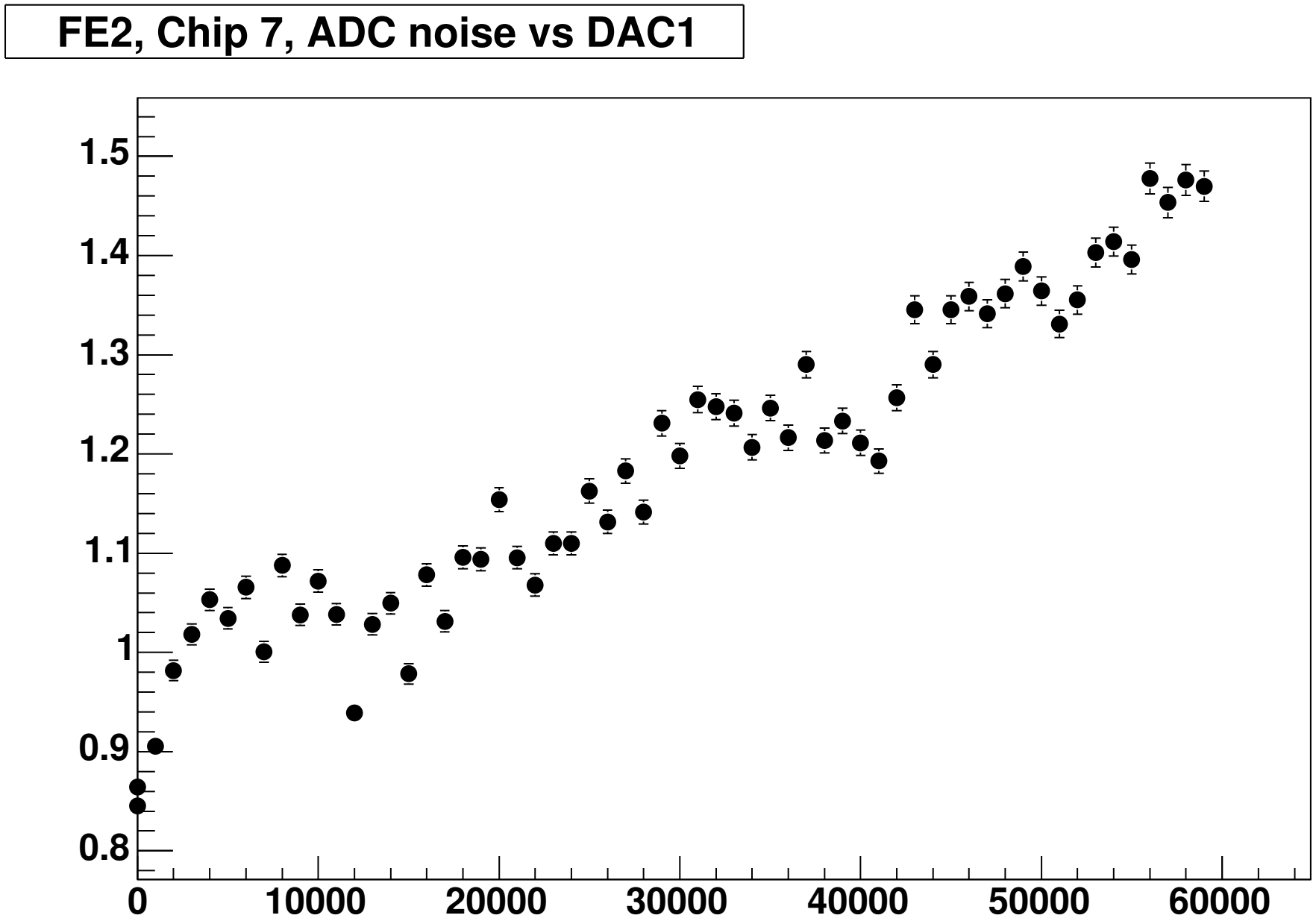

FE2, Chip 6, ADC residuals vs DAC1
4
3
2
1
0
-1
-2
0
10000
20000
30000
40000
50000
60000

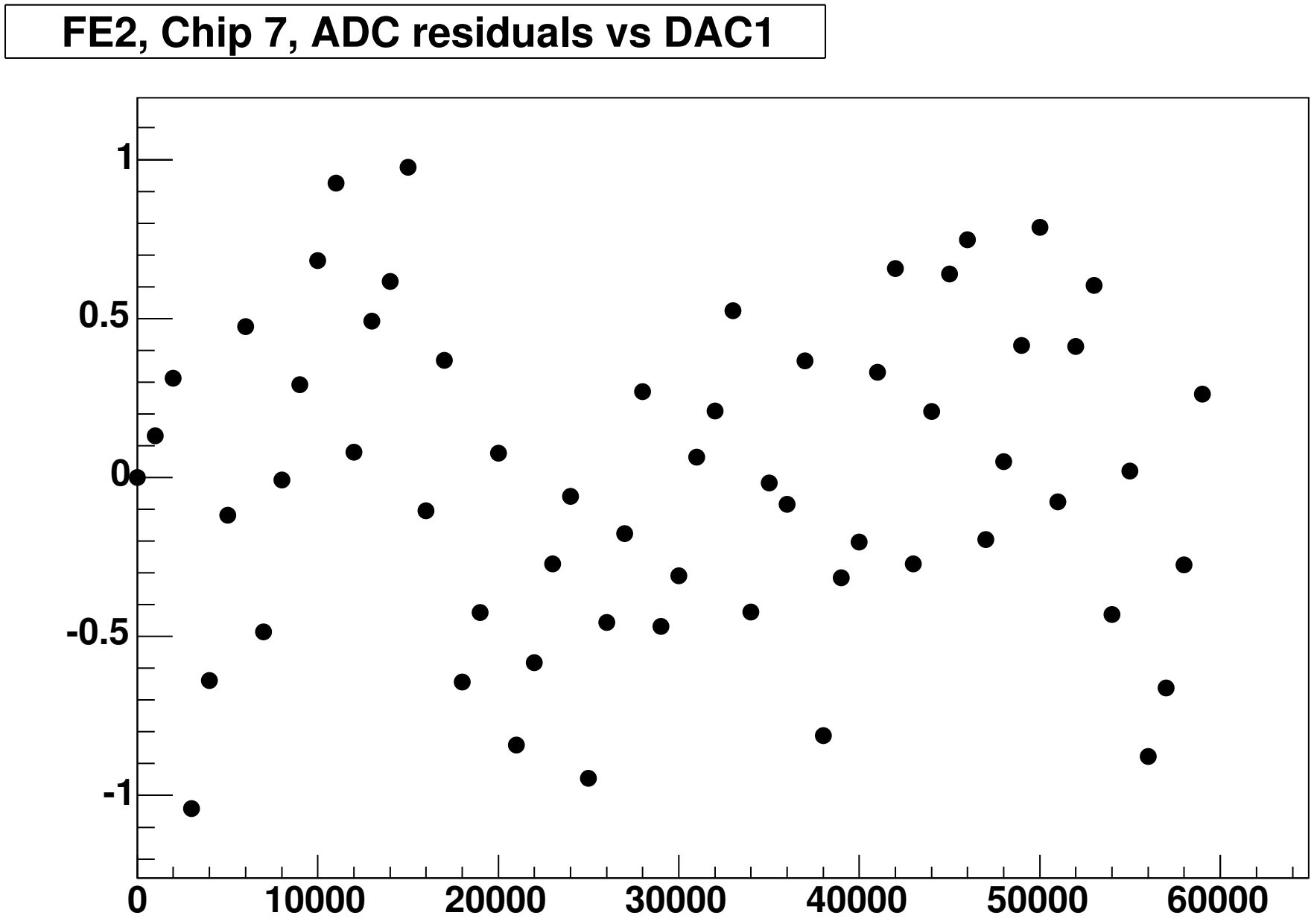

FE2, Chip 7, ADC mean vs DAC0
χ² / ndf 6.356e+04 / 57
p0 118.6 ± 0.003417
p1 2.519e-06 ± 1.002e-07
119.2
119
118.8
118.6
118.4
118.2
118
117.8
0
10000
20000
30000
40000
50000
60000

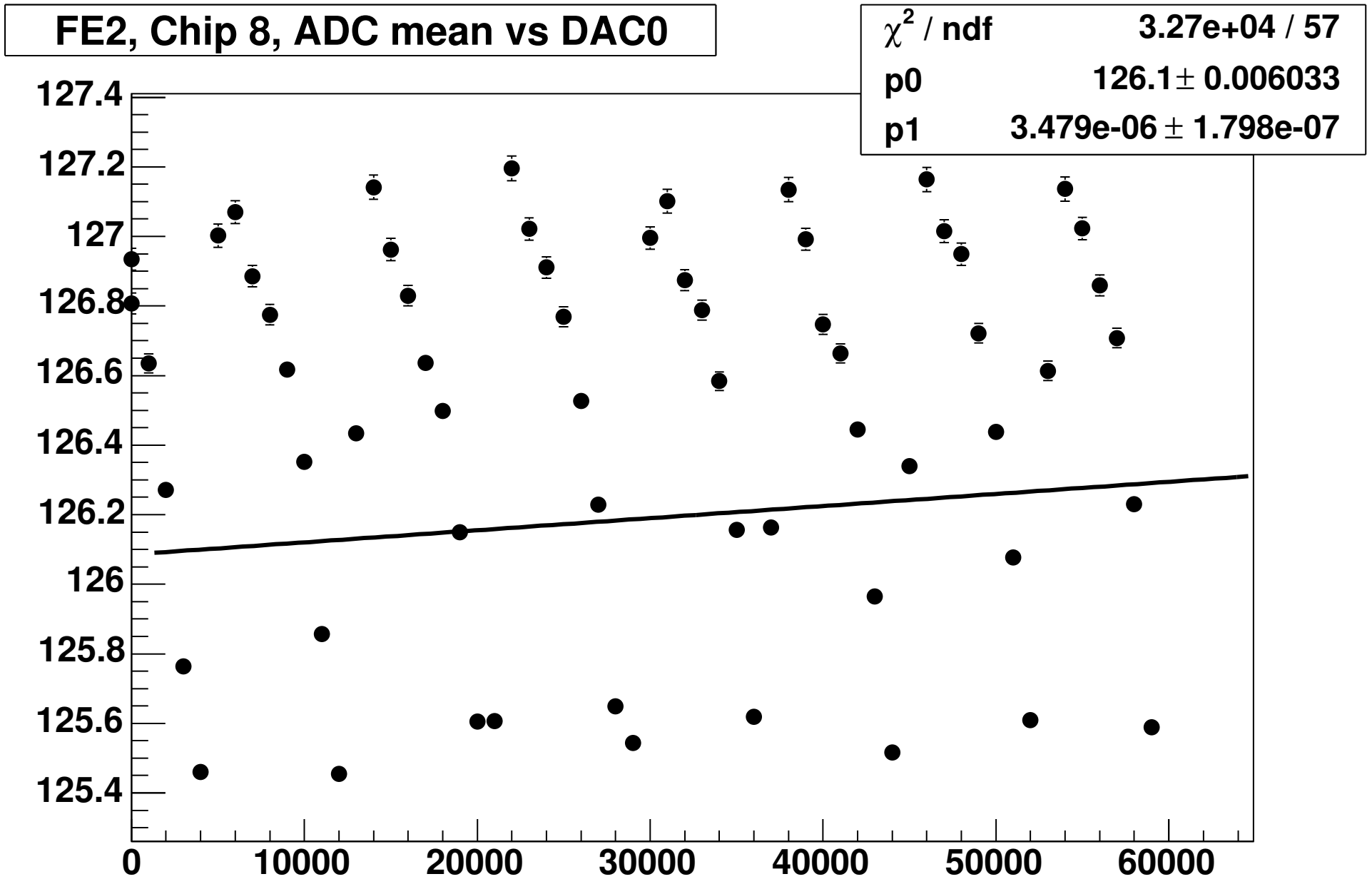

FE2, Chip 7, ADC noise vs DAC0
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0
10000
20000
30000
40000
50000
60000

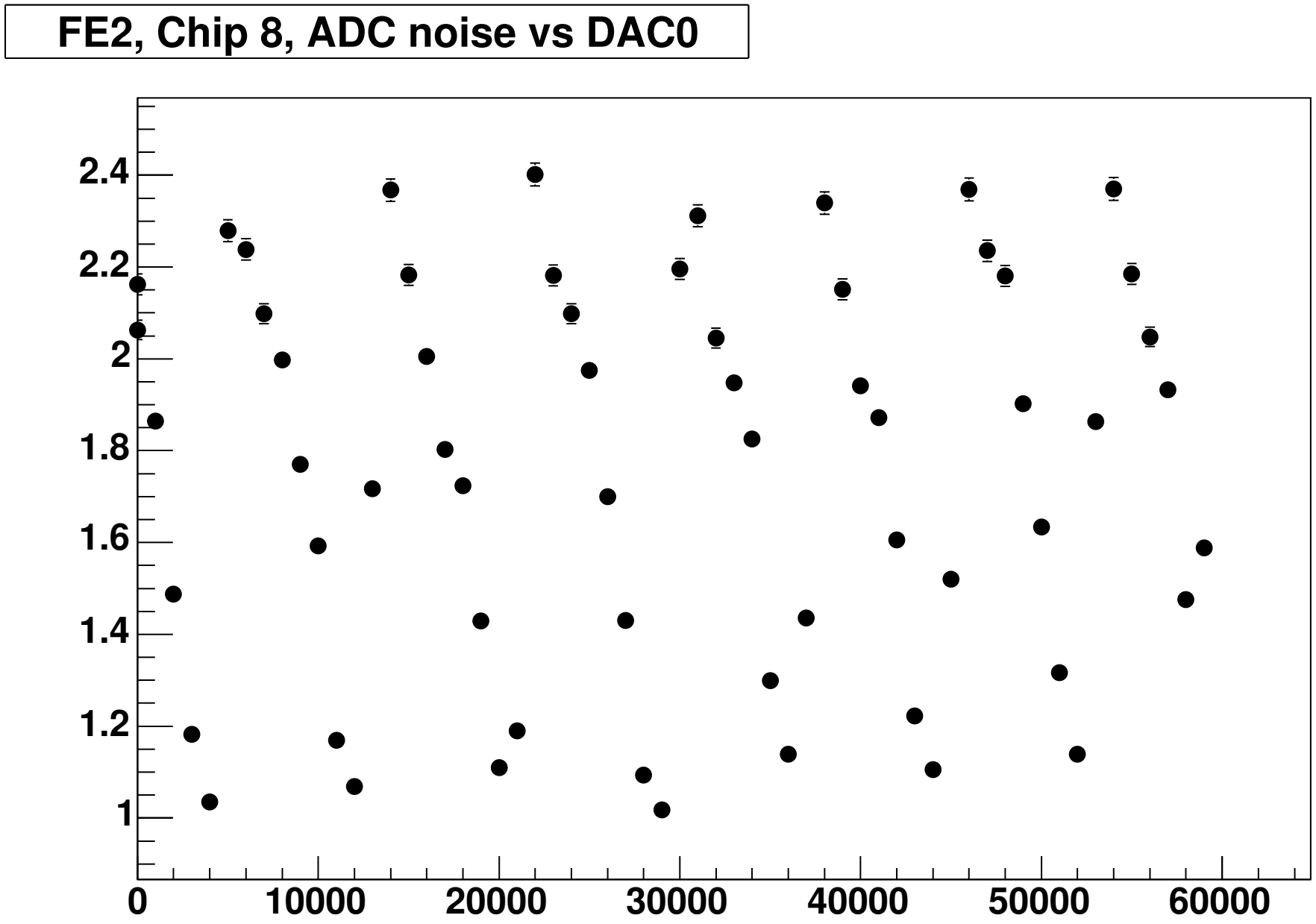

FE2, Chip 7, ADC residuals vs DAC0
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
0
10000
20000
30000
40000
50000
60000

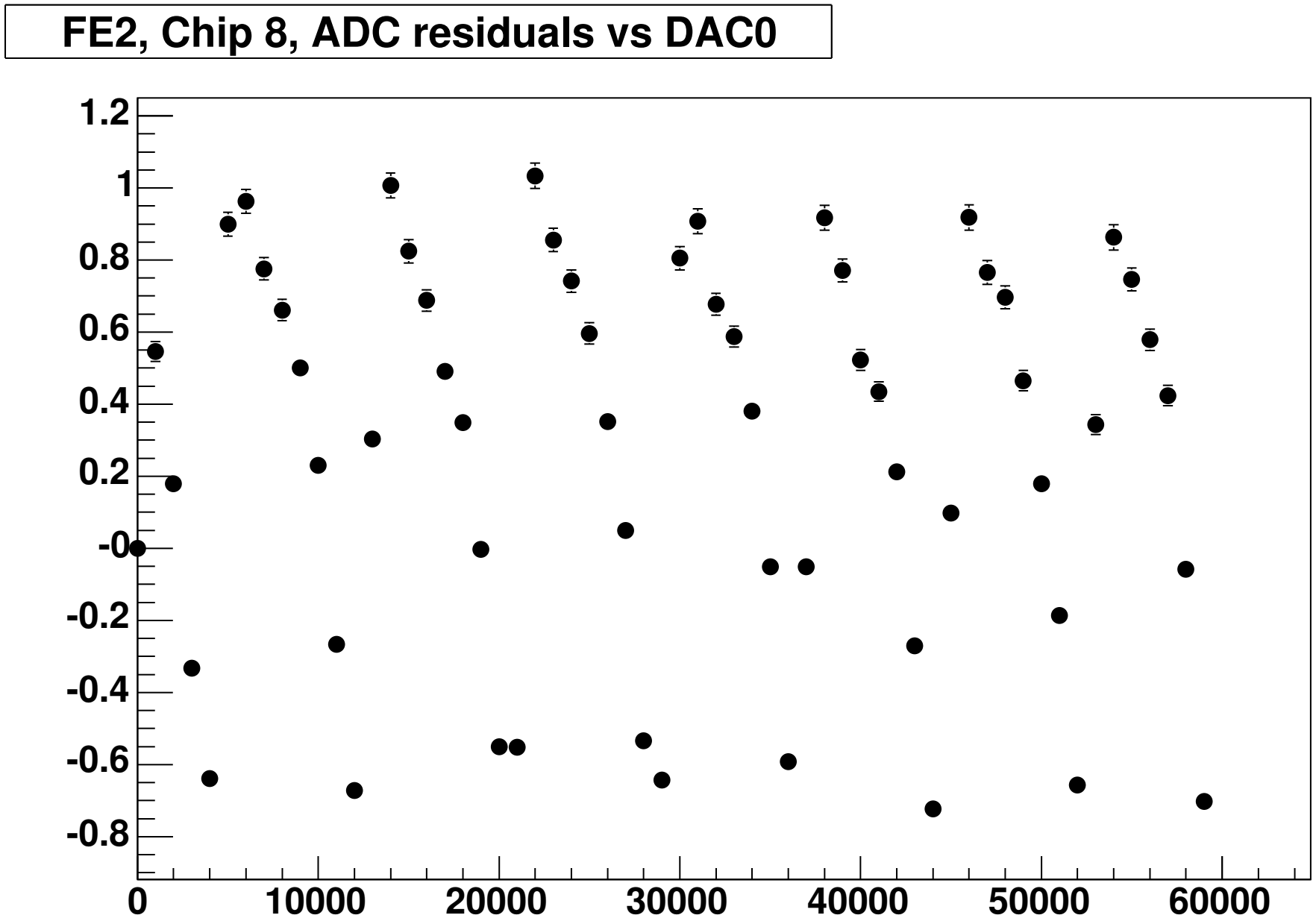

FE2, Chip 7, ADC mean vs DAC1
χ² / ndf 5.017e+04 / 57
p0 -30.24 ± 0.004154
p1 0.2317 ± 1.346e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

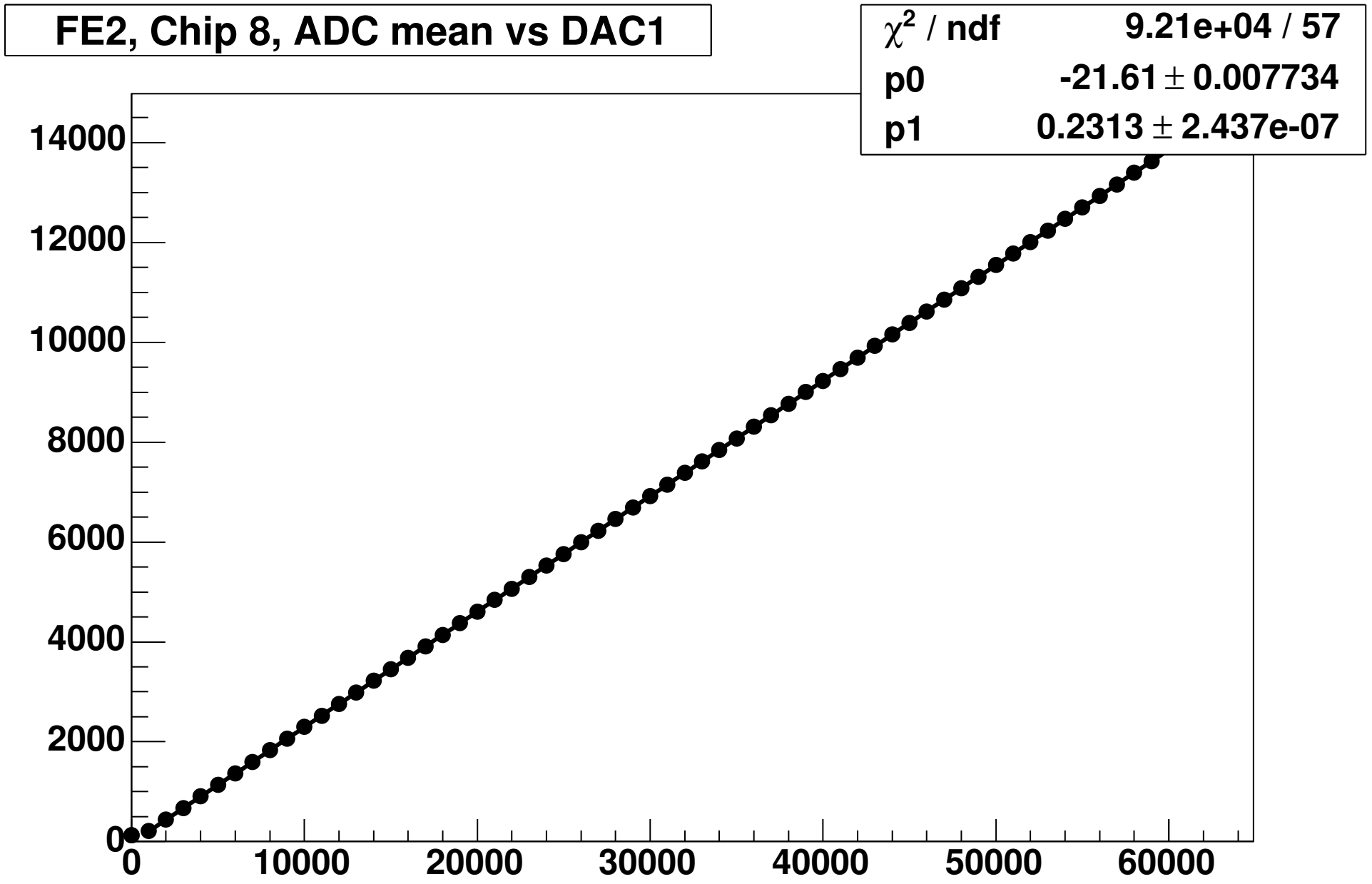

FE2, Chip 7, ADC noise vs DAC1
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0
10000
20000
30000
40000
50000
60000

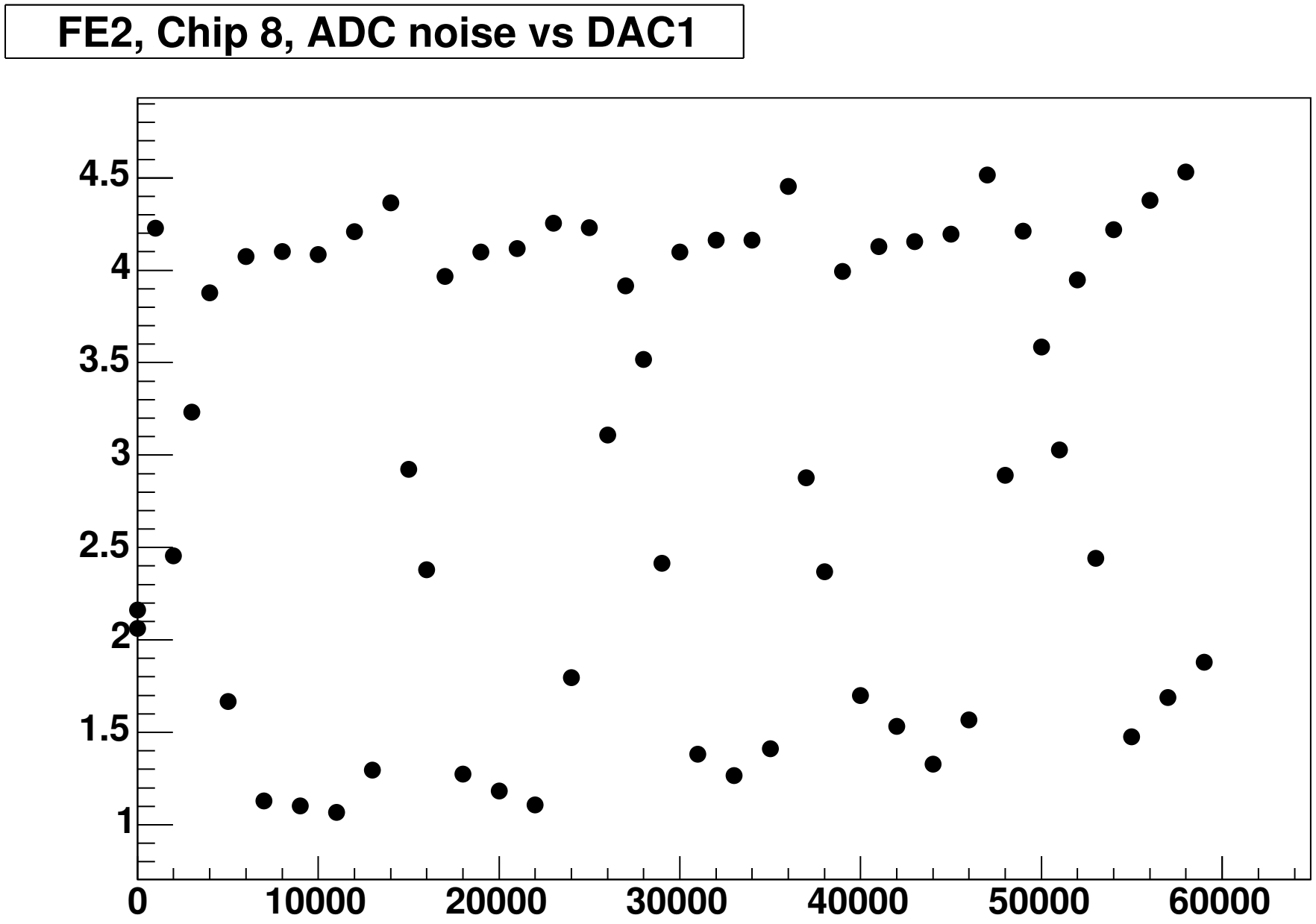

FE2, Chip 7, ADC residuals vs DAC1
1
0.5
0
-0.5
-1
0
10000
20000
30000
40000
50000
60000

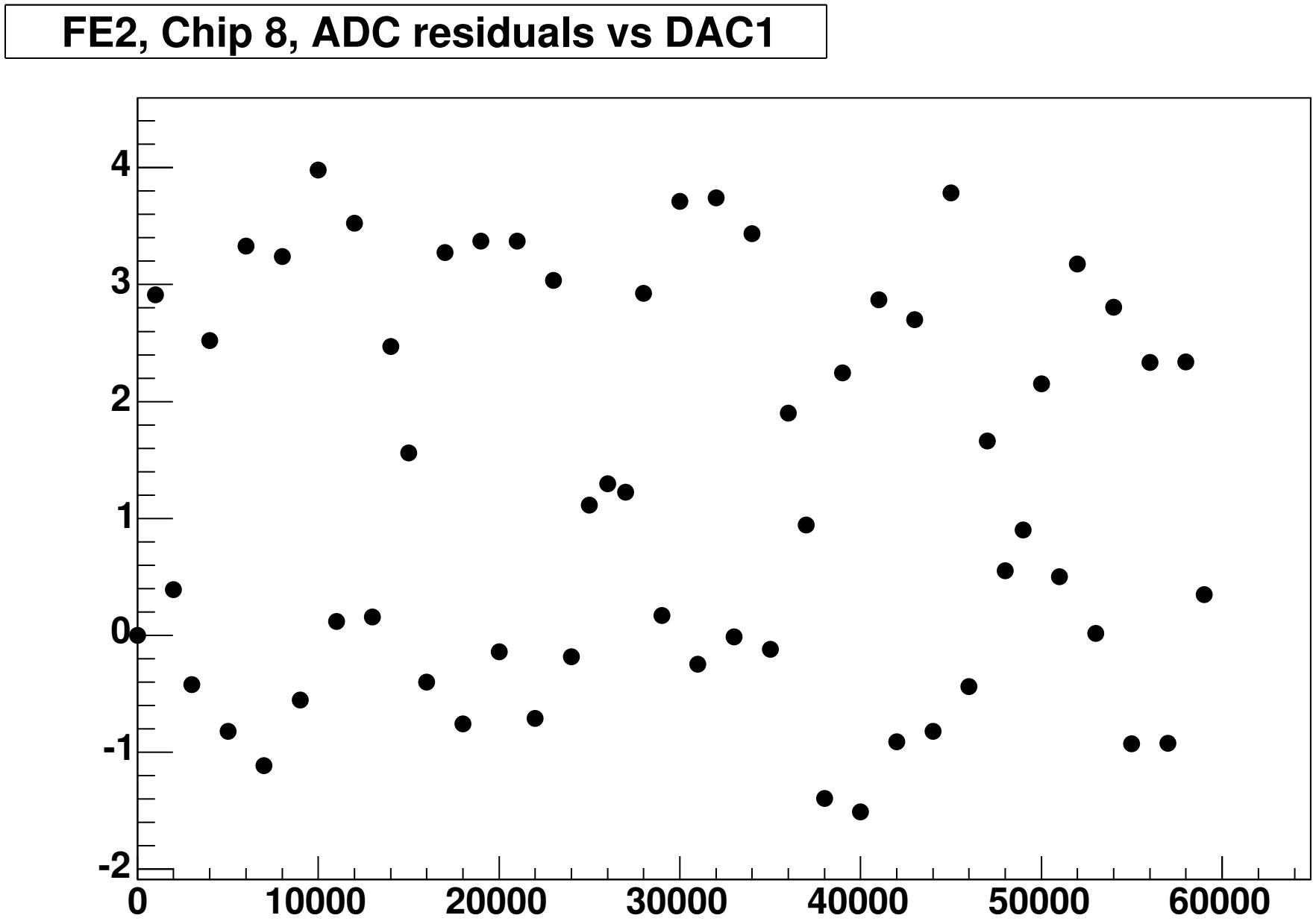

FE2, Chip 8, ADC mean vs DAC0
χ² / ndf 3.27e+04 / 57
p0 126.1 ± 0.006033
p1 3.479e-06 ± 1.798e-07
127.4
127.2
127
126.8
126.6
126.4
126.2
126
125.8
125.6
125.4
0
10000
20000
30000
40000
50000
60000

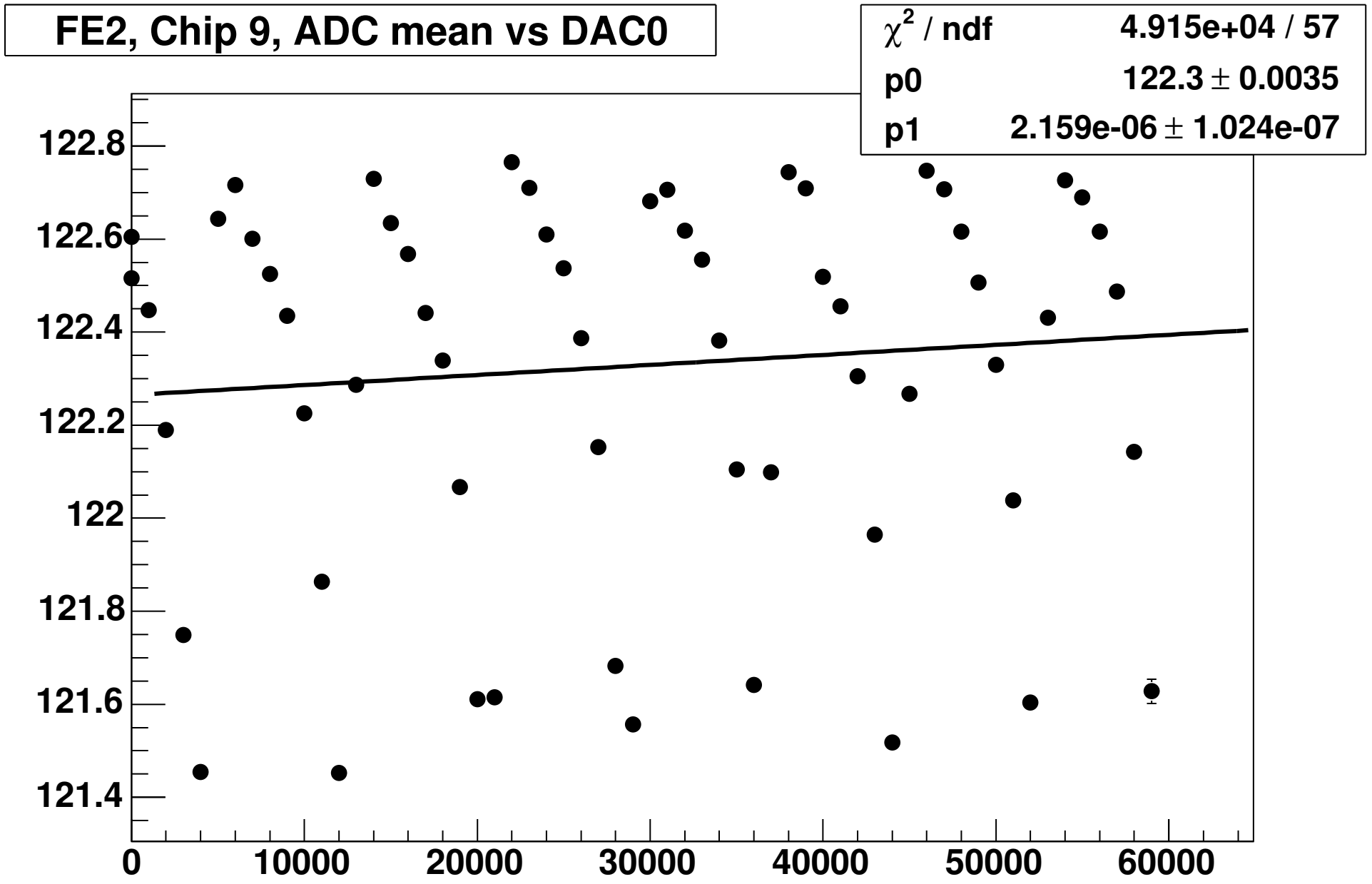

FE2, Chip 8, ADC noise vs DAC0
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0
10000
20000
30000
40000
50000
60000

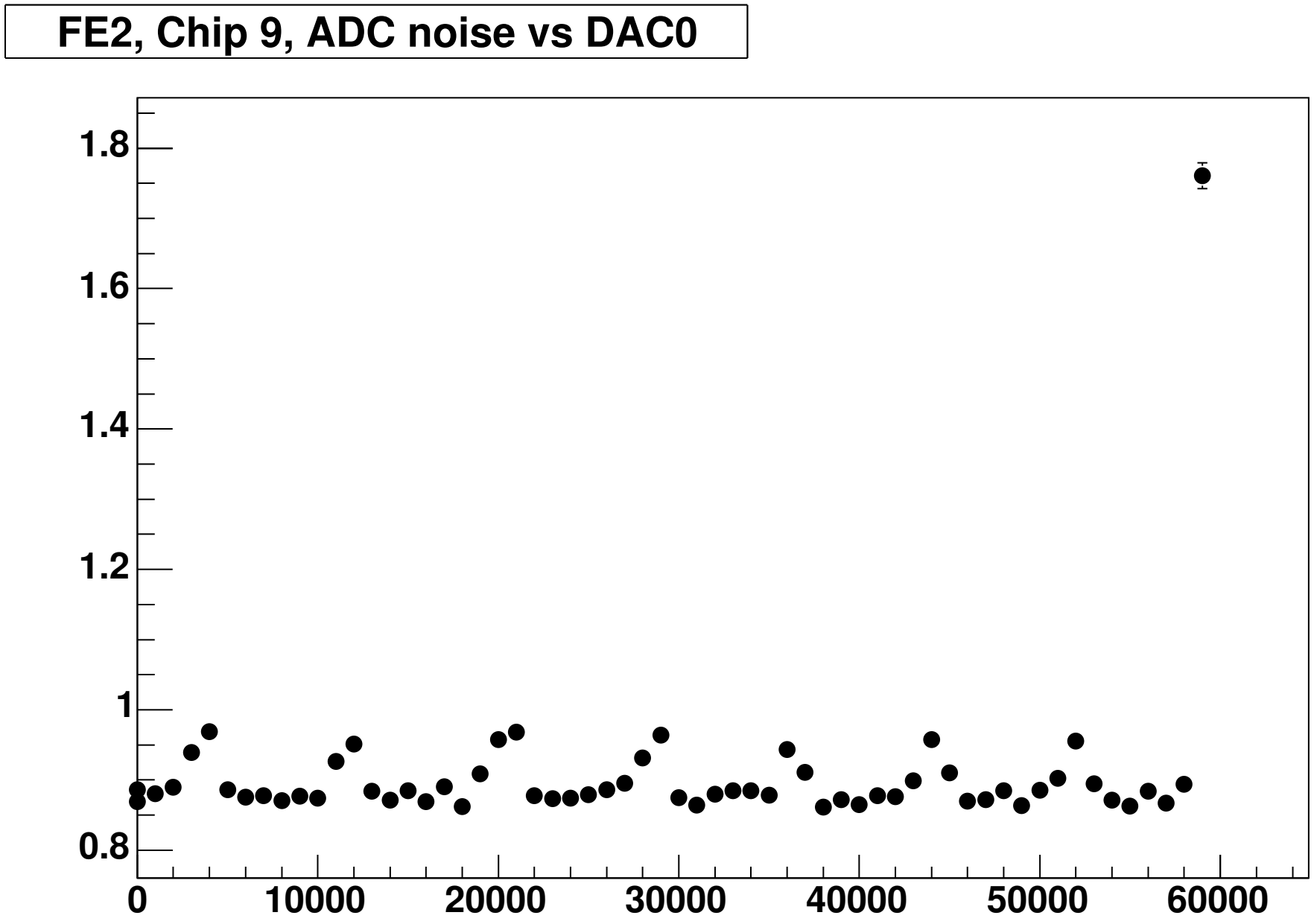

FE2, Chip 8, ADC residuals vs DAC0
1.2
1
0.8
0.6
0.4
0.2
-0
-0.2
-0.4
-0.6
-0.8
0
10000
20000
30000
40000
50000
60000

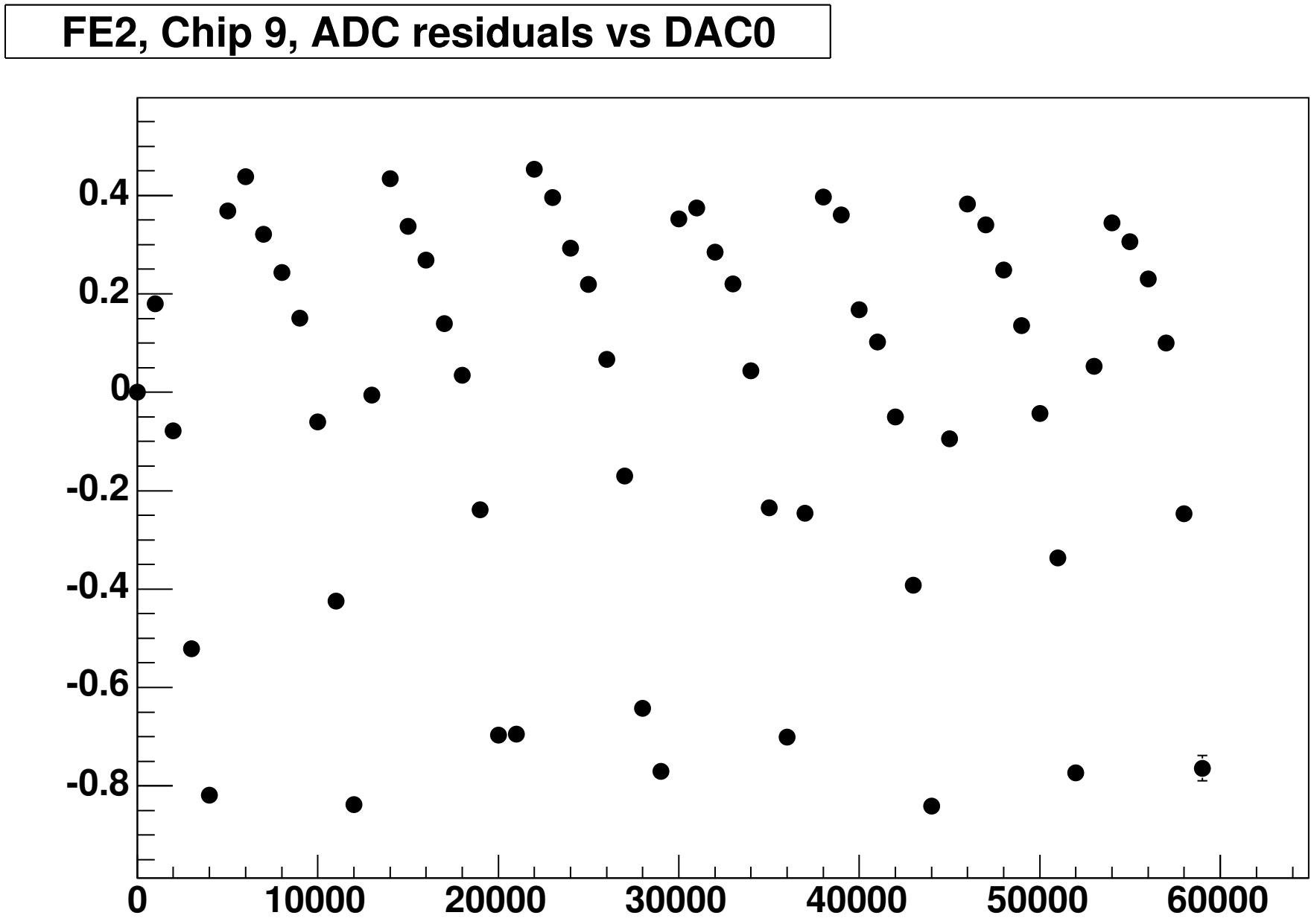

FE2, Chip 8, ADC mean vs DAC1
χ² / ndf 9.21e+04 / 57
p0 -21.61 ± 0.007734
p1 0.2313 ± 2.437e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

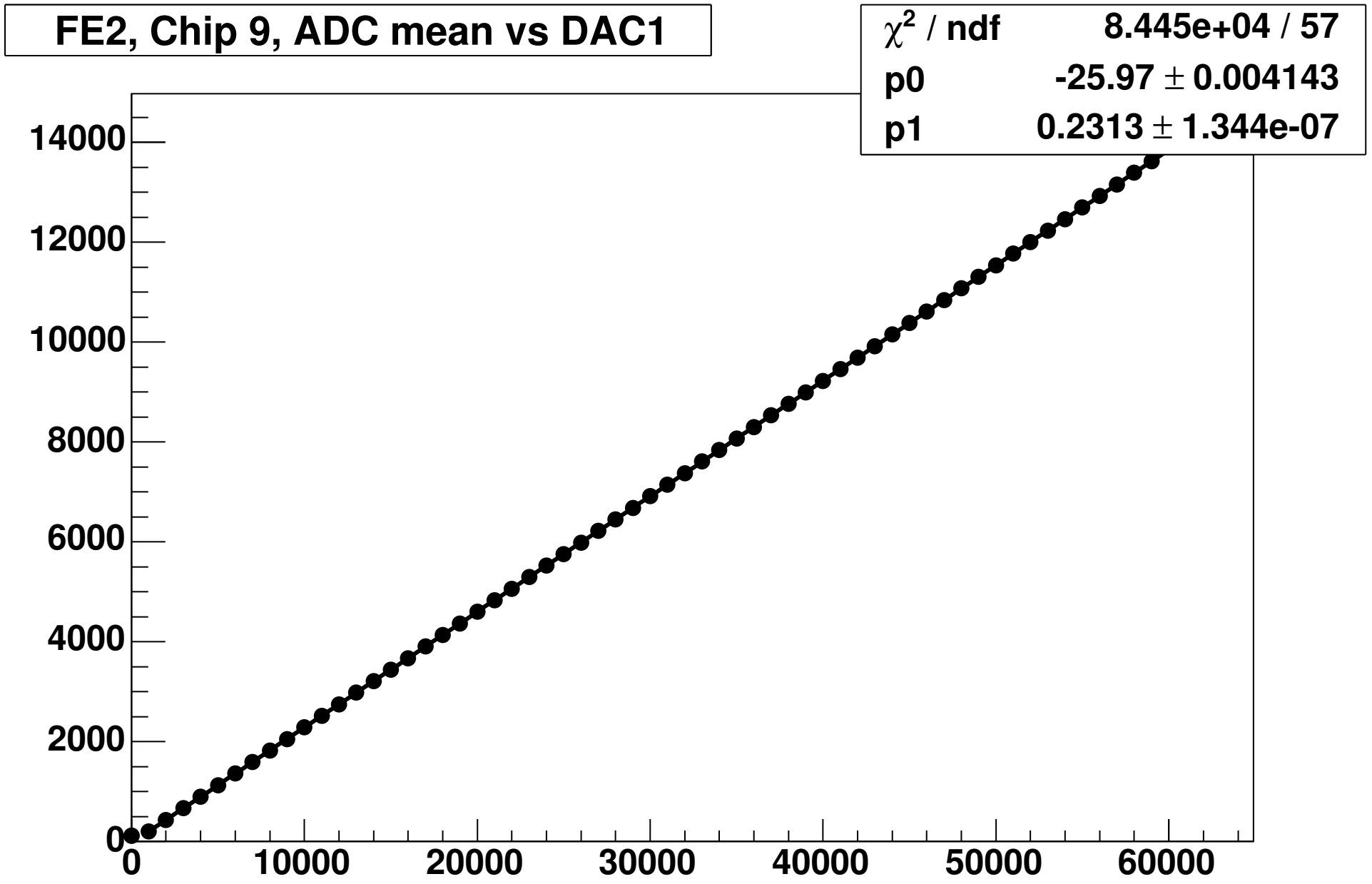

FE2, Chip 8, ADC noise vs DAC1
4.5
4
3.5
3
2.5
2
1.5
1
0
10000
20000
30000
40000
50000
60000

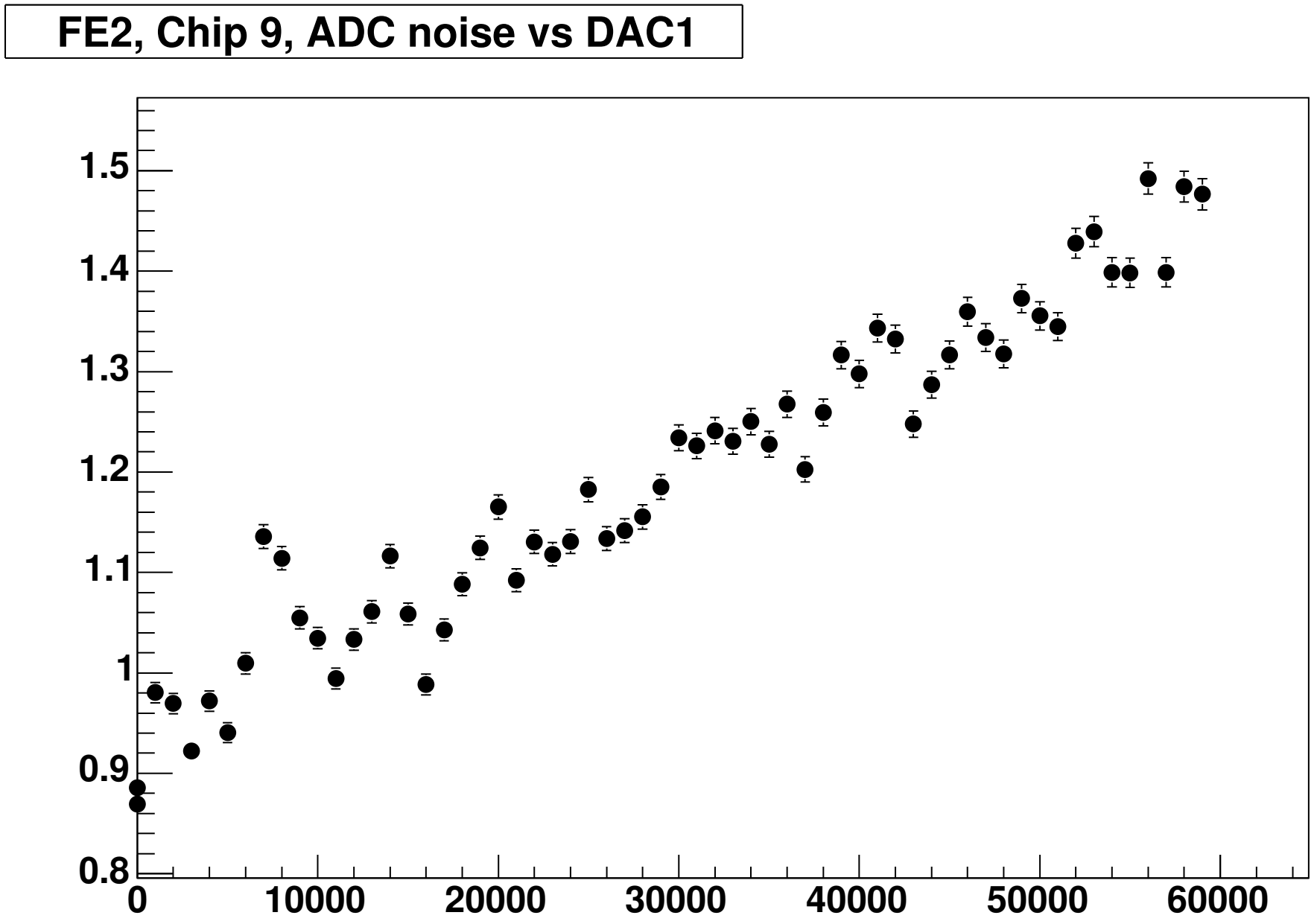

FE2, Chip 8, ADC residuals vs DAC1
4
3
2
1
0
-1
-2
0
10000
20000
30000
40000
50000
60000

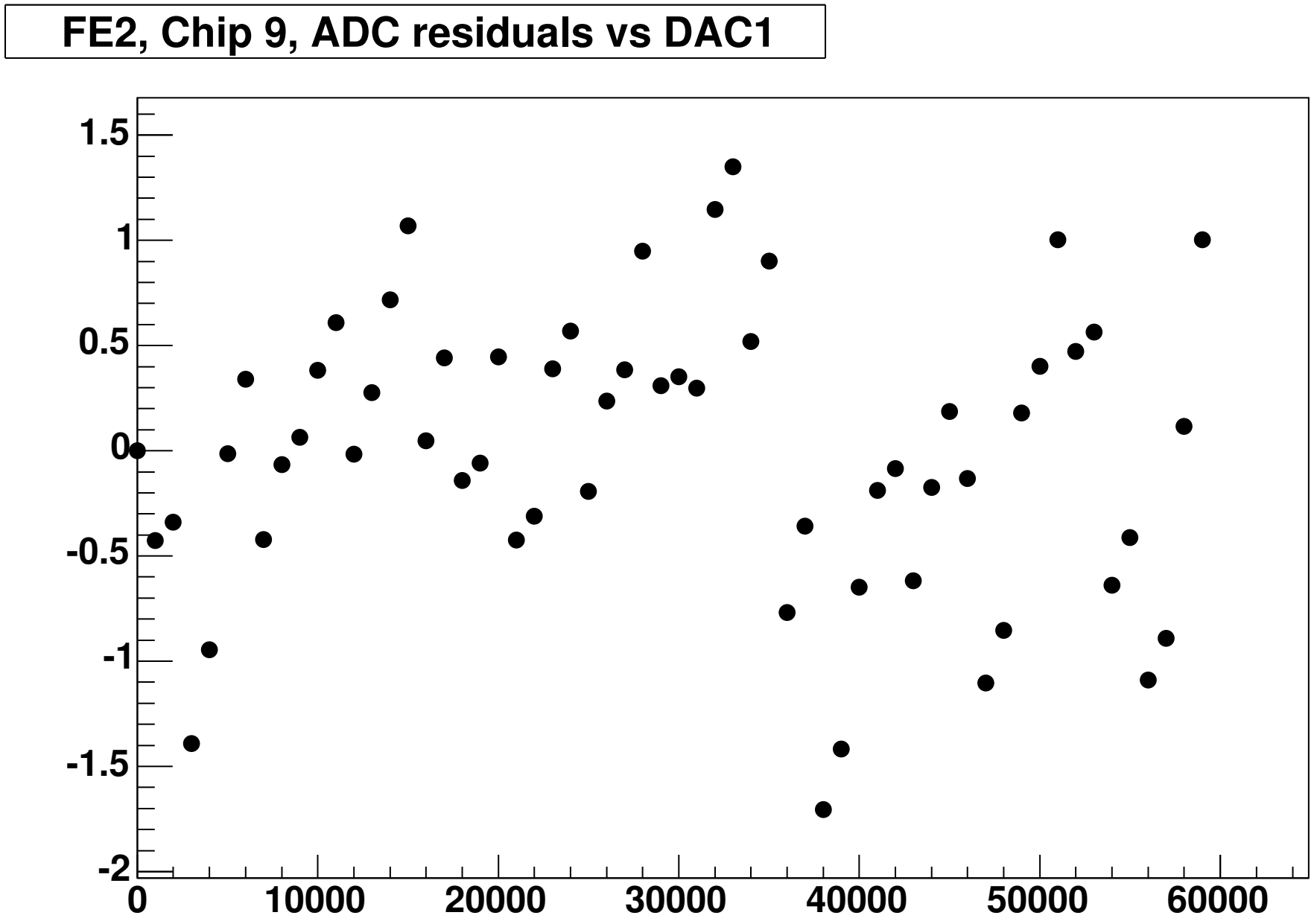

FE2, Chip 9, ADC mean vs DAC0
χ² / ndf 4.915e+04 / 57
p0 122.3 ± 0.0035
p1 2.159e-06 ± 1.024e-07
122.8
122.6
122.4
122.2
122
121.8
121.6
121.4
0
10000
20000
30000
40000
50000
60000

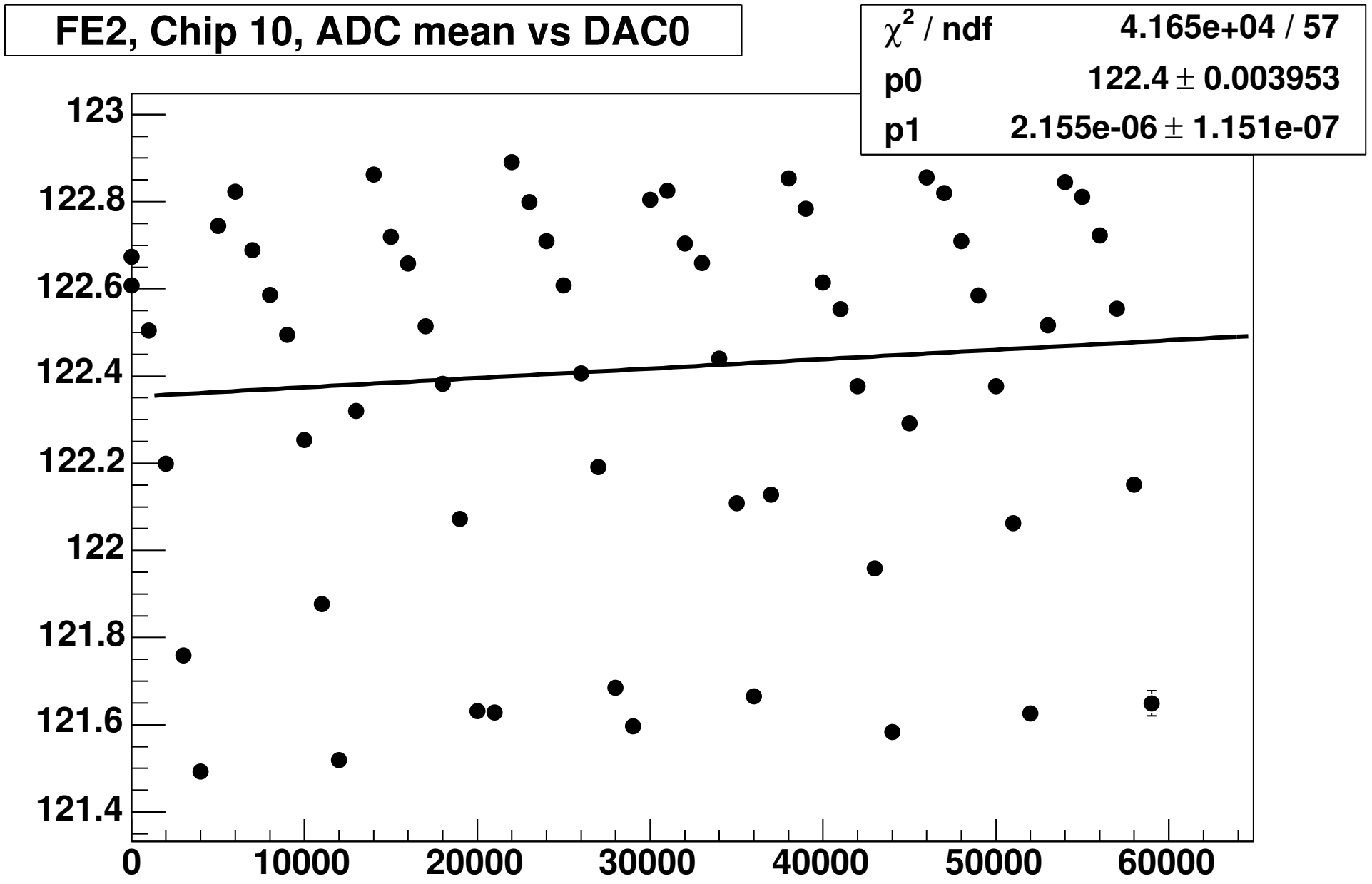

FE2, Chip 9, ADC noise vs DAC0
1.8
1.6
1.4
1.2
1
0.8
0
10000
20000
30000
40000
50000
60000

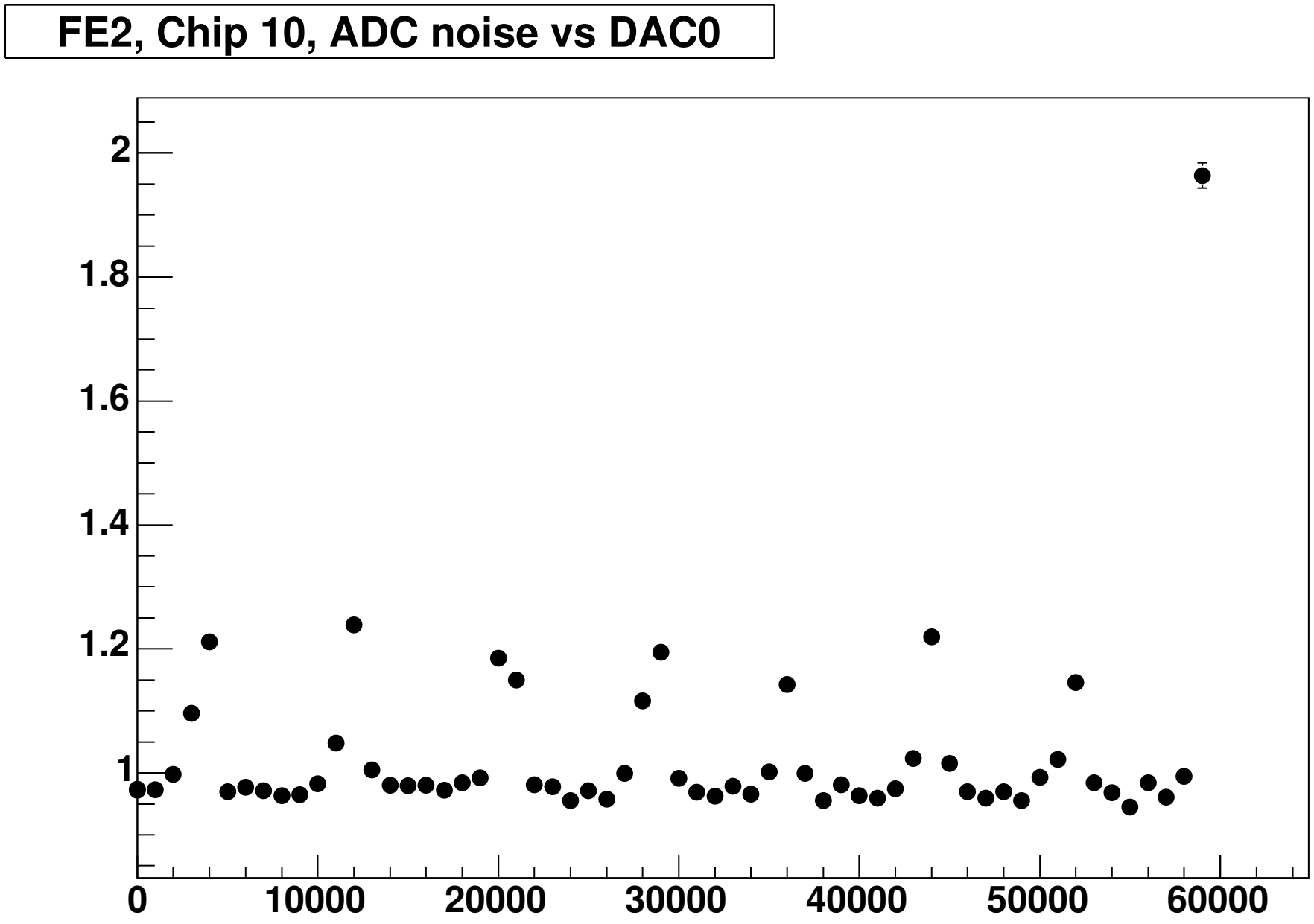

FE2, Chip 9, ADC residuals vs DAC0
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
0
10000
20000
30000
40000
50000
60000

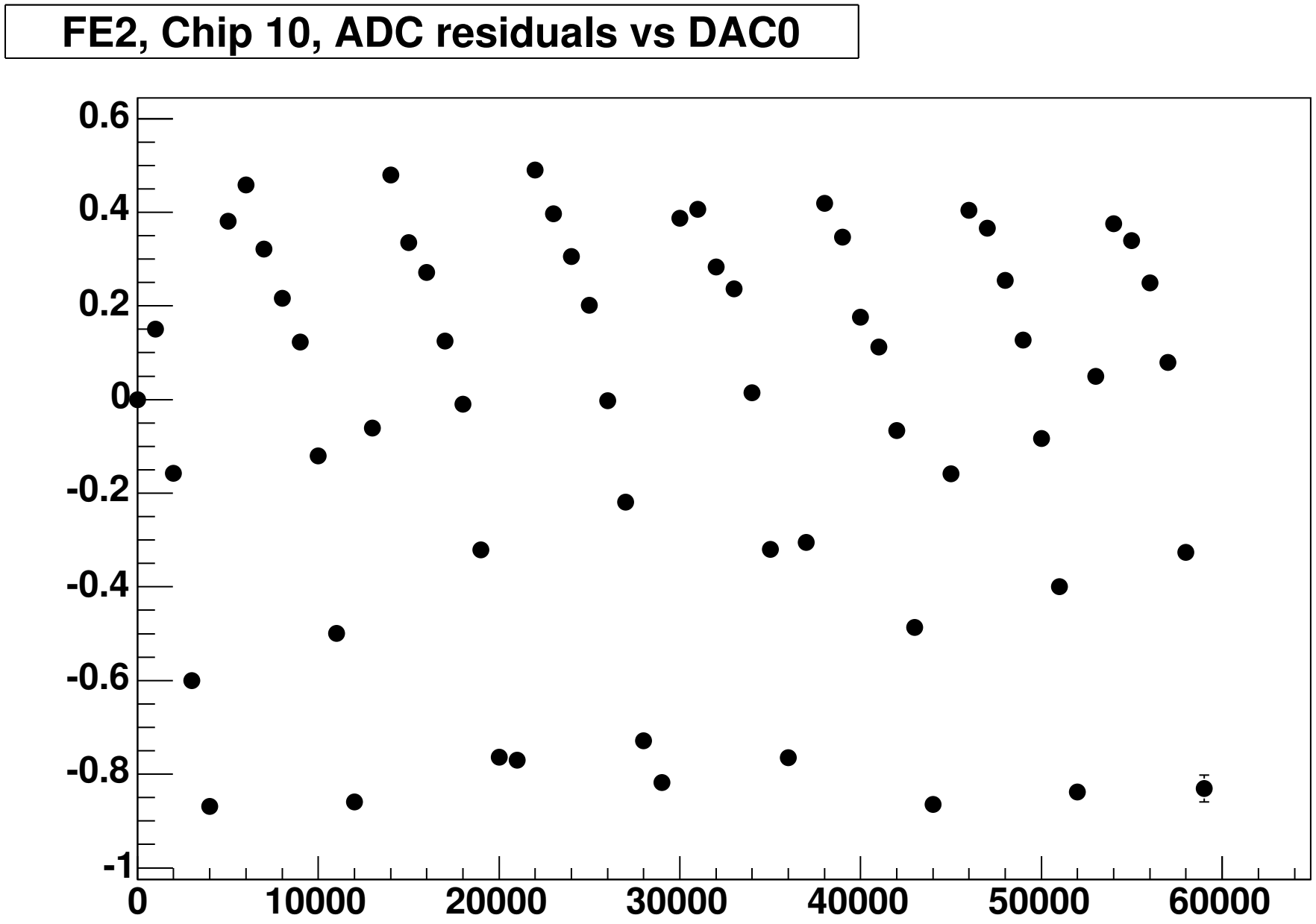

FE2, Chip 9, ADC mean vs DAC1
χ² / ndf 8.445e+04 / 57
p0 -25.97 ± 0.004143
p1 0.2313 ± 1.344e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

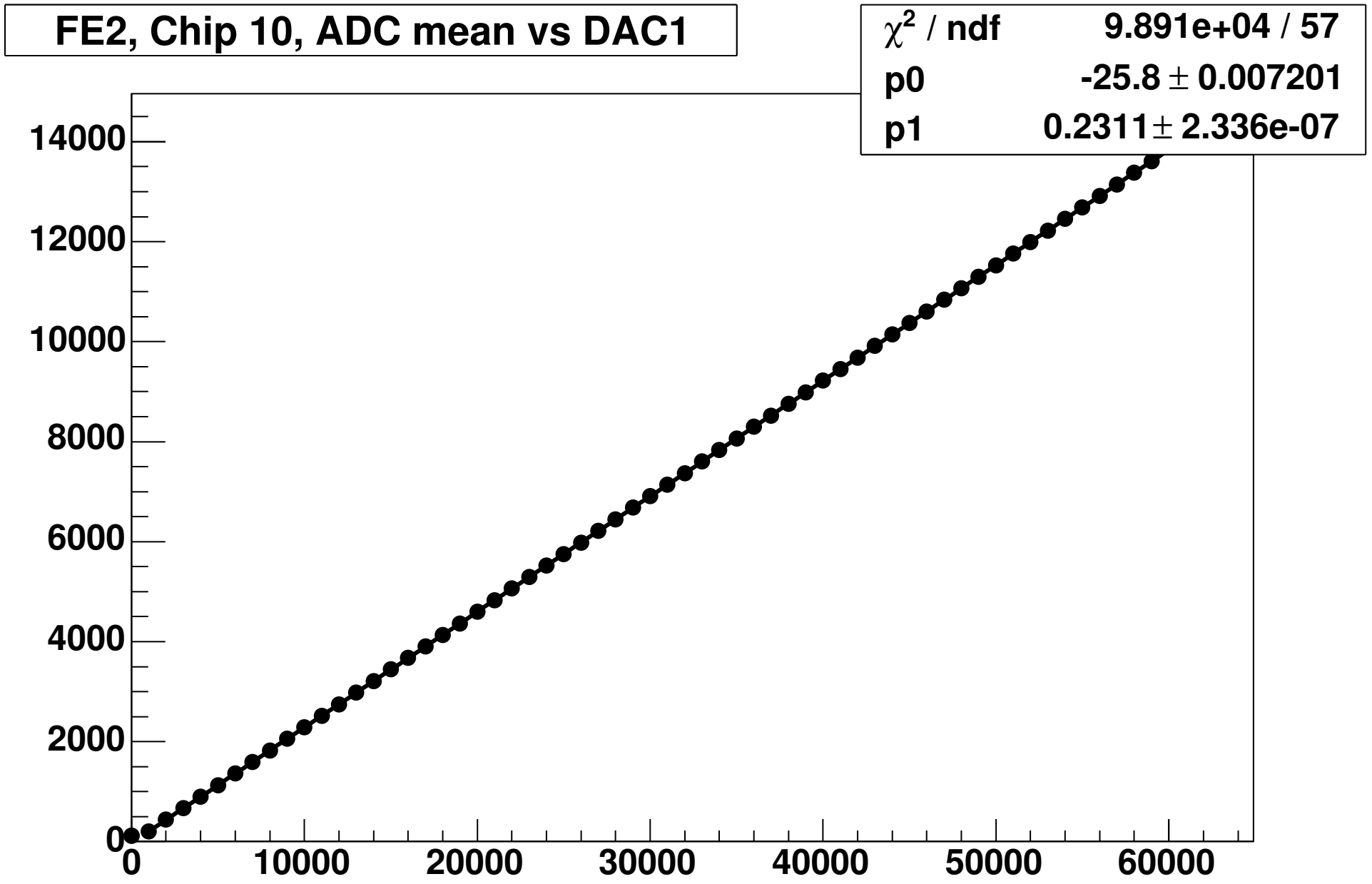

FE2, Chip 9, ADC noise vs DAC1
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0
10000
20000
30000
40000
50000
60000

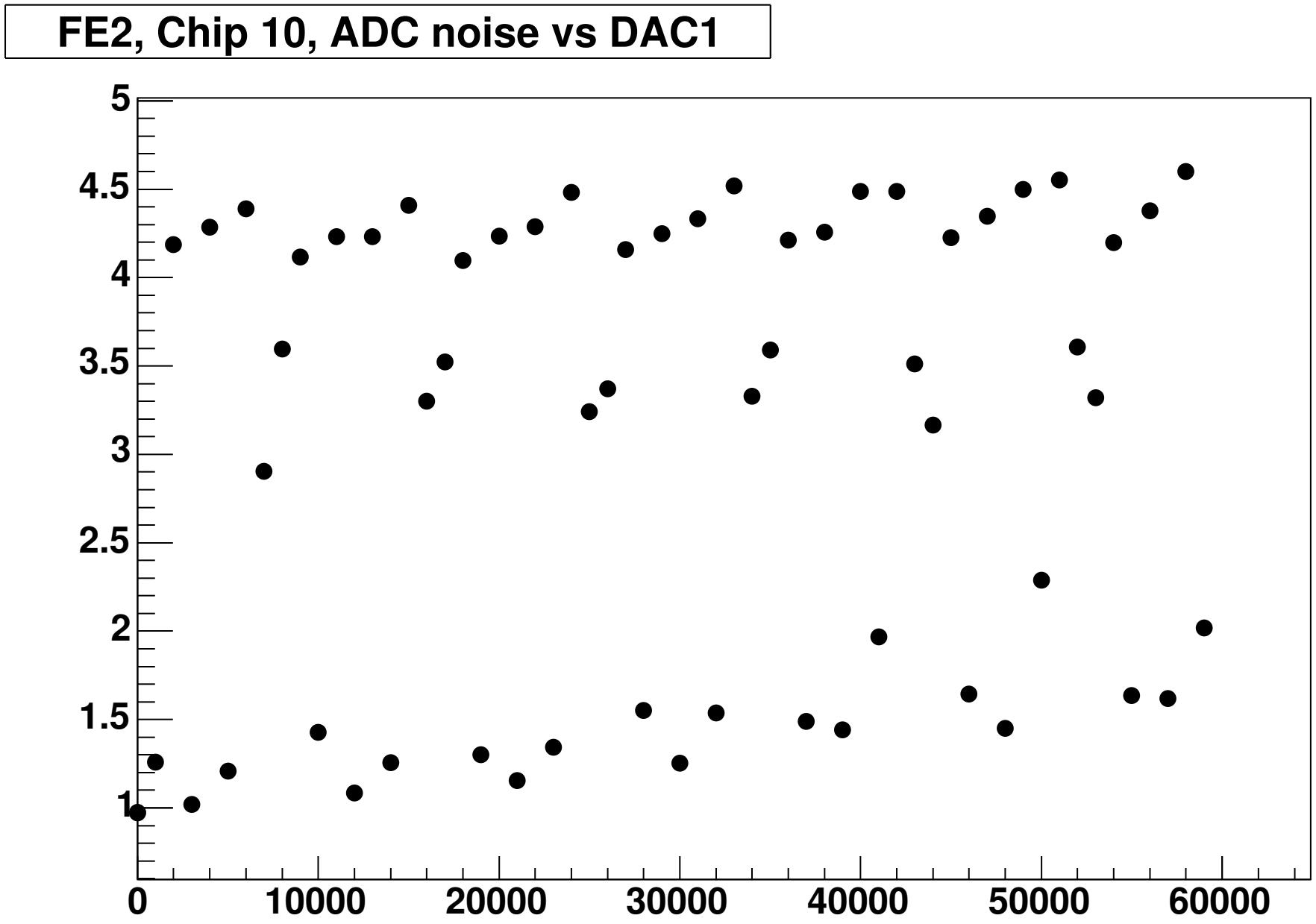

FE2, Chip 9, ADC residuals vs DAC1
1.5
1
0.5
0
-0.5
-1
-1.5
-2
0
10000
20000
30000
40000
50000
60000

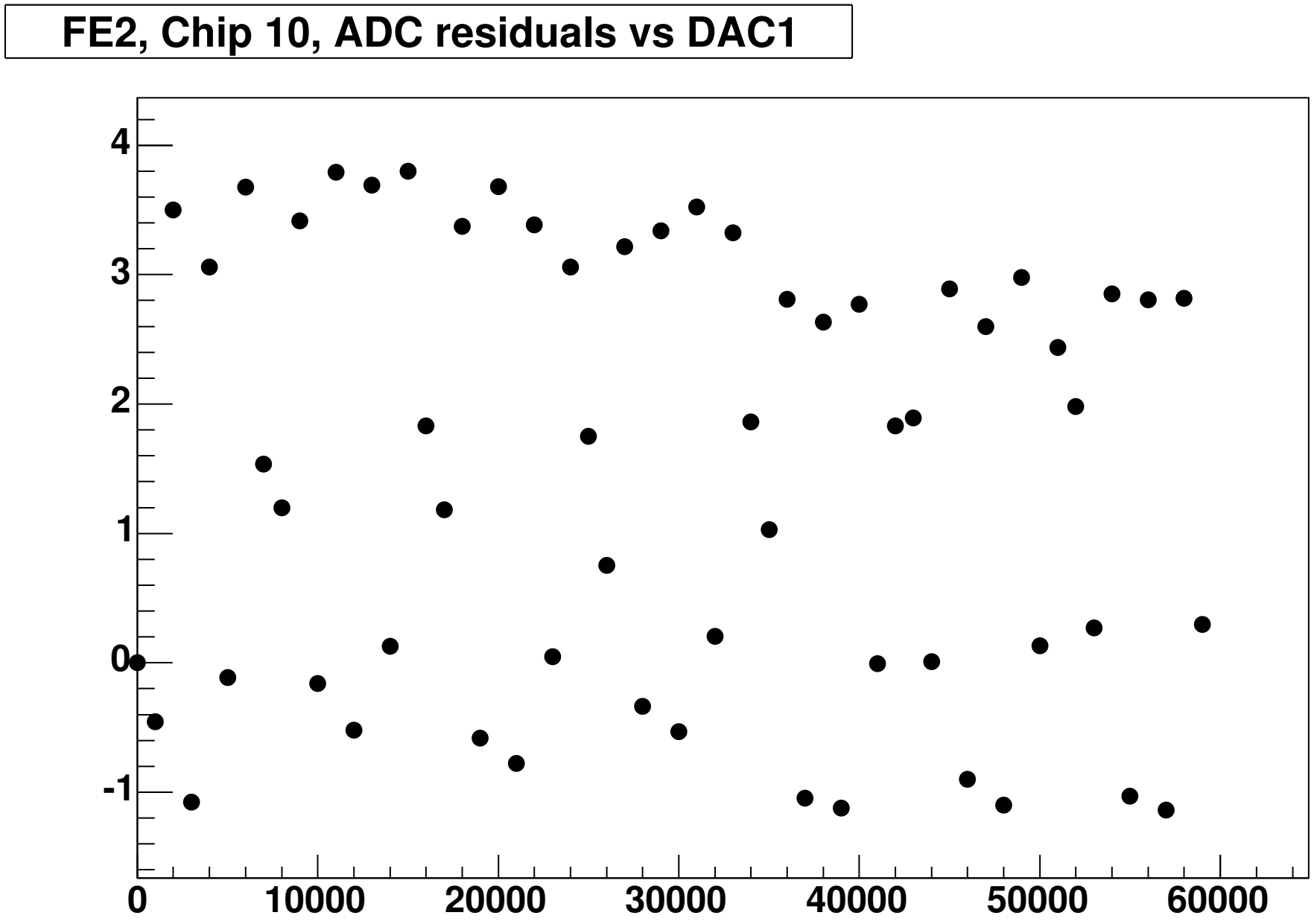

FE2, Chip 10, ADC mean vs DAC0
χ² / ndf 4.165e+04 / 57
p0 122.4 ± 0.003953
p1 2.155e-06 ± 1.151e-07
123
122.8
122.6
122.4
122.2
122
121.8
121.6
121.4
0
10000
20000
30000
40000
50000
60000

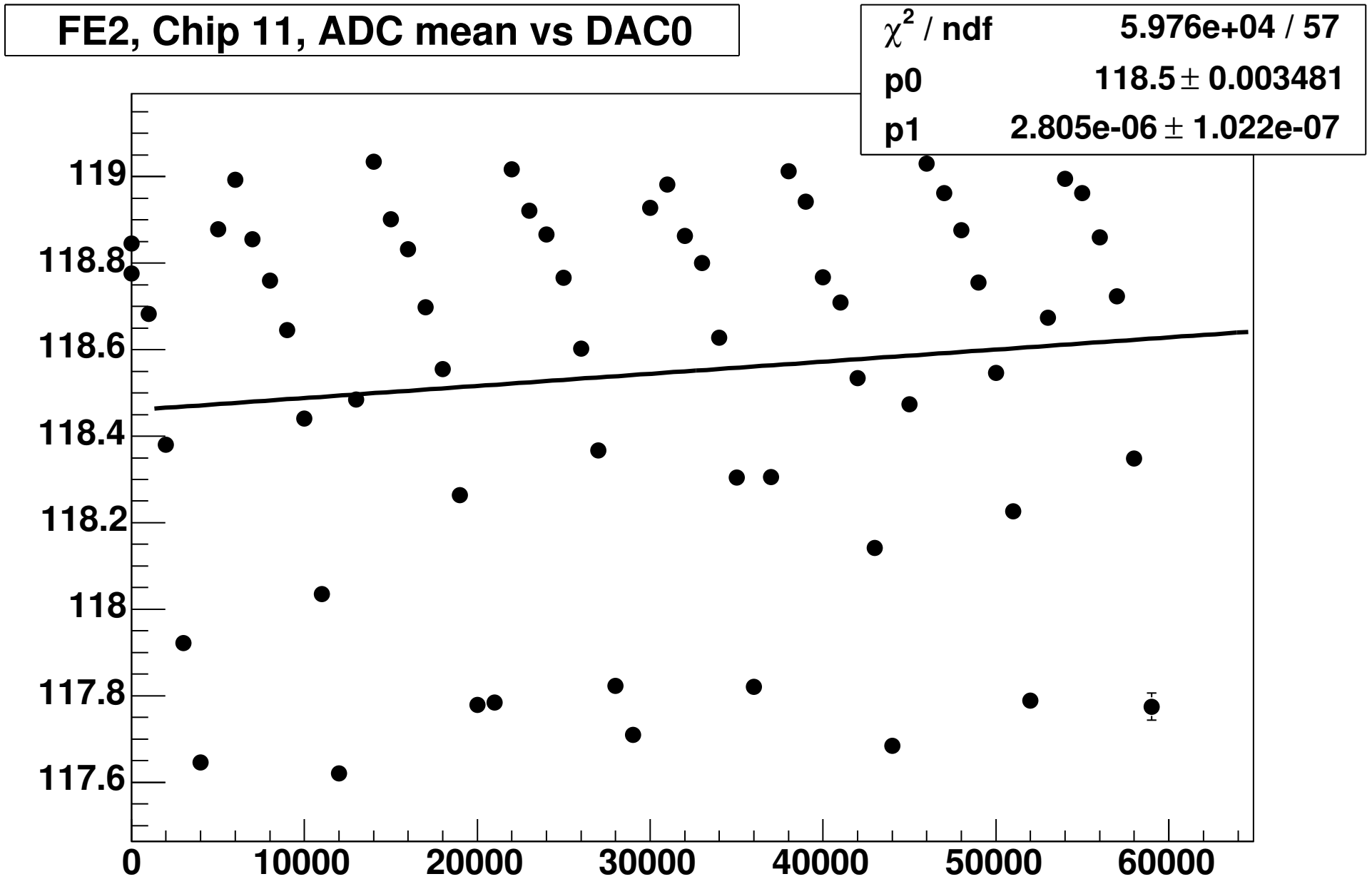

FE2, Chip 10, ADC noise vs DAC0
2
1.8
1.6
1.4
1.2
1
0
10000
20000
30000
40000
50000
60000

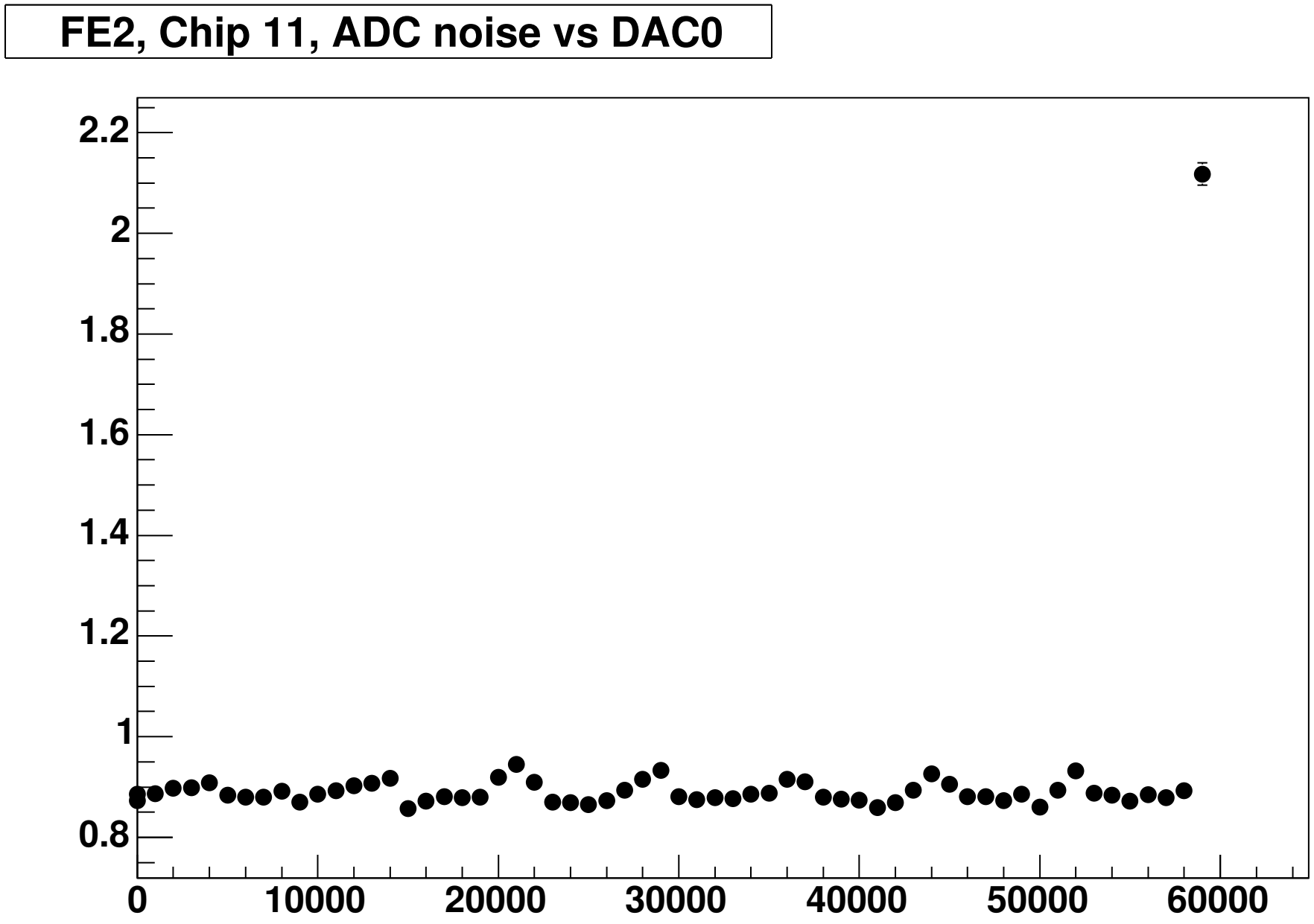

FE2, Chip 10, ADC residuals vs DAC0
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
0
10000
20000
30000
40000
50000
60000

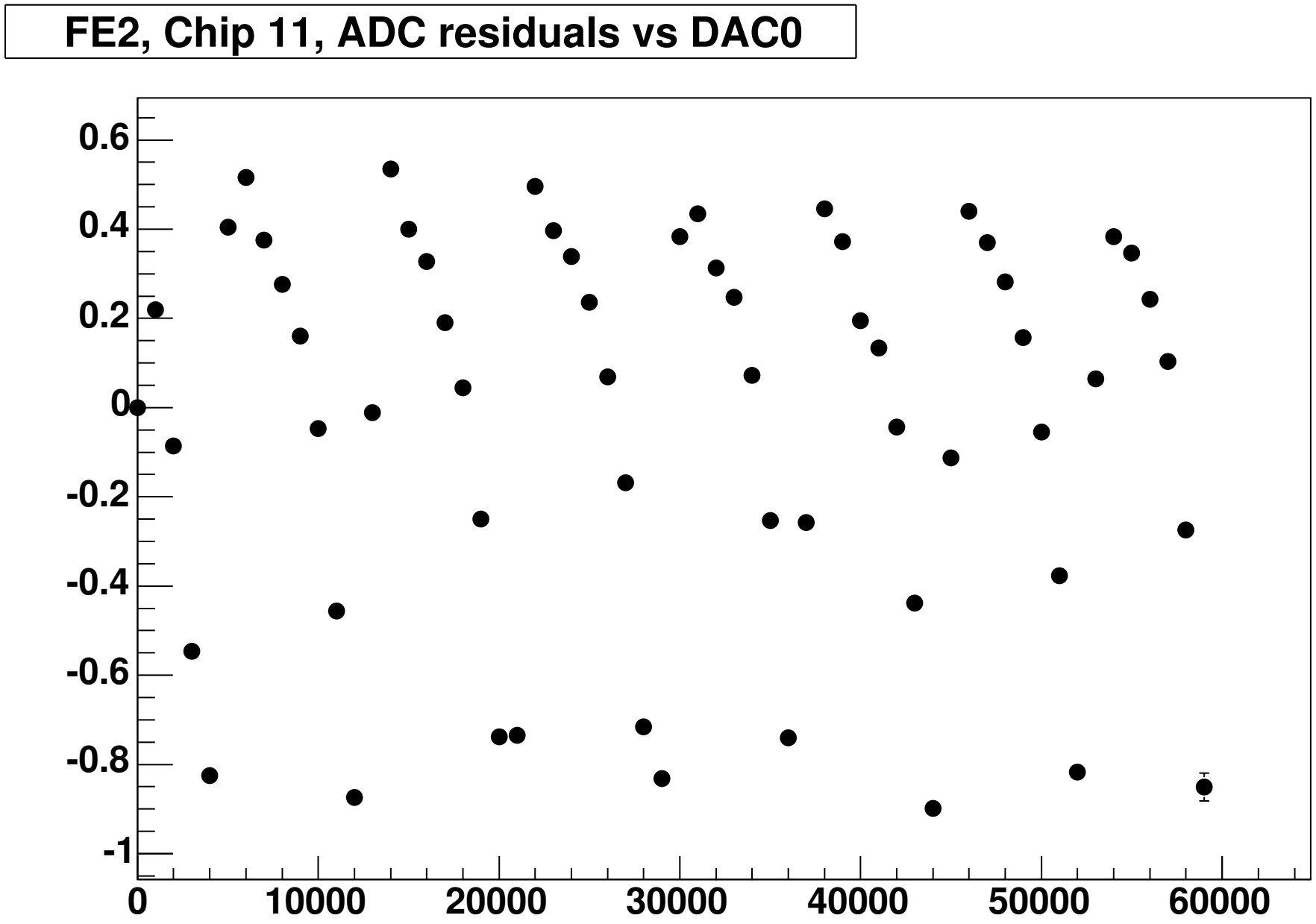

FE2, Chip 10, ADC mean vs DAC1
χ² / ndf 9.891e+04 / 57
p0 -25.8 ± 0.007201
p1 0.2311 ± 2.336e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

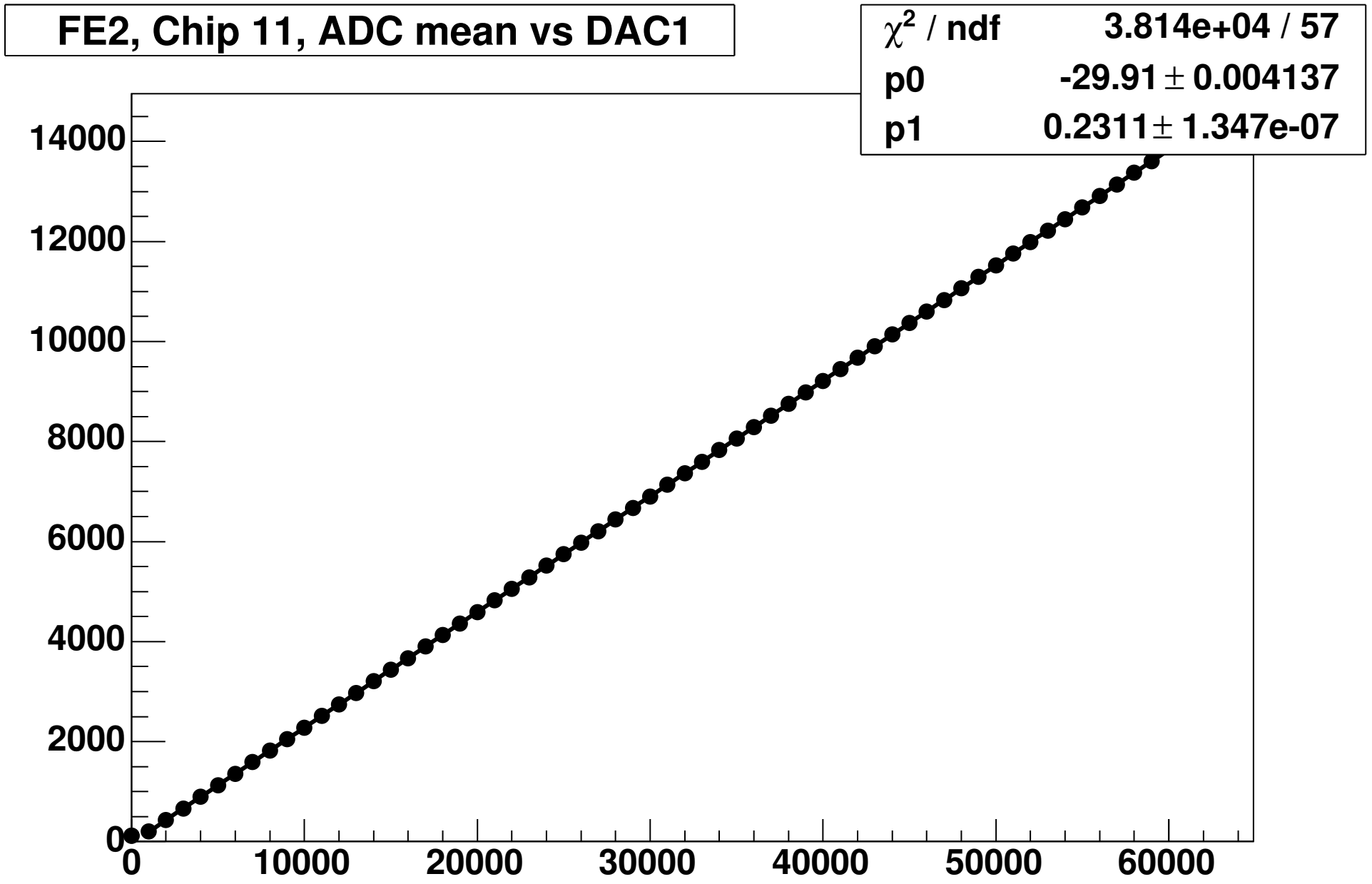

FE2, Chip 10, ADC noise vs DAC1
5
4.5
4
3.5
3
2.5
2
1.5
1
0
10000
20000
30000
40000
50000
60000

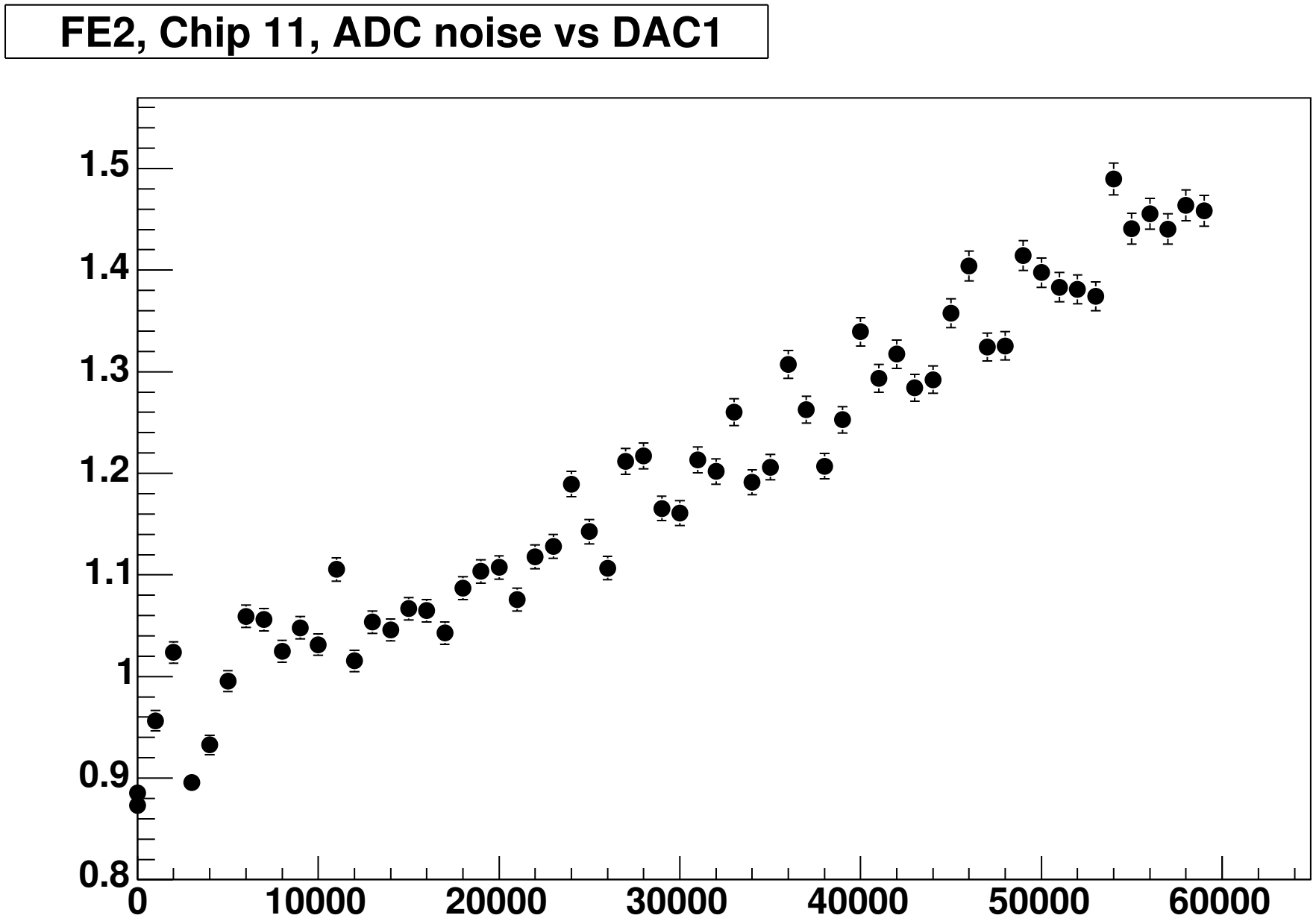

FE2, Chip 10, ADC residuals vs DAC1
4
3
2
1
0
-1
0
10000
20000
30000
40000
50000
60000

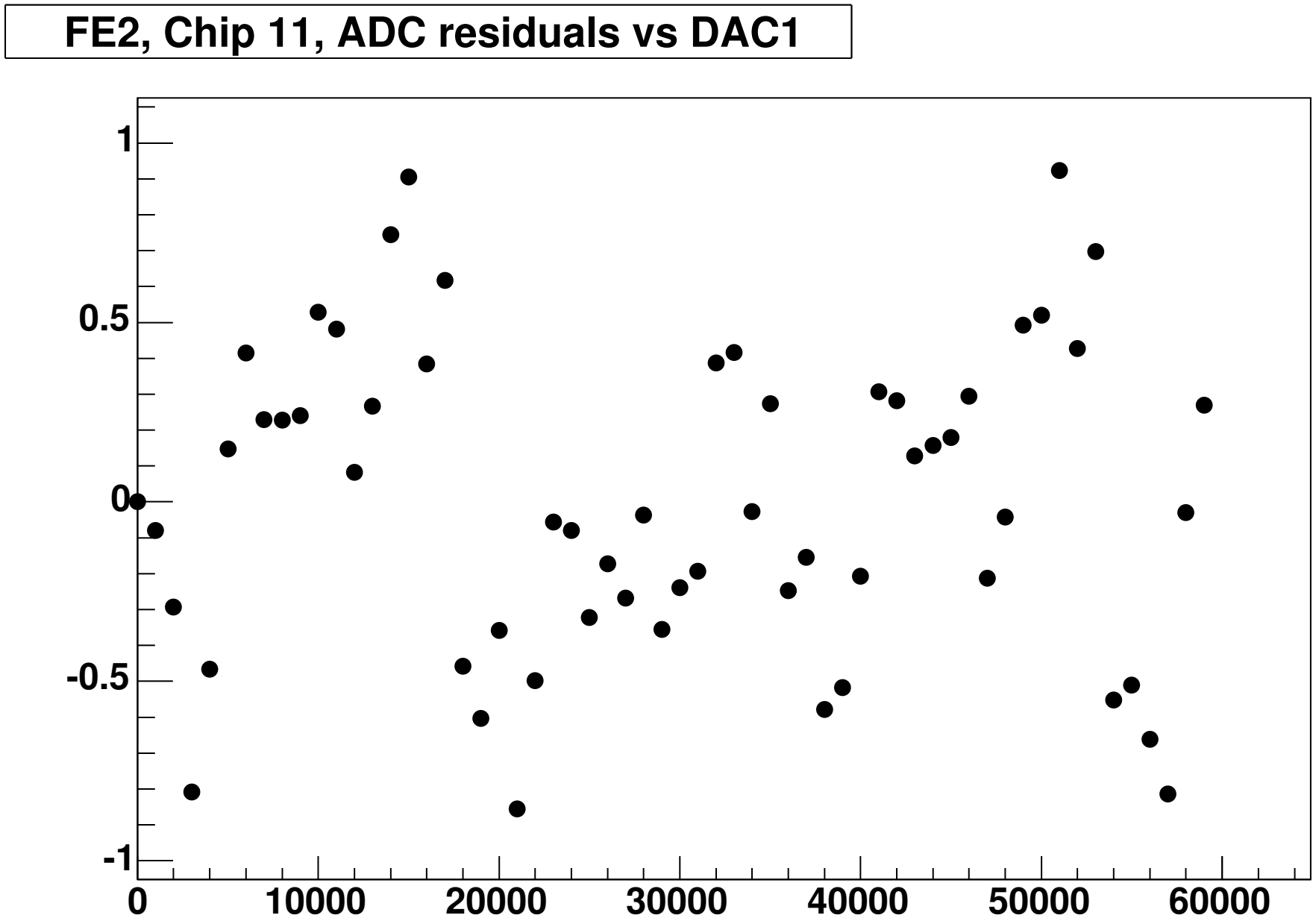

FE2, Chip 11, ADC mean vs DAC0
χ² / ndf 5.976e+04 / 57
p0 118.5 ± 0.003481
p1 2.805e-06 ± 1.022e-07
119
118.8
118.6
118.4
118.2
118
117.8
117.6
0
10000
20000
30000
40000
50000
60000

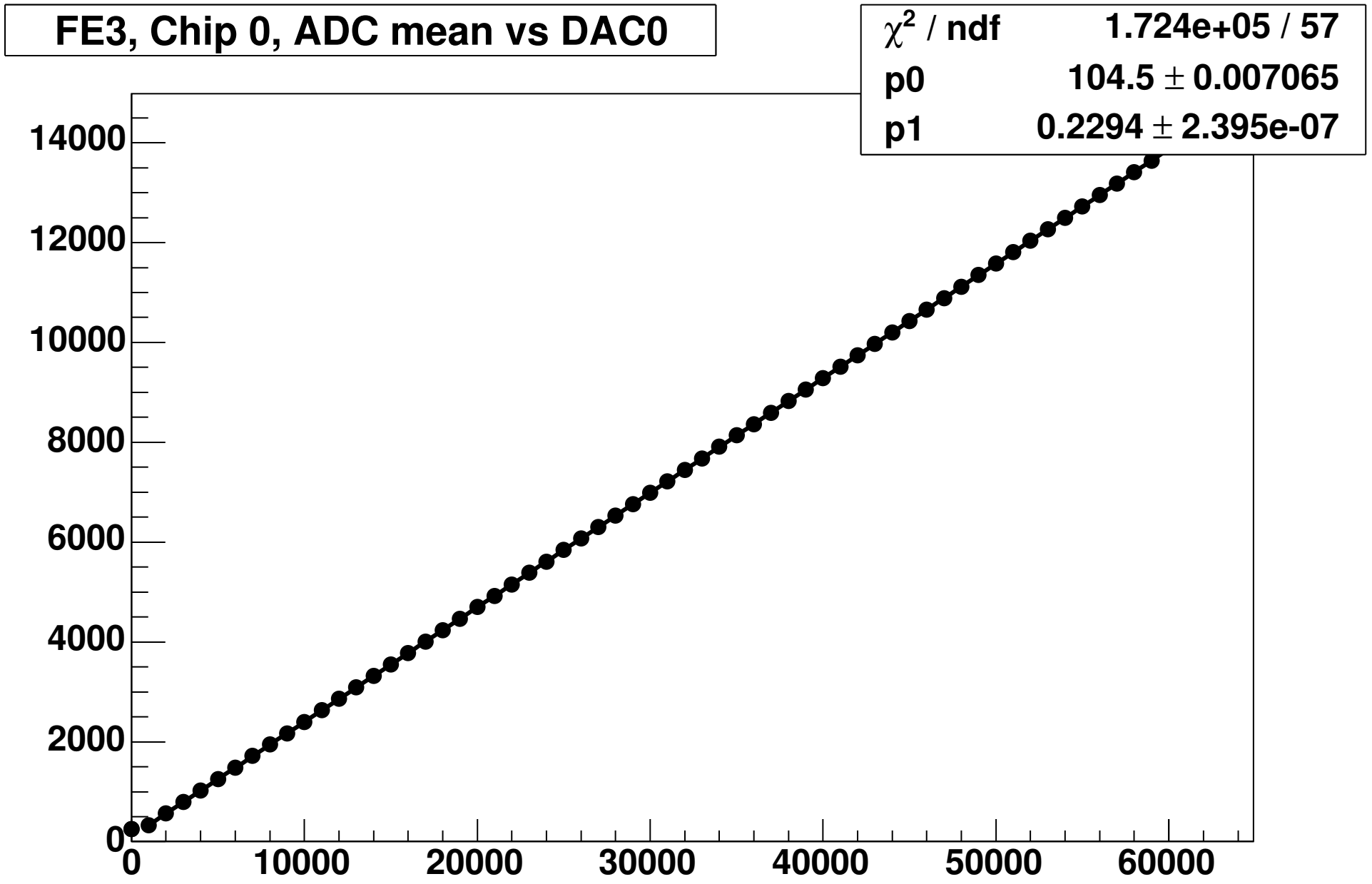

FE2, Chip 11, ADC noise vs DAC0
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0
10000
20000
30000
40000
50000
60000

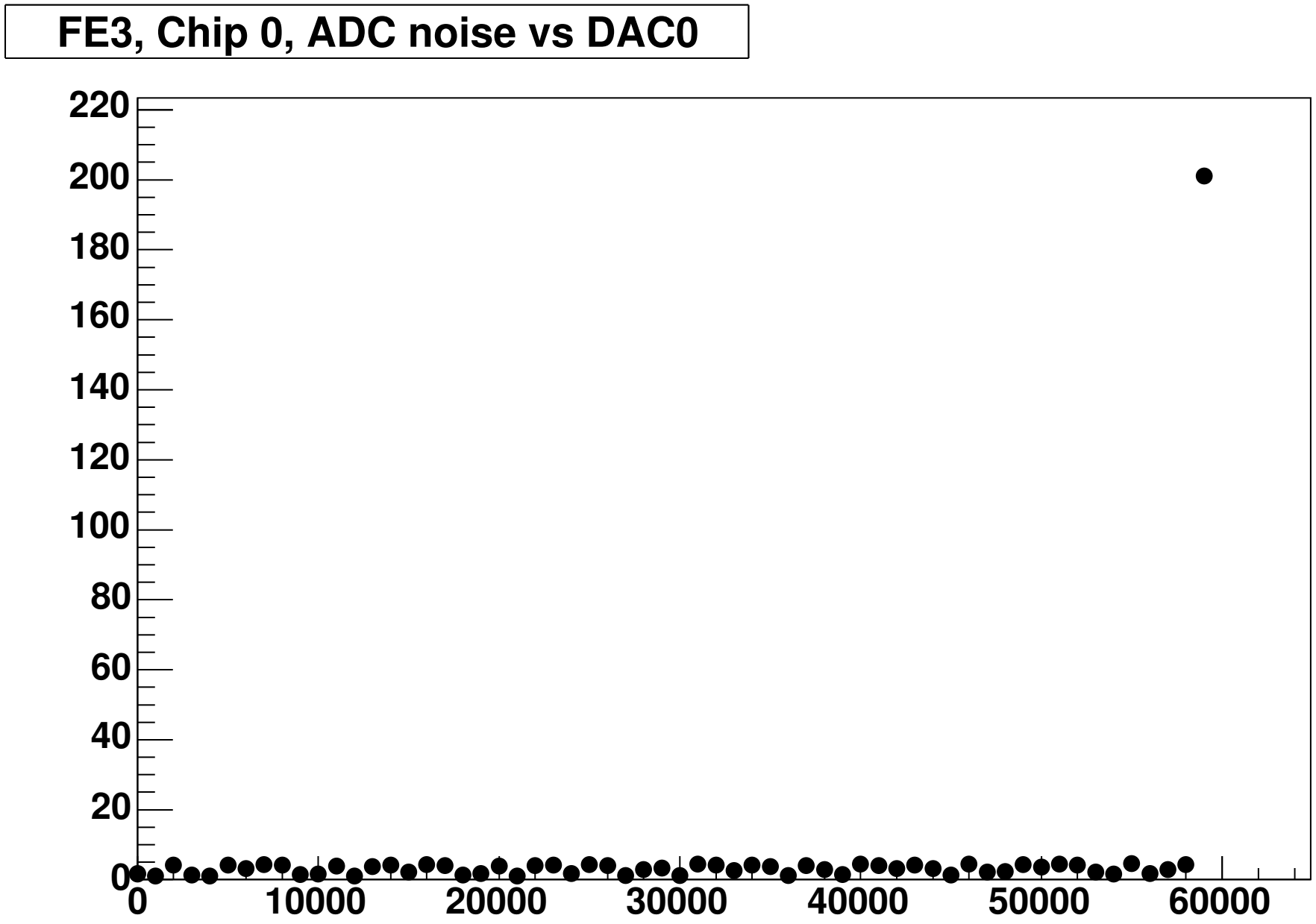

FE2, Chip 11, ADC residuals vs DAC0
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
0
10000
20000
30000
40000
50000
60000

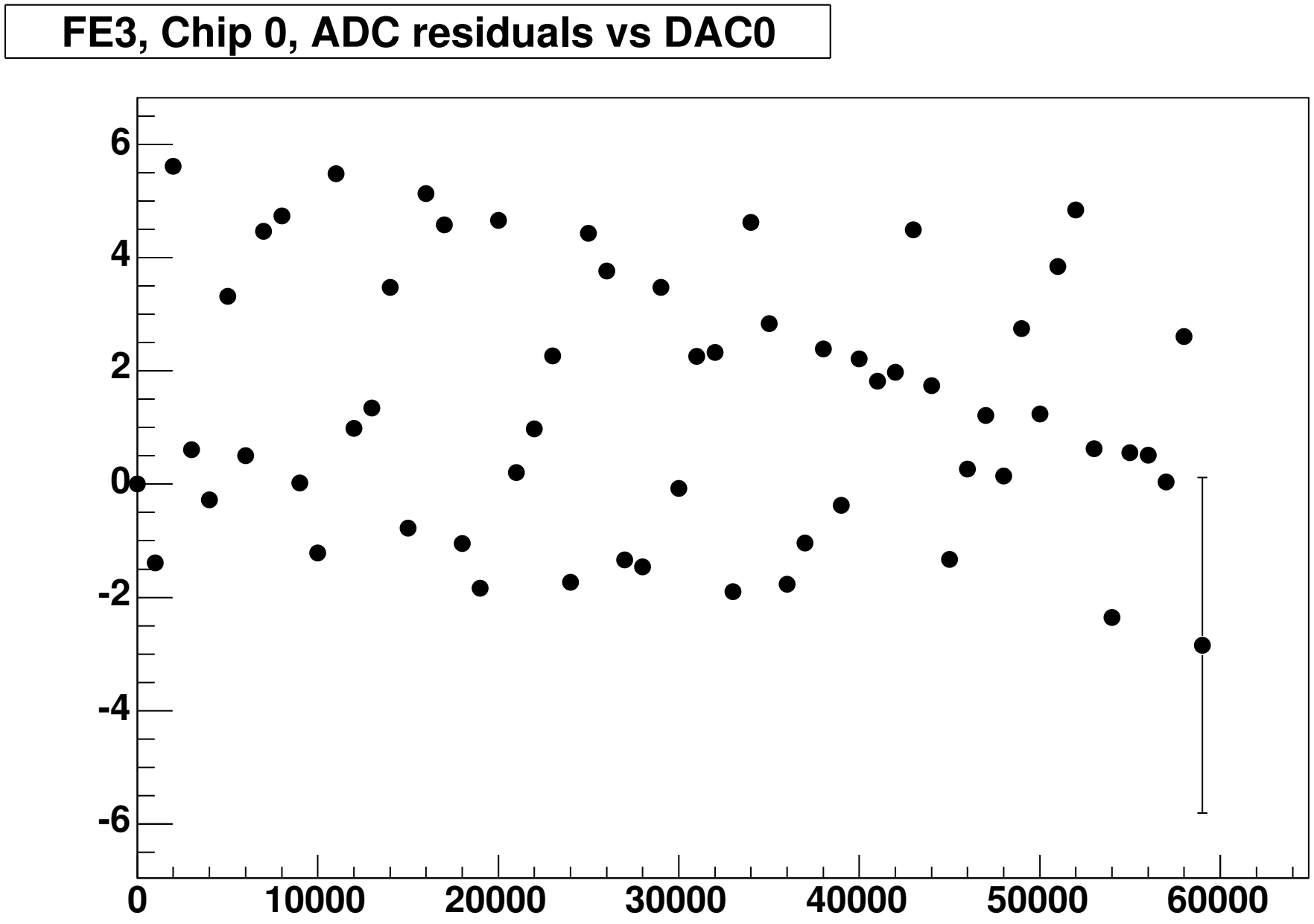

FE2, Chip 11, ADC mean vs DAC1
χ² / ndf 3.814e+04 / 57
p0 -29.91 ± 0.004137
p1 0.2311 ± 1.347e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

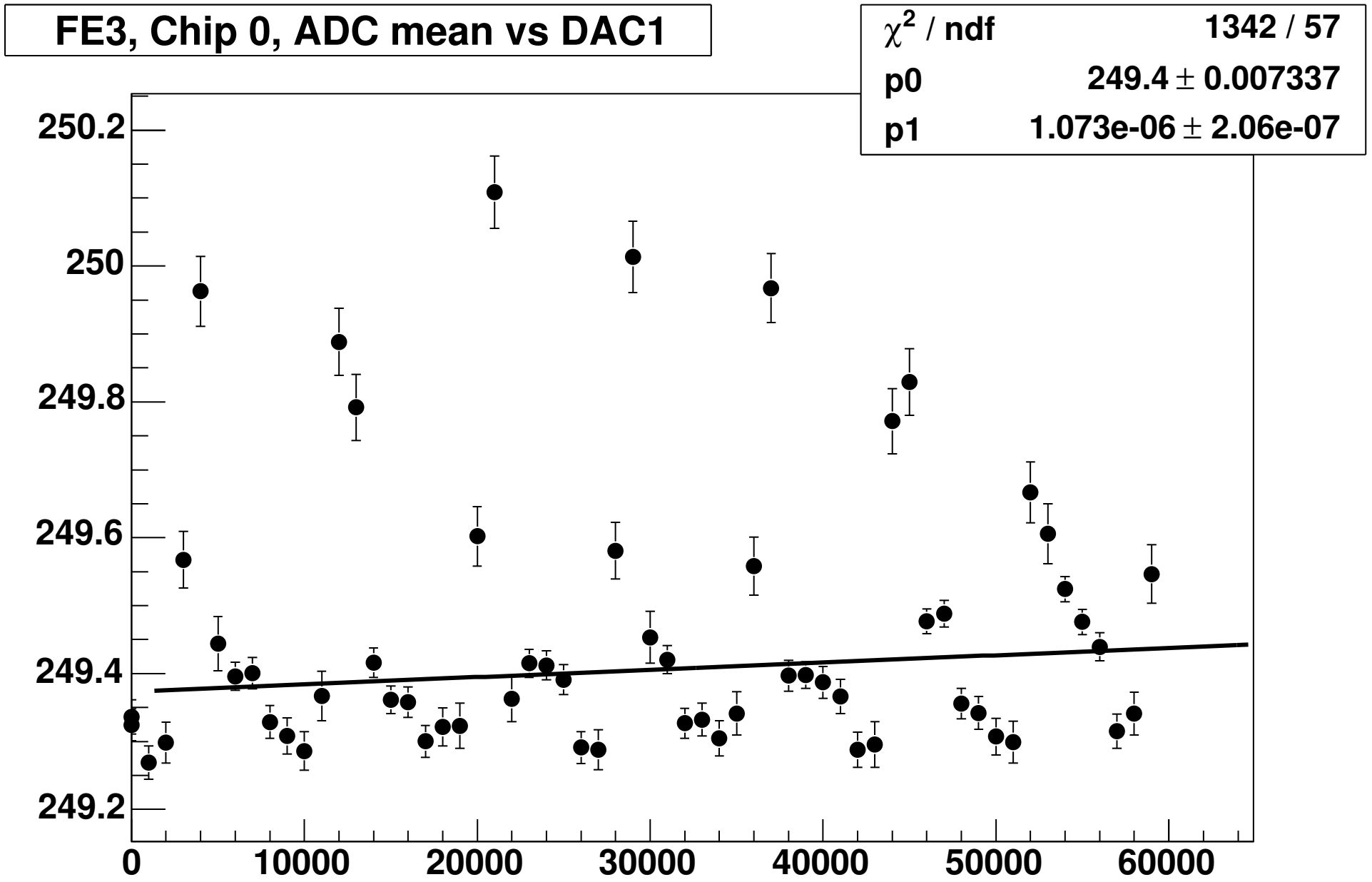

FE2, Chip 11, ADC noise vs DAC1
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0
10000
20000
30000
40000
50000
60000

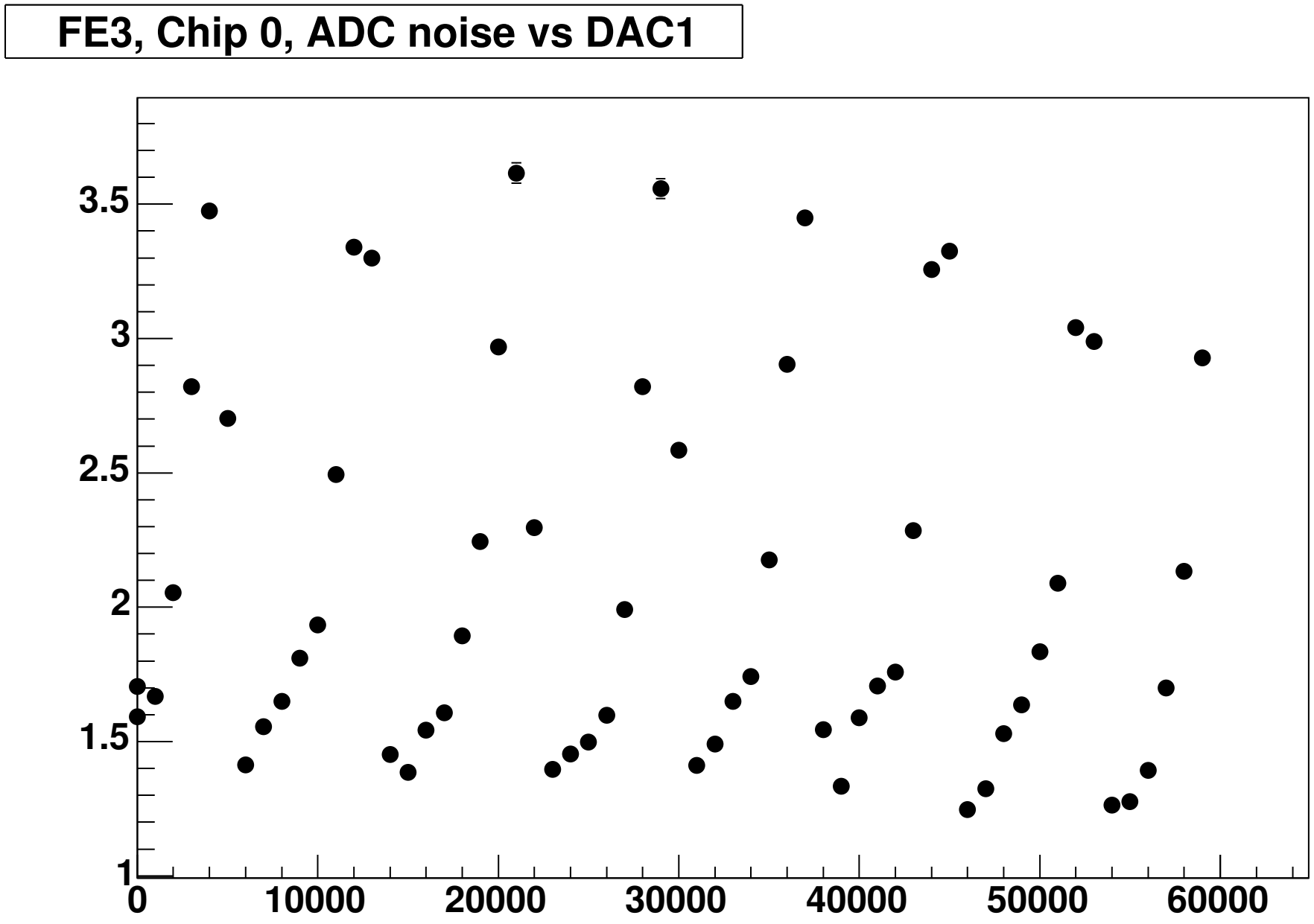

FE2, Chip 11, ADC residuals vs DAC1
1
0.5
0
-0.5
-1
0
10000
20000
30000
40000
50000
60000

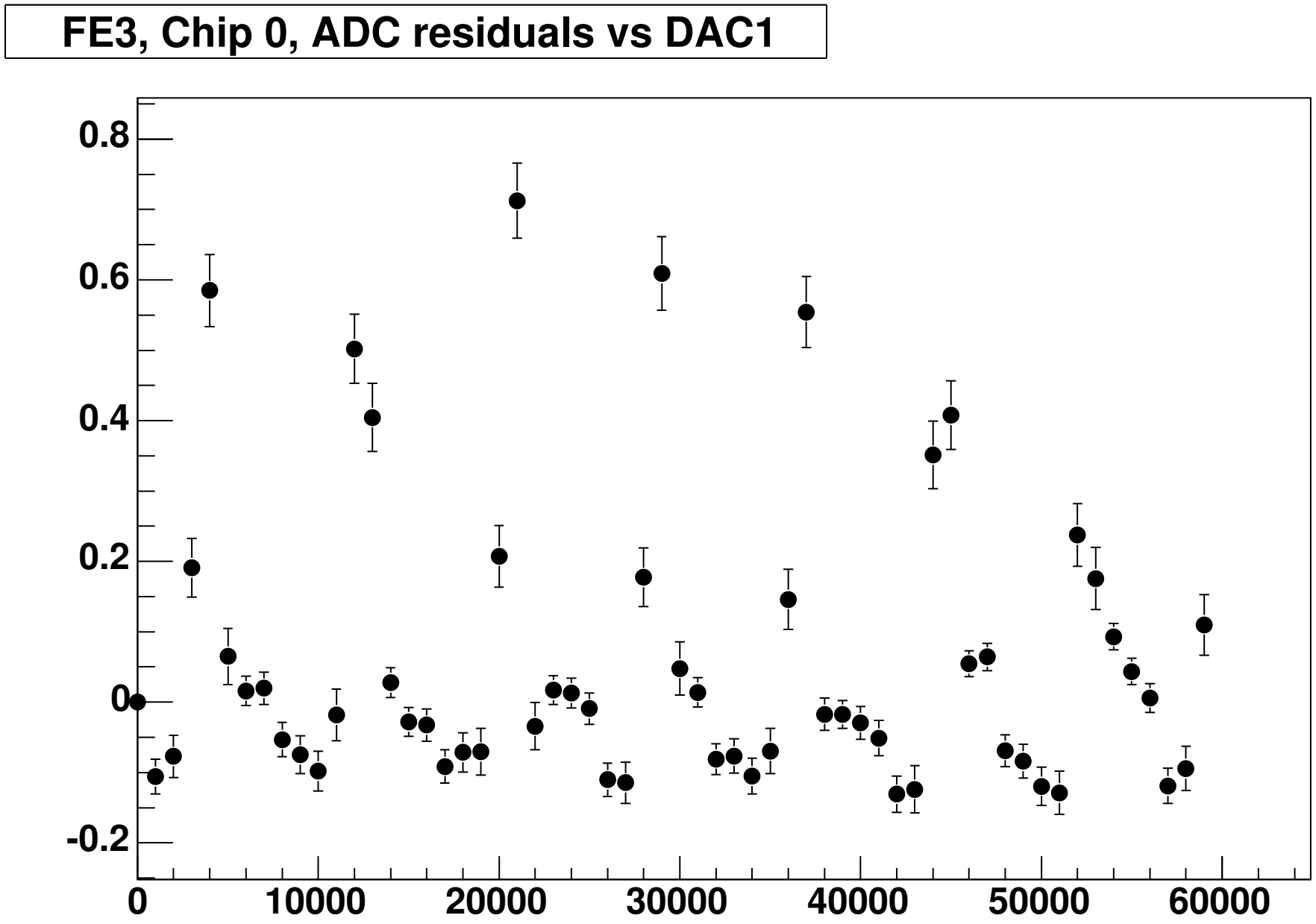

FE3, Chip 0, ADC mean vs DAC0
χ² / ndf 1.724e+05 / 57
p0 104.5 ± 0.007065
p1 0.2294 ± 2.395e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

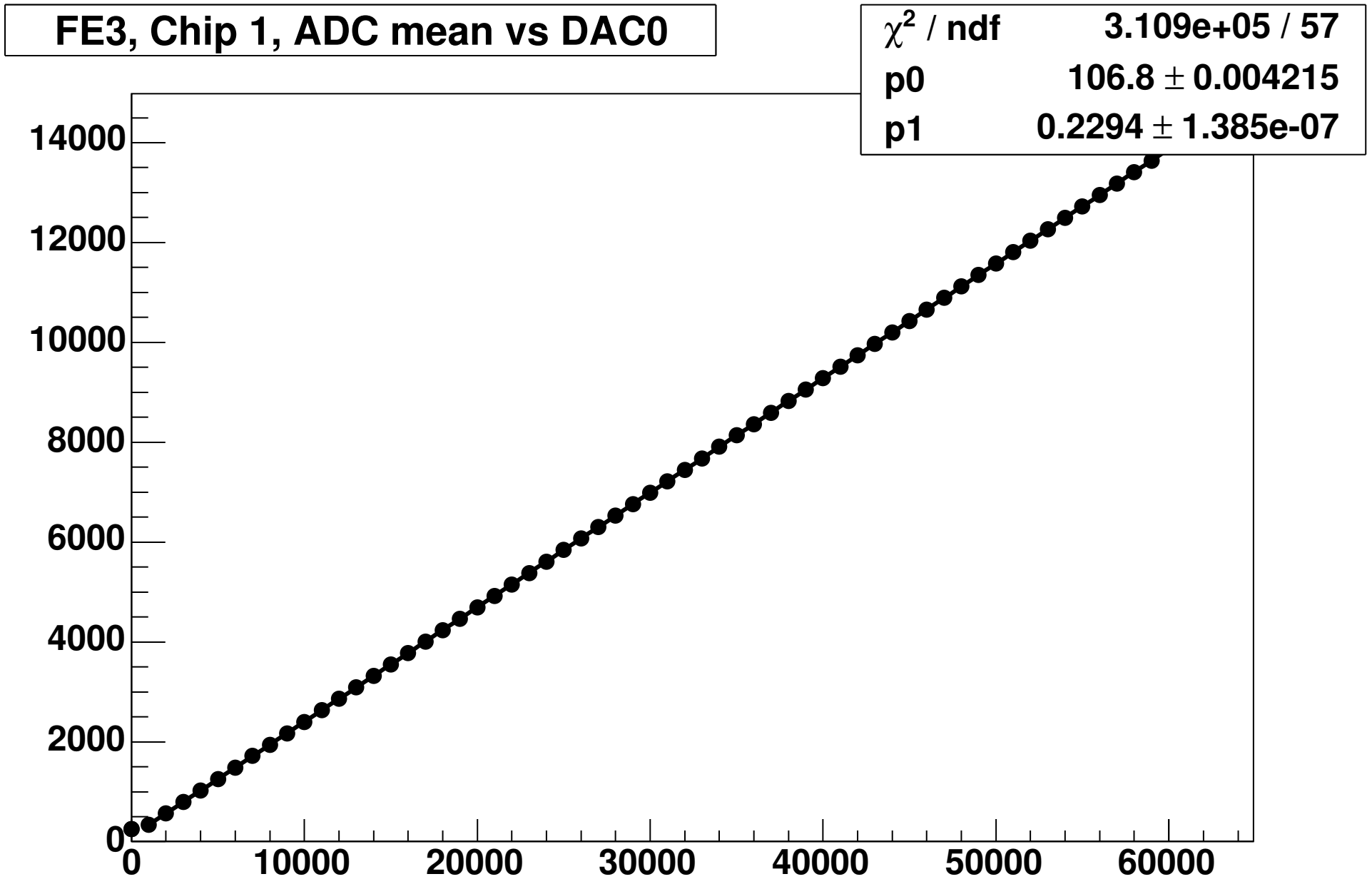

FE3, Chip 0, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

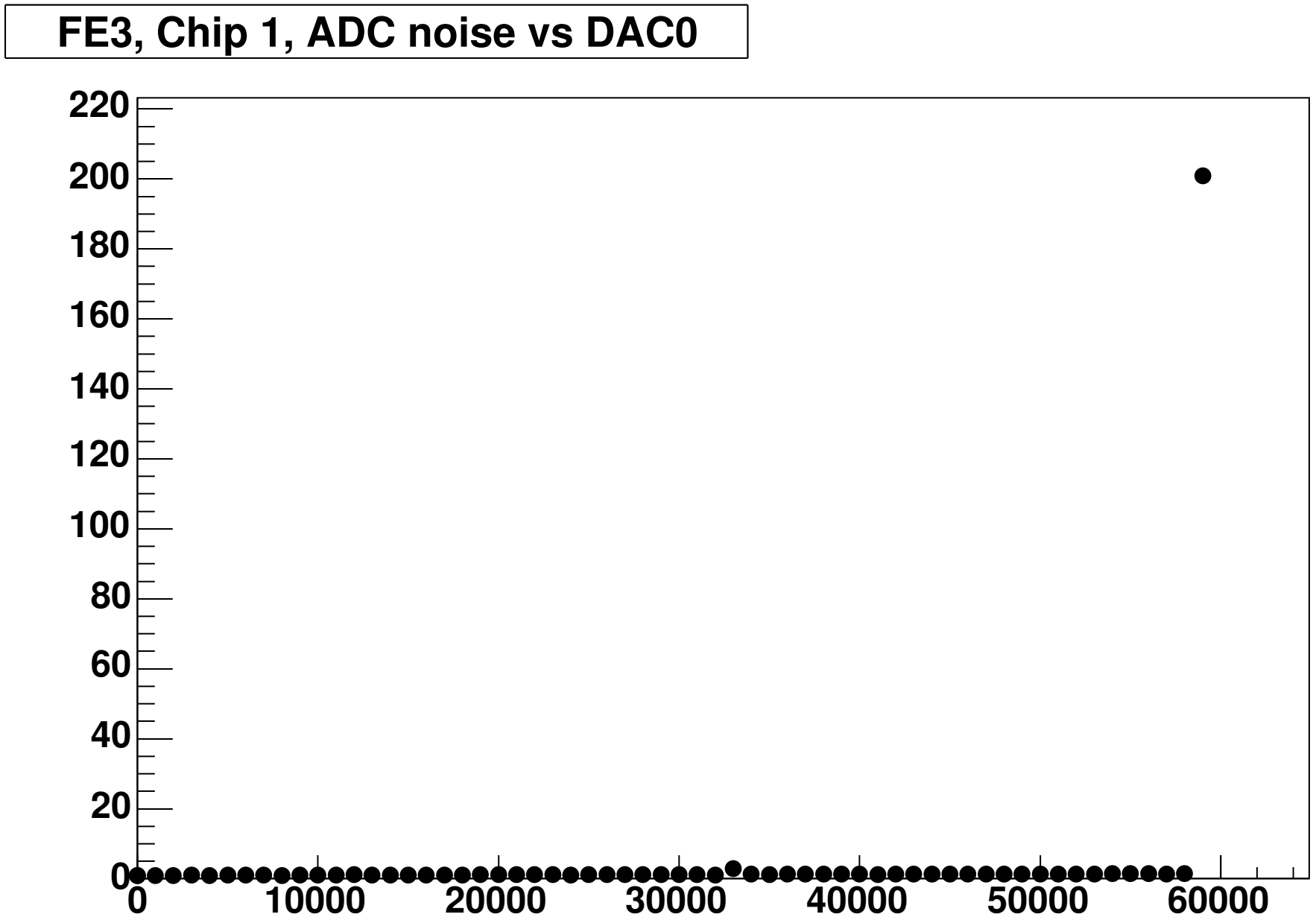

FE3, Chip 0, ADC residuals vs DAC0
6
4
2
0
-2
-4
-6
0
10000
20000
30000
40000
50000
60000


FE3, Chip 0, ADC mean vs DAC1
χ² / ndf 1342 / 57
p0 249.4 ± 0.007337
p1 1.073e-06 ± 2.06e-07
250.2
250
249.8
249.6
249.4
249.2
0
10000
20000
30000
40000
50000
60000

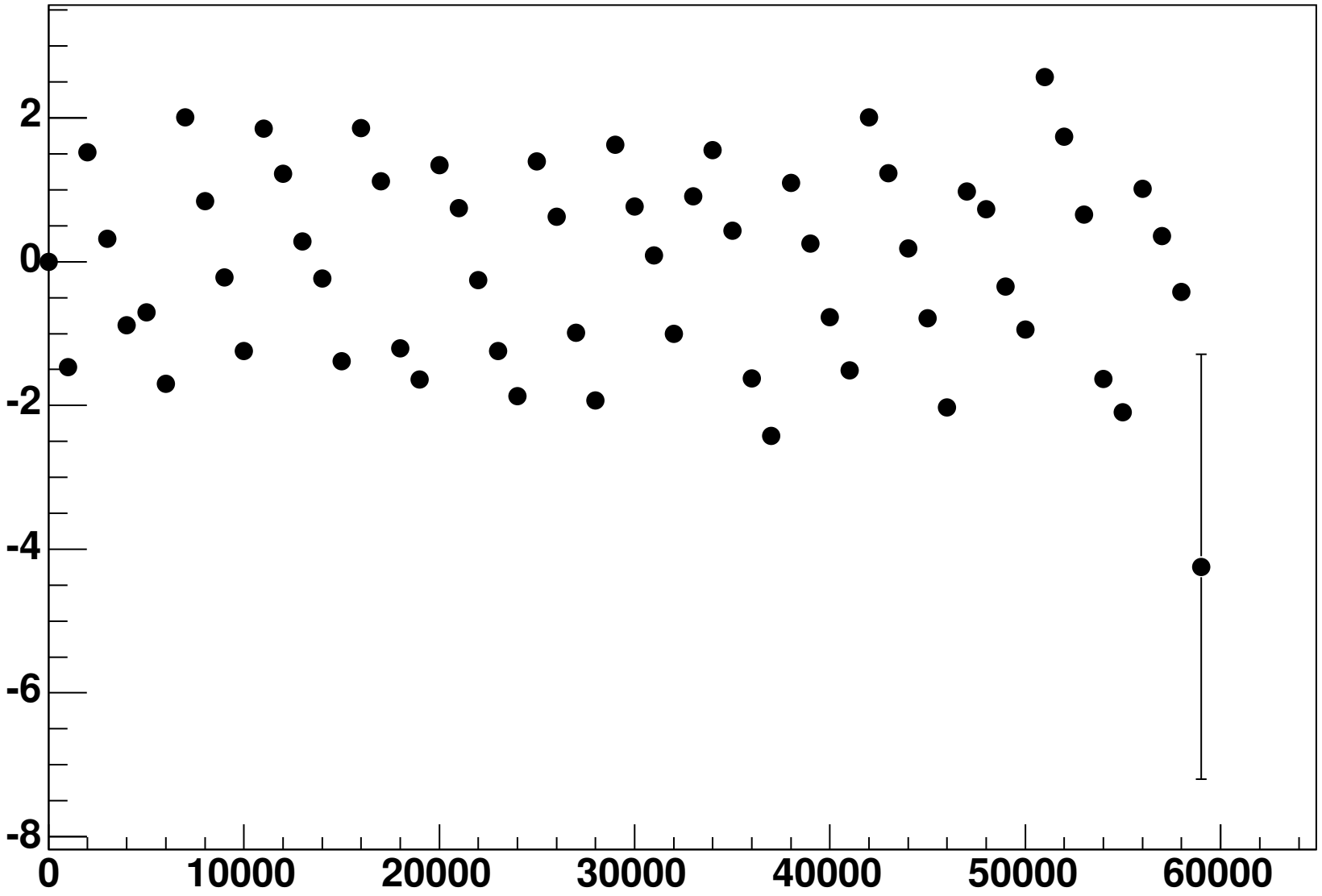

FE3, Chip 0, ADC noise vs DAC1
3.5
3
2.5
2
1.5
1
0
10000
20000
30000
40000
50000
60000

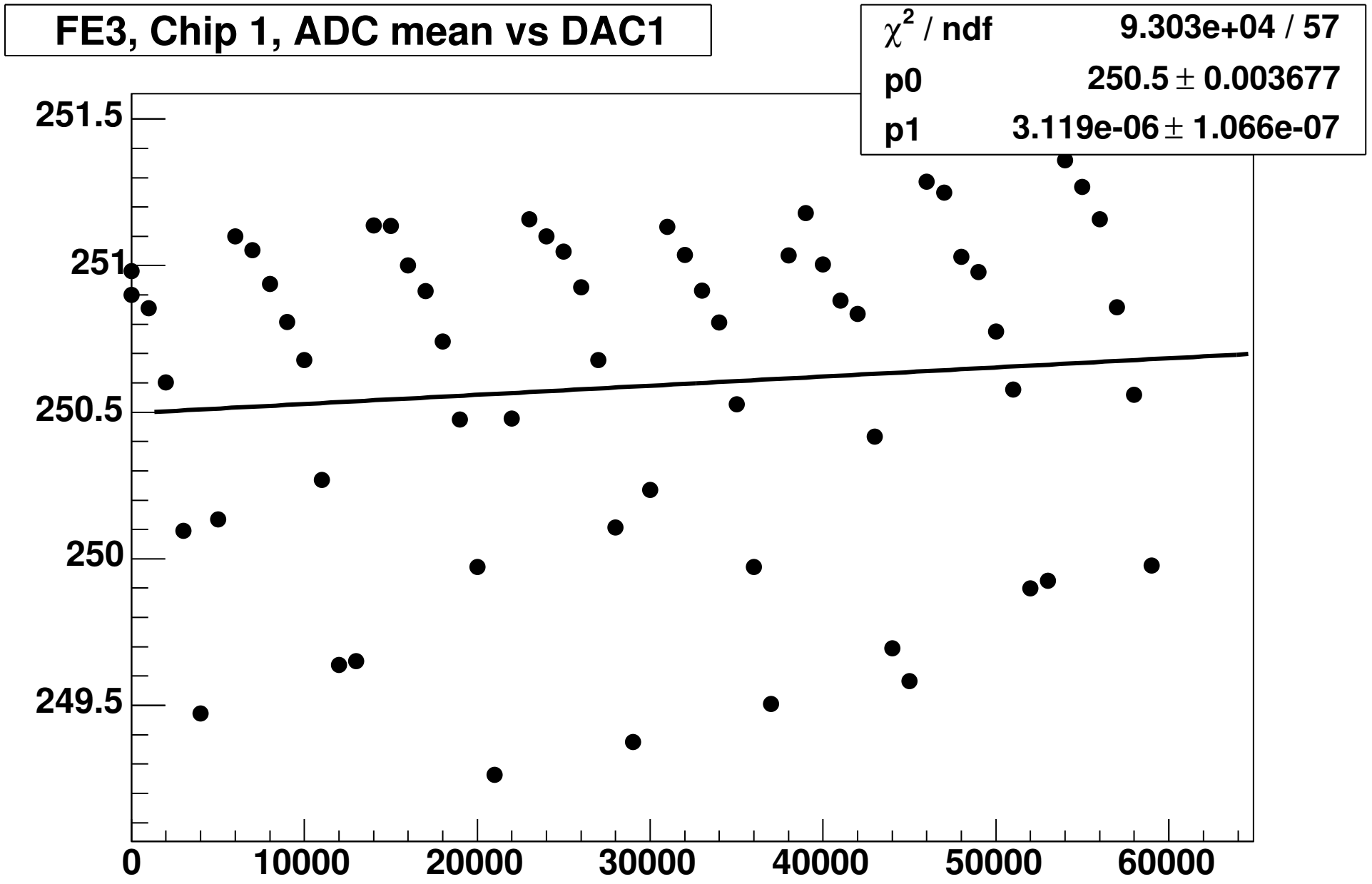

FE3, Chip 0, ADC residuals vs DAC1
0.8
0.6
0.4
0.2
0
-0.2
0
10000
20000
30000
40000
50000
60000

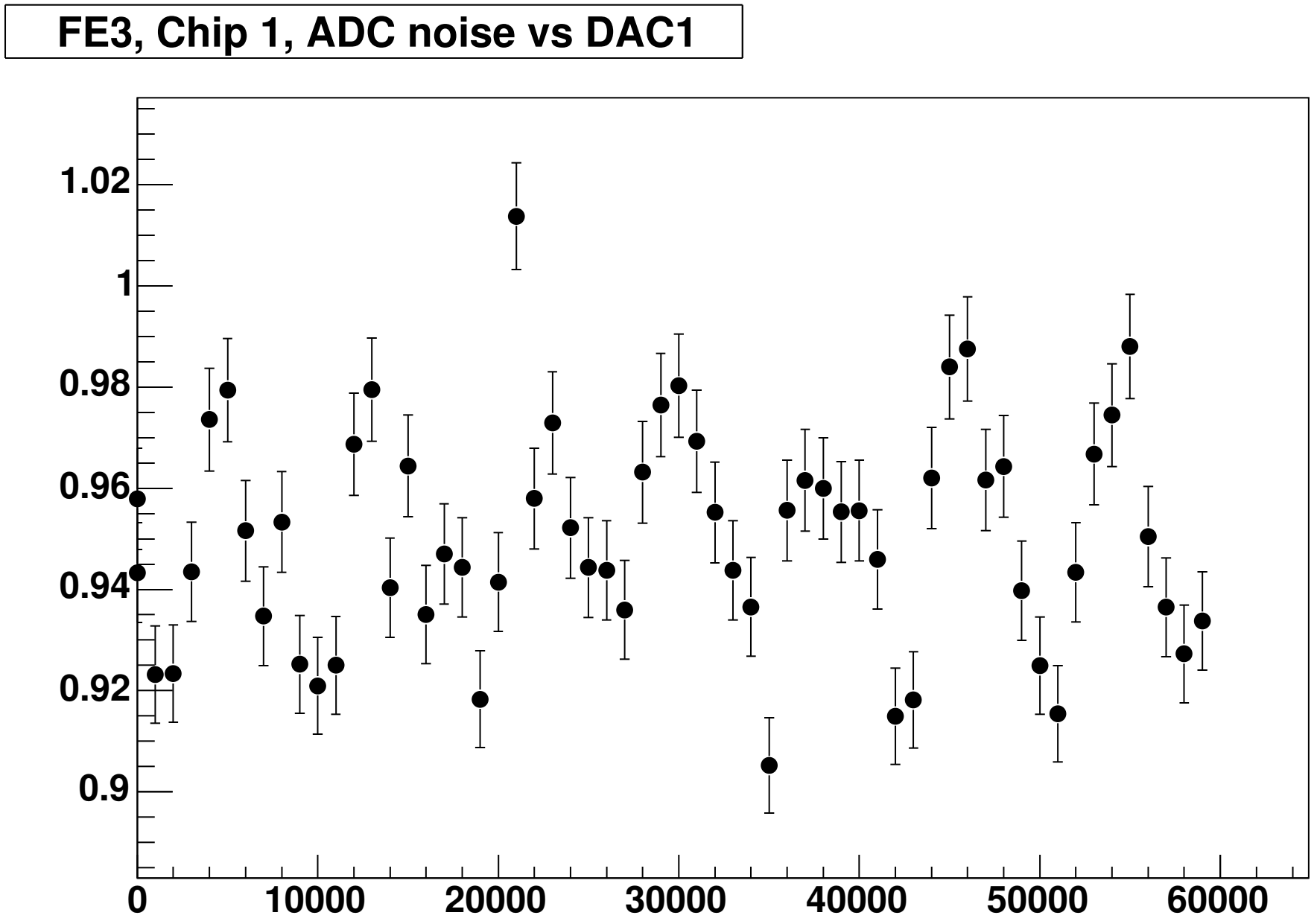

FE3, Chip 1, ADC mean vs DAC0
χ² / ndf 3.109e+05 / 57
p0 106.8 ± 0.004215
p1 0.2294 ± 1.385e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

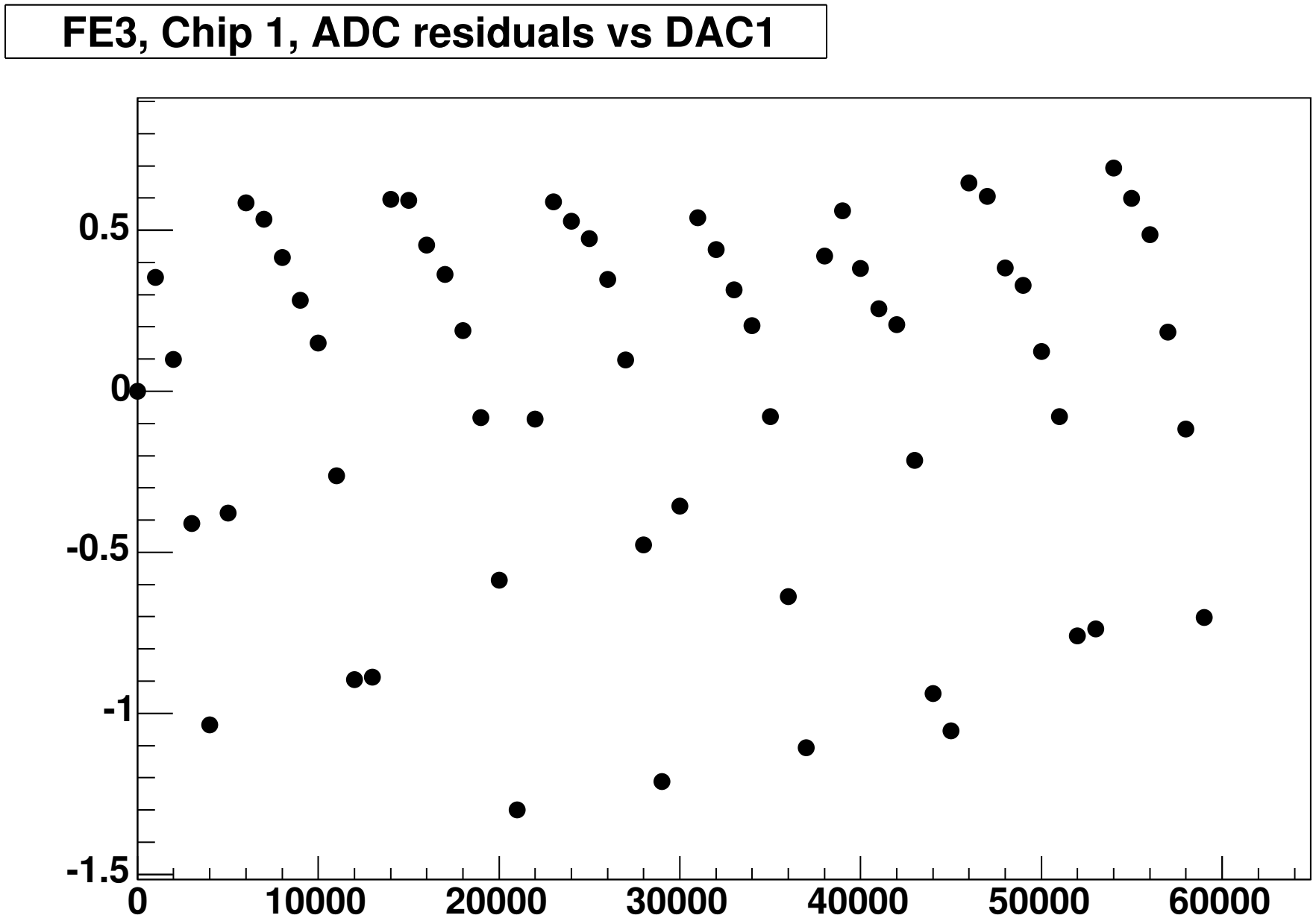

FE3, Chip 1, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

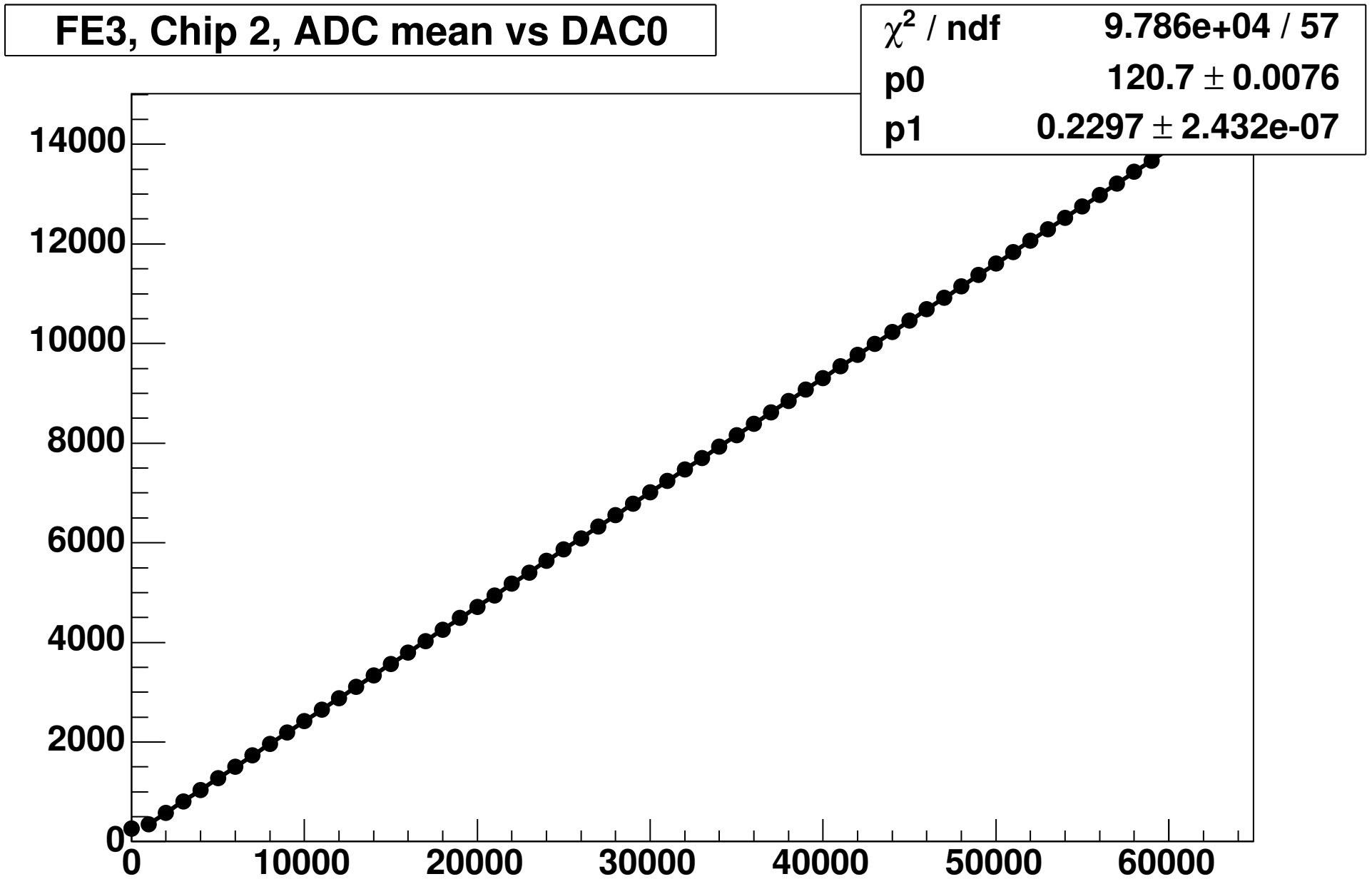
FE3, Chip 1, ADC residuals vs DAC0

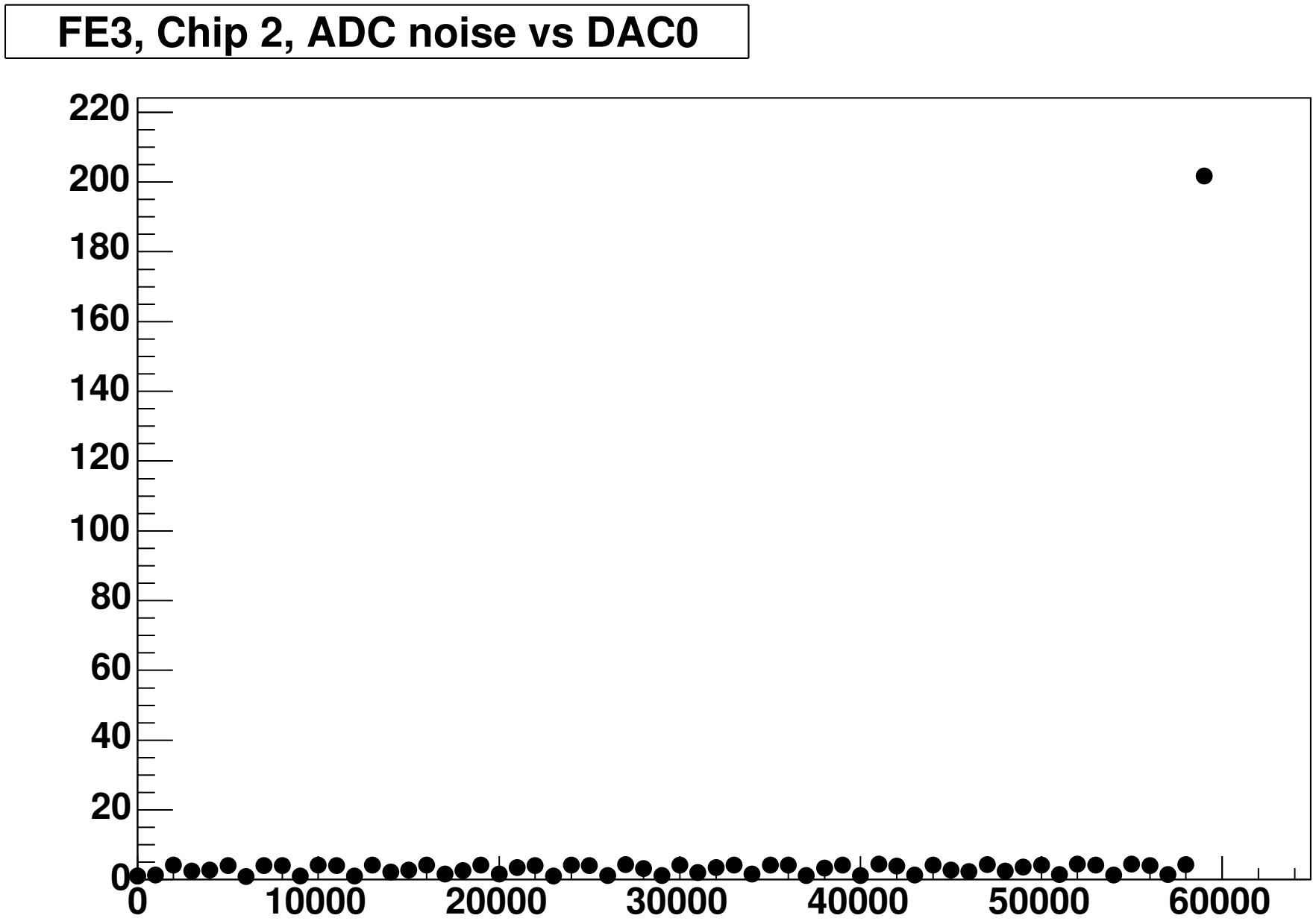


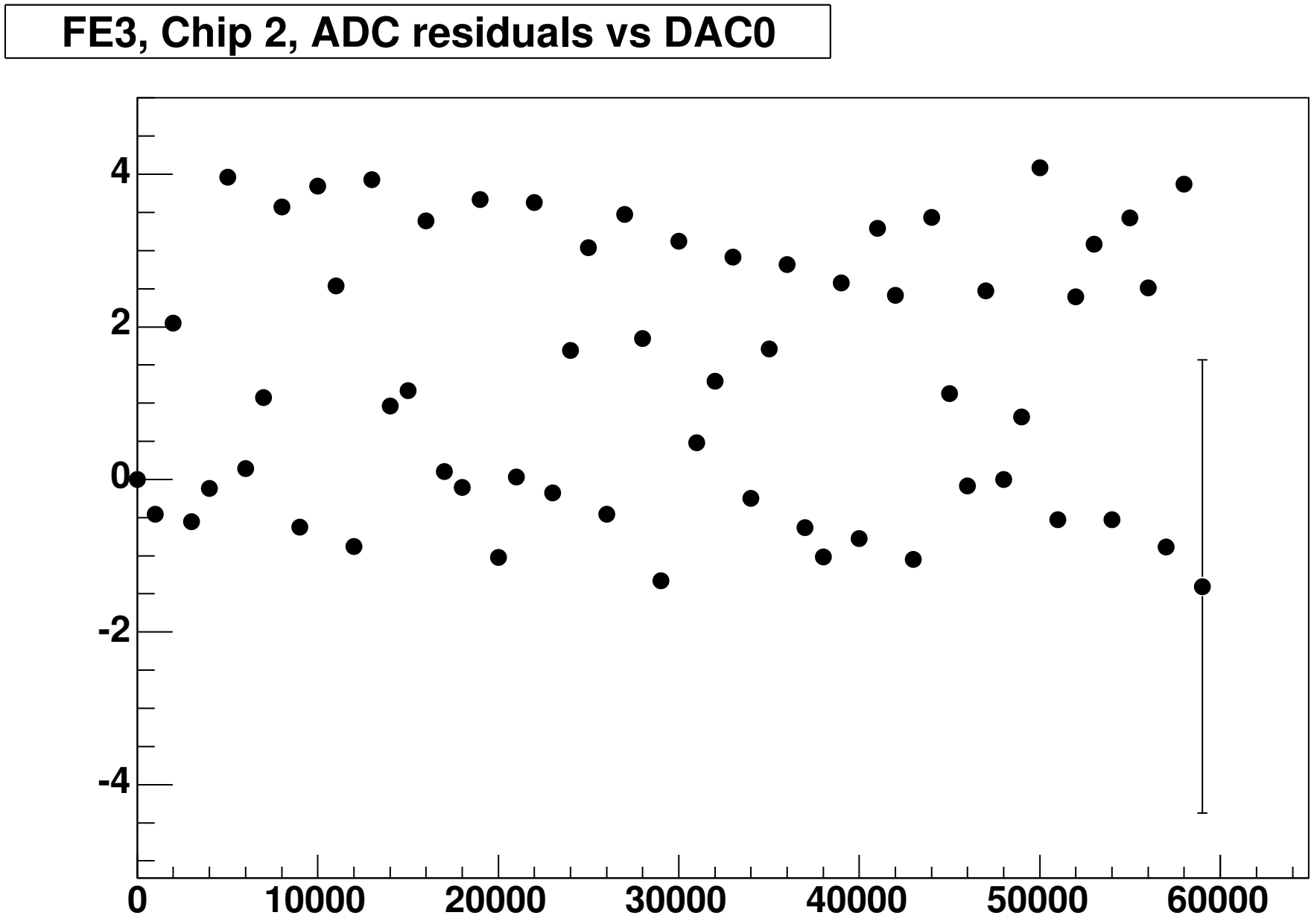

FE3, Chip 1, ADC mean vs DAC1
χ² / ndf 9.303e+04 / 57
p0 250.5 ± 0.003677
p1 3.119e-06 ± 1.066e-07
251.5
251
250.5
250
249.5
0
10000
20000
30000
40000
50000
60000

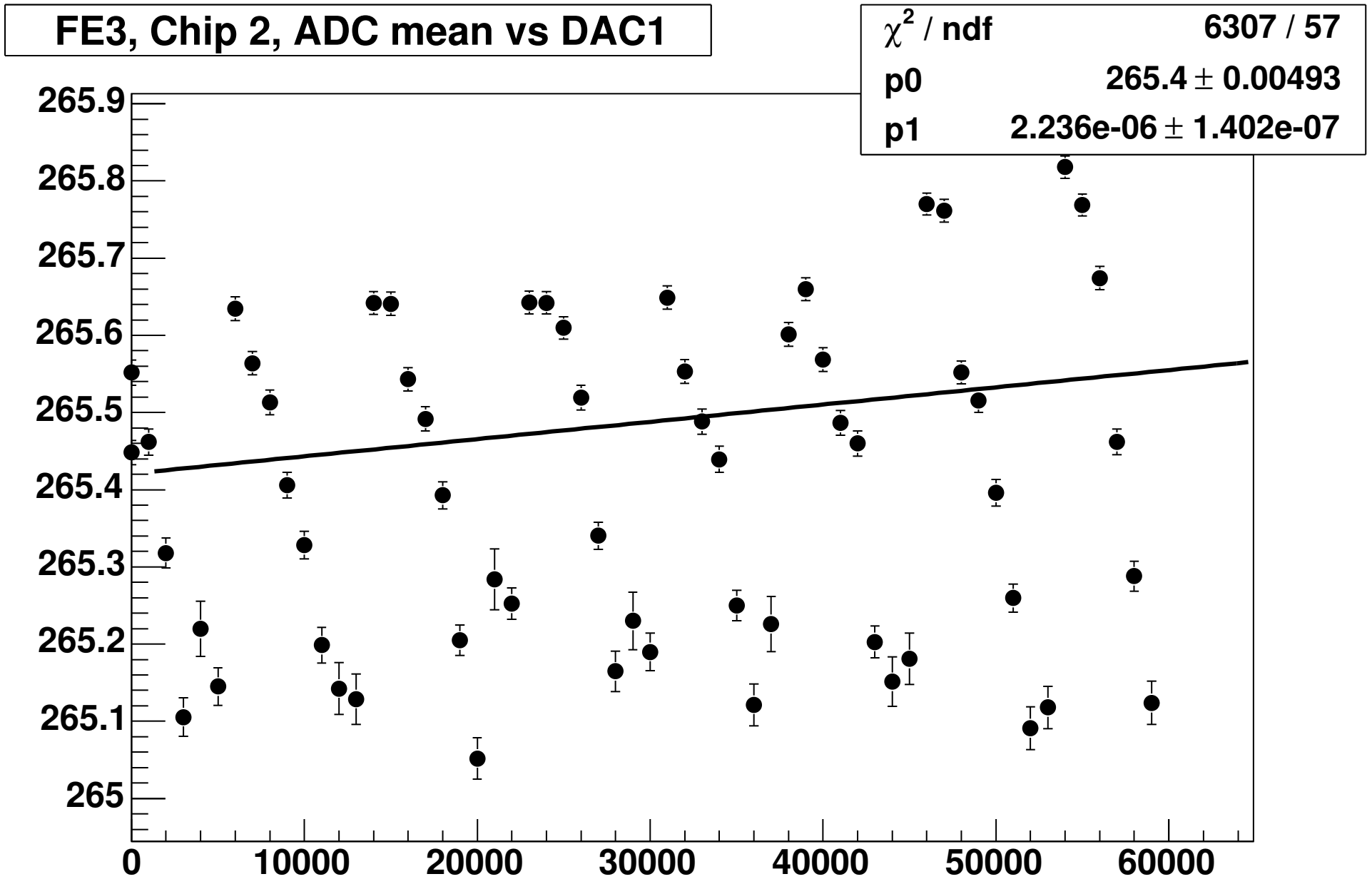

FE3, Chip 1, ADC noise vs DAC1
1.02
1
0.98
0.96
0.94
0.92
0.9
0
10000
20000
30000
40000
50000
60000

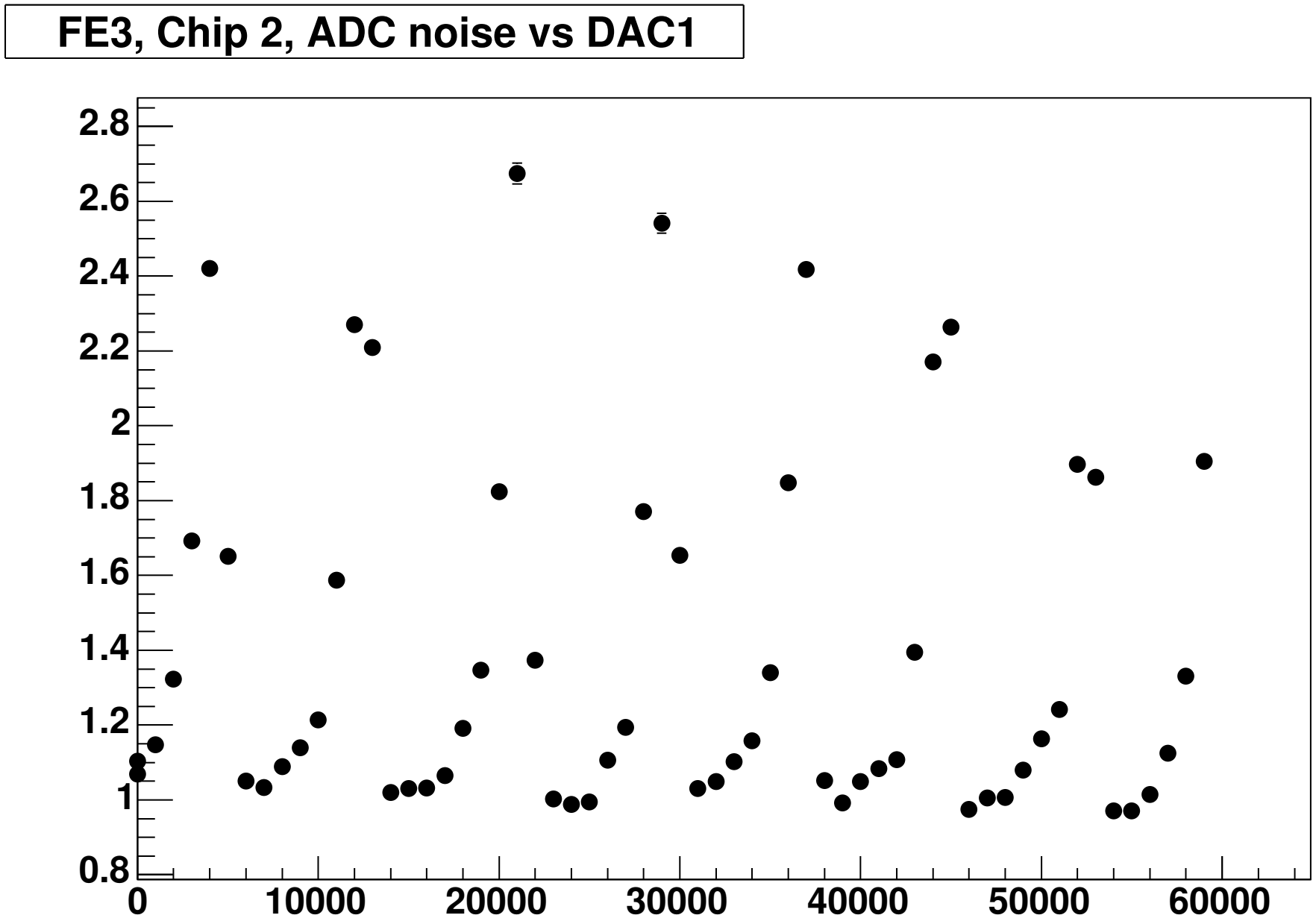

FE3, Chip 1, ADC residuals vs DAC1
0.5
0
-0.5
-1
-1.5
0
10000
20000
30000
40000
50000
60000

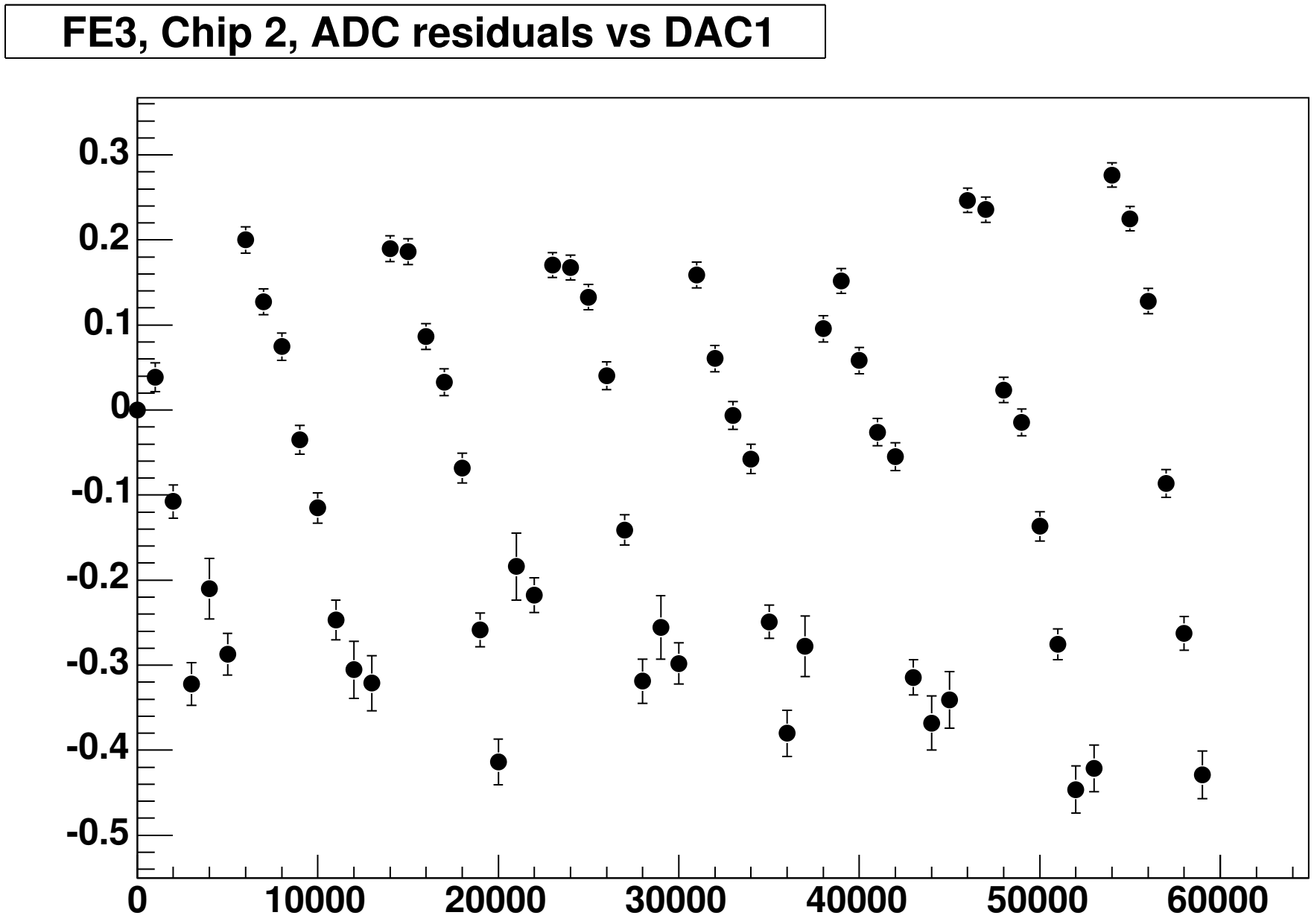

FE3, Chip 2, ADC mean vs DAC0
χ² / ndf 9.786e+04 / 57
p0 120.7 ± 0.0076
p1 0.2297 ± 2.432e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

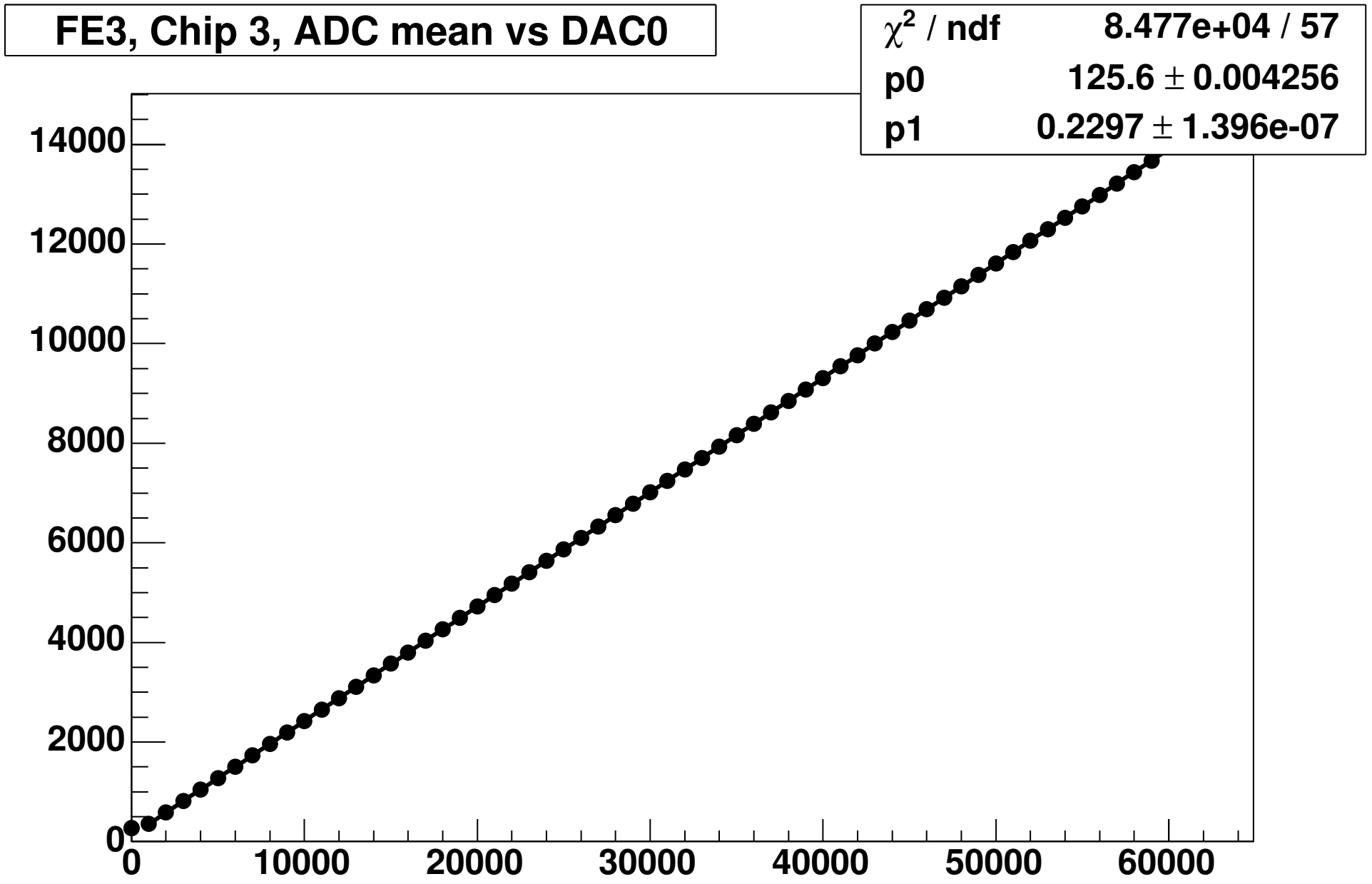

FE3, Chip 2, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

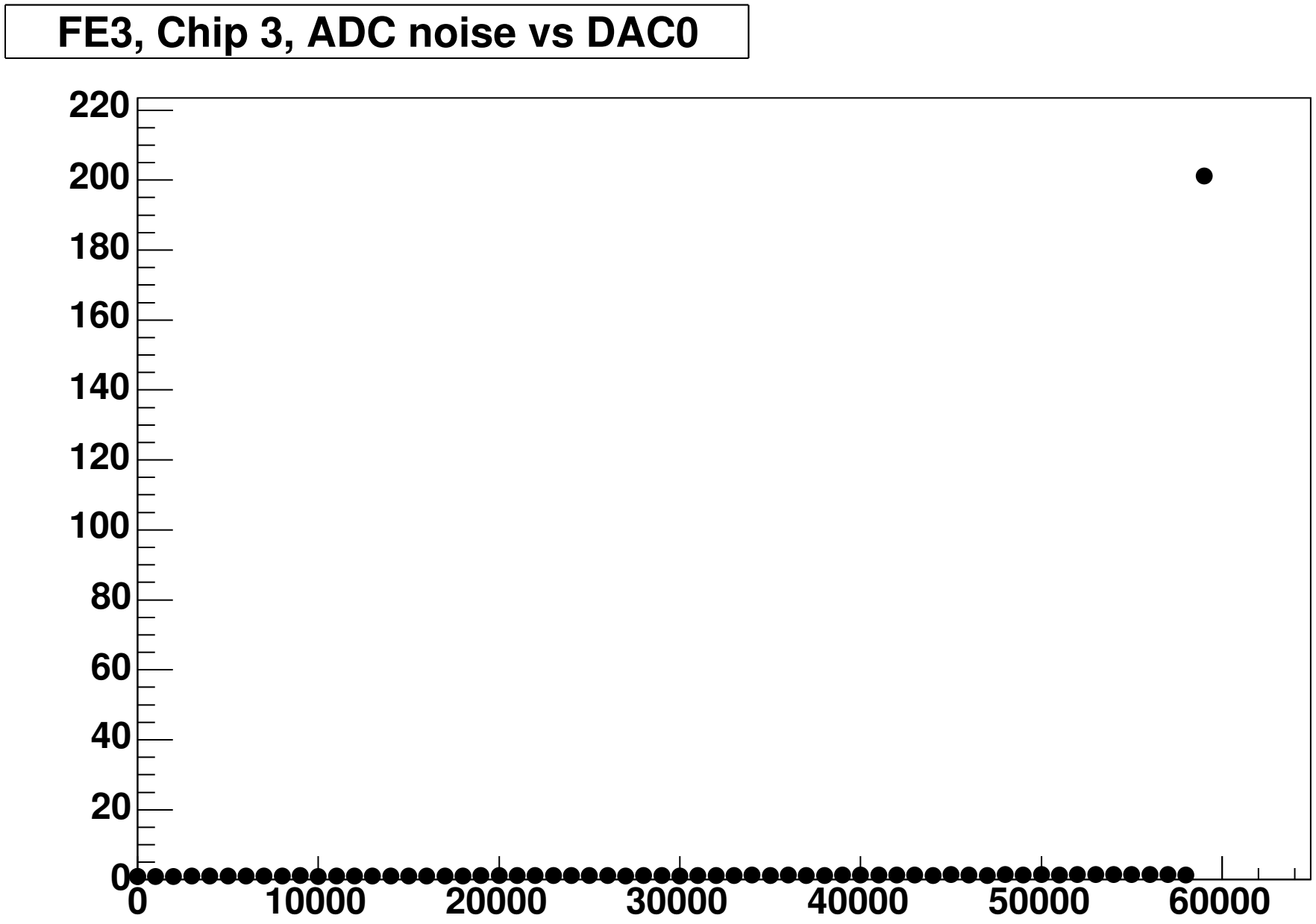

FE3, Chip 2, ADC residuals vs DAC0
4
2
0
-2
-4
0
10000
20000
30000
40000
50000
60000

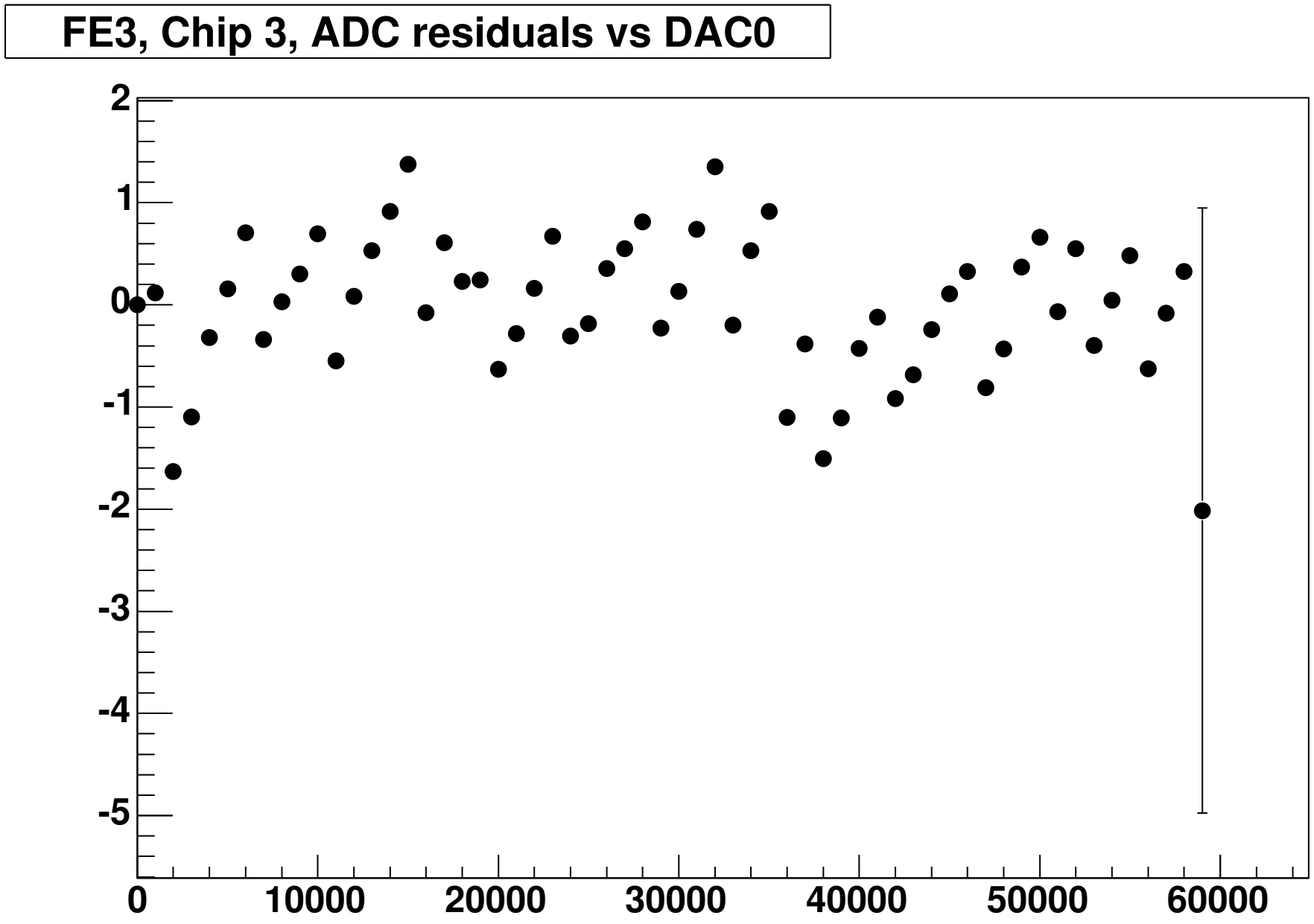

FE3, Chip 2, ADC mean vs DAC1
χ² / ndf 6307 / 57
p0 265.4 ± 0.00493
p1 2.236e-06 ± 1.402e-07
265.9
265.8
265.7
265.6
265.5
265.4
265.3
265.2
265.1
265
0
10000
20000
30000
40000
50000
60000

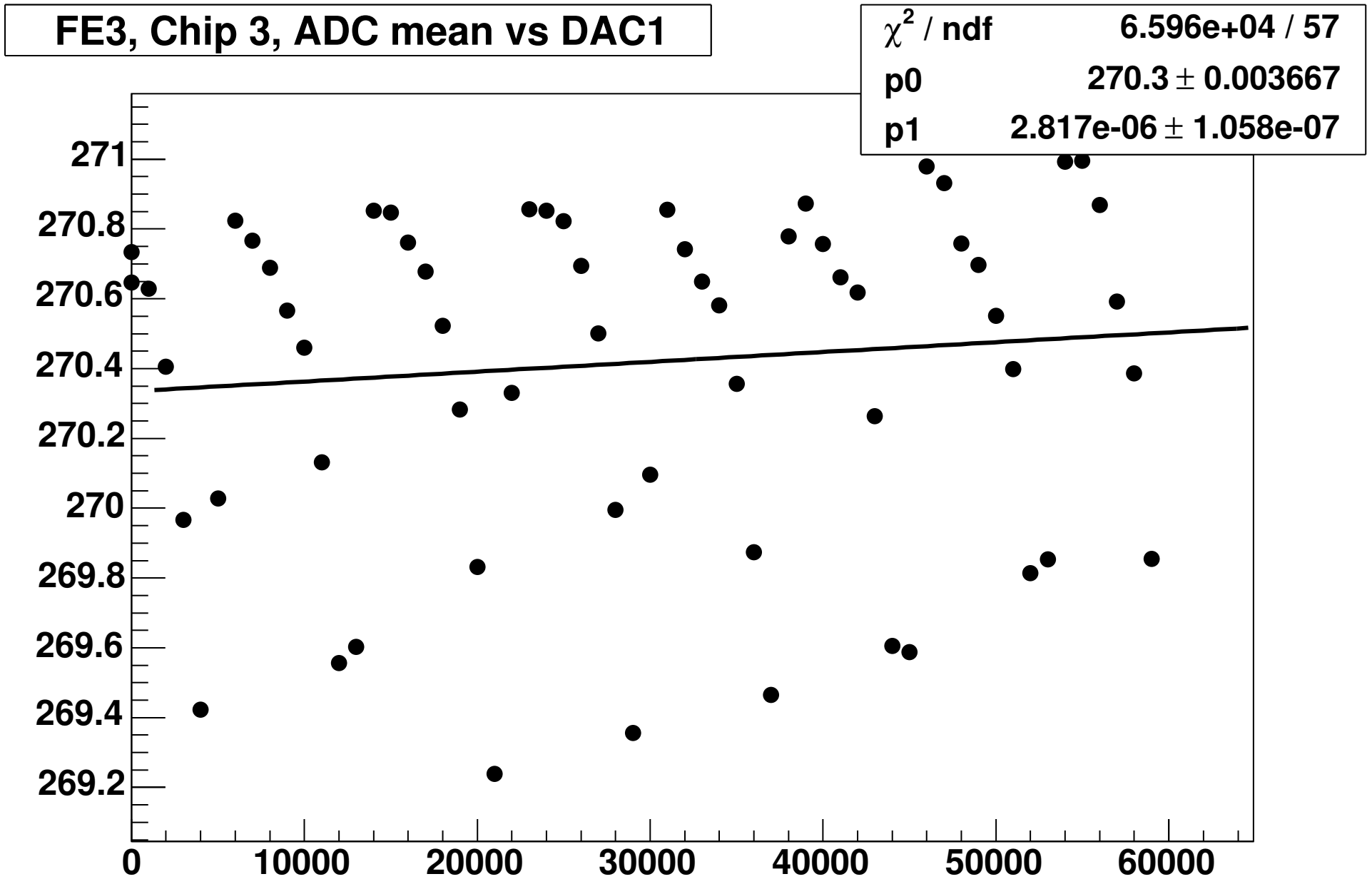

FE3, Chip 2, ADC noise vs DAC1
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0
10000
20000
30000
40000
50000
60000

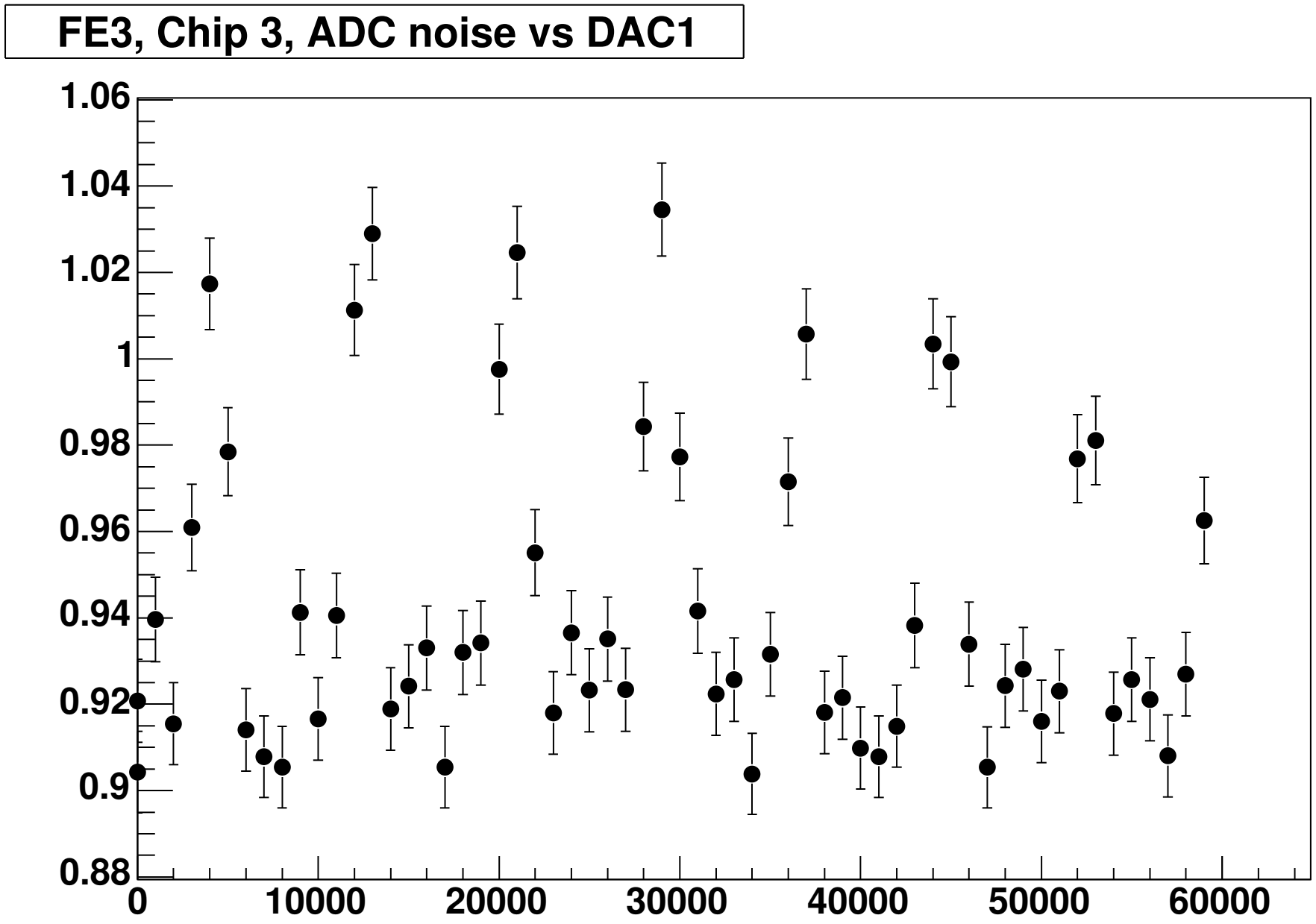

FE3, Chip 2, ADC residuals vs DAC1
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
0
10000
20000
30000
40000
50000
60000

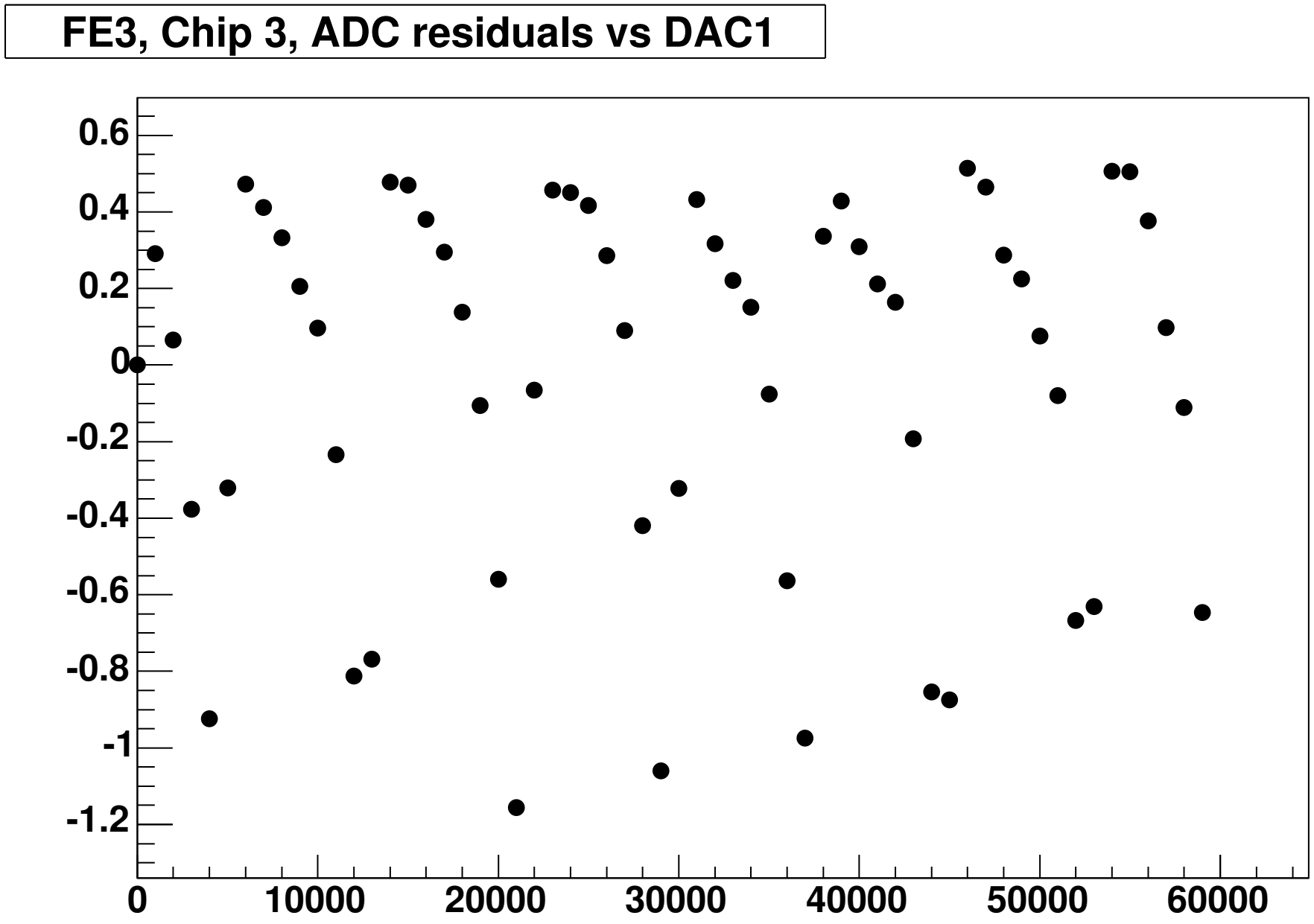

FE3, Chip 3, ADC mean vs DAC0
χ² / ndf 8.477e+04 / 57
p0 125.6 ± 0.004256
p1 0.2297 ± 1.396e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

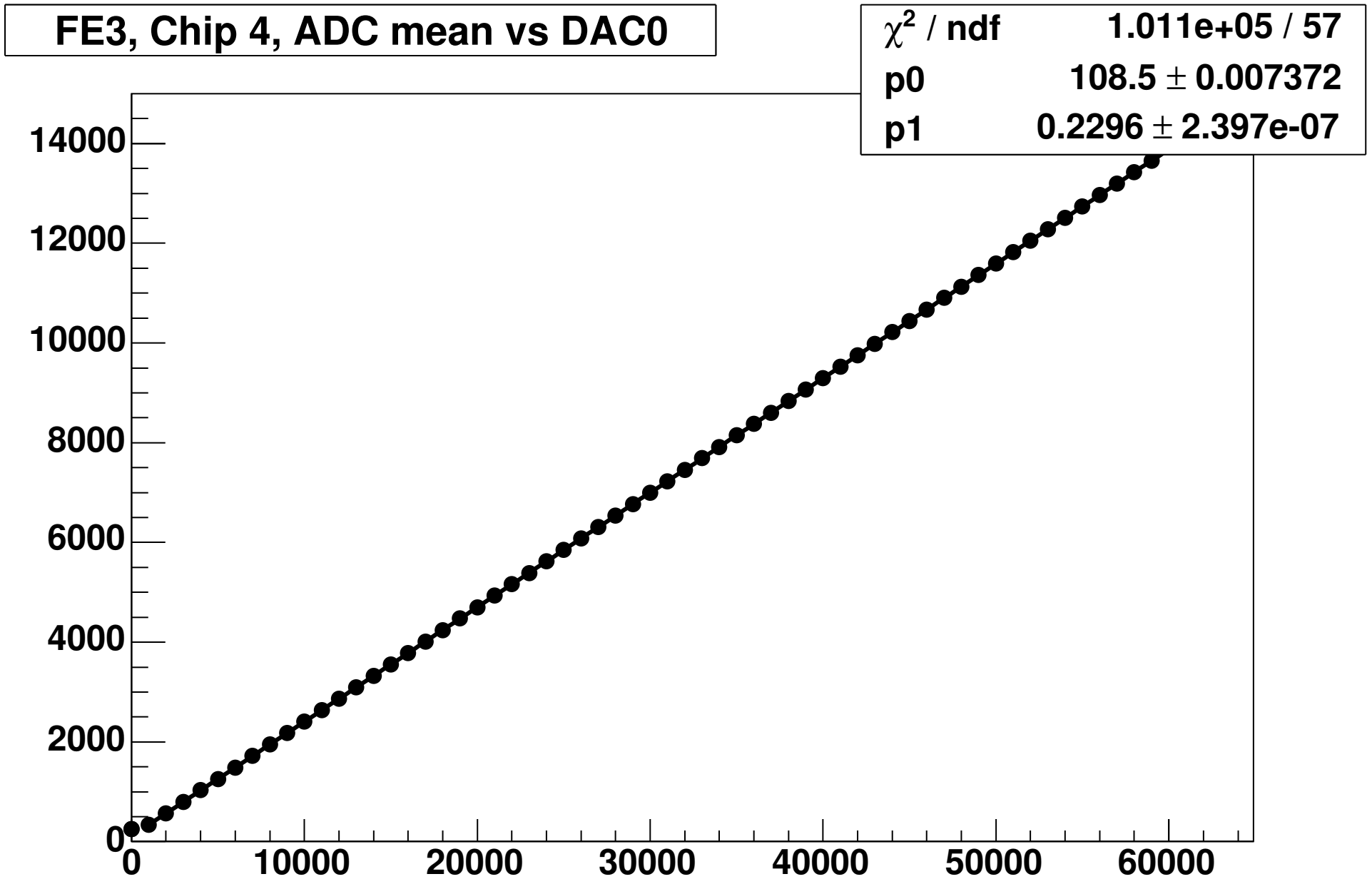

FE3, Chip 3, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

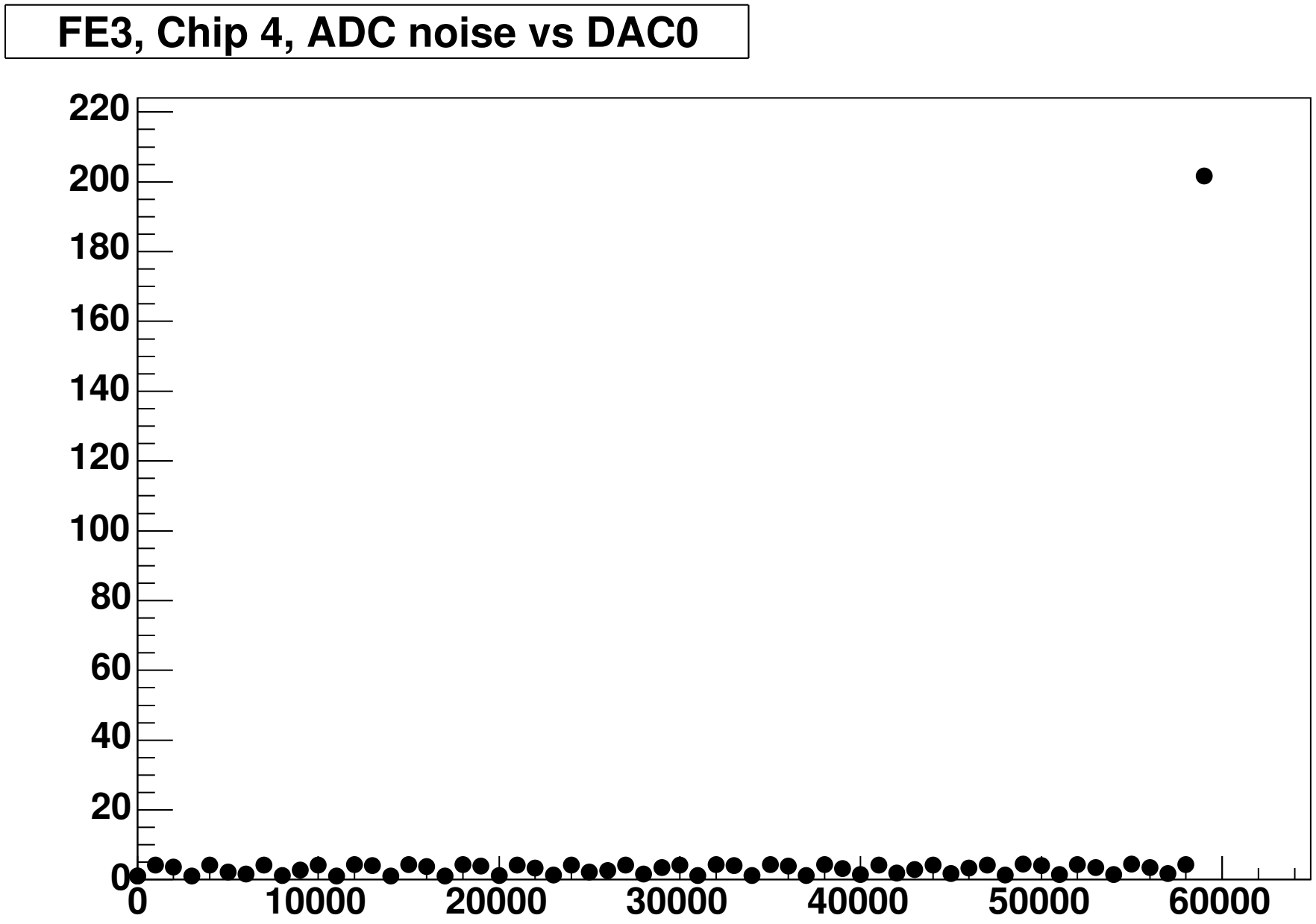

FE3, Chip 3, ADC residuals vs DAC0
2
1
0
-1
-2
-3
-4
-5
0
10000
20000
30000
40000
50000
60000

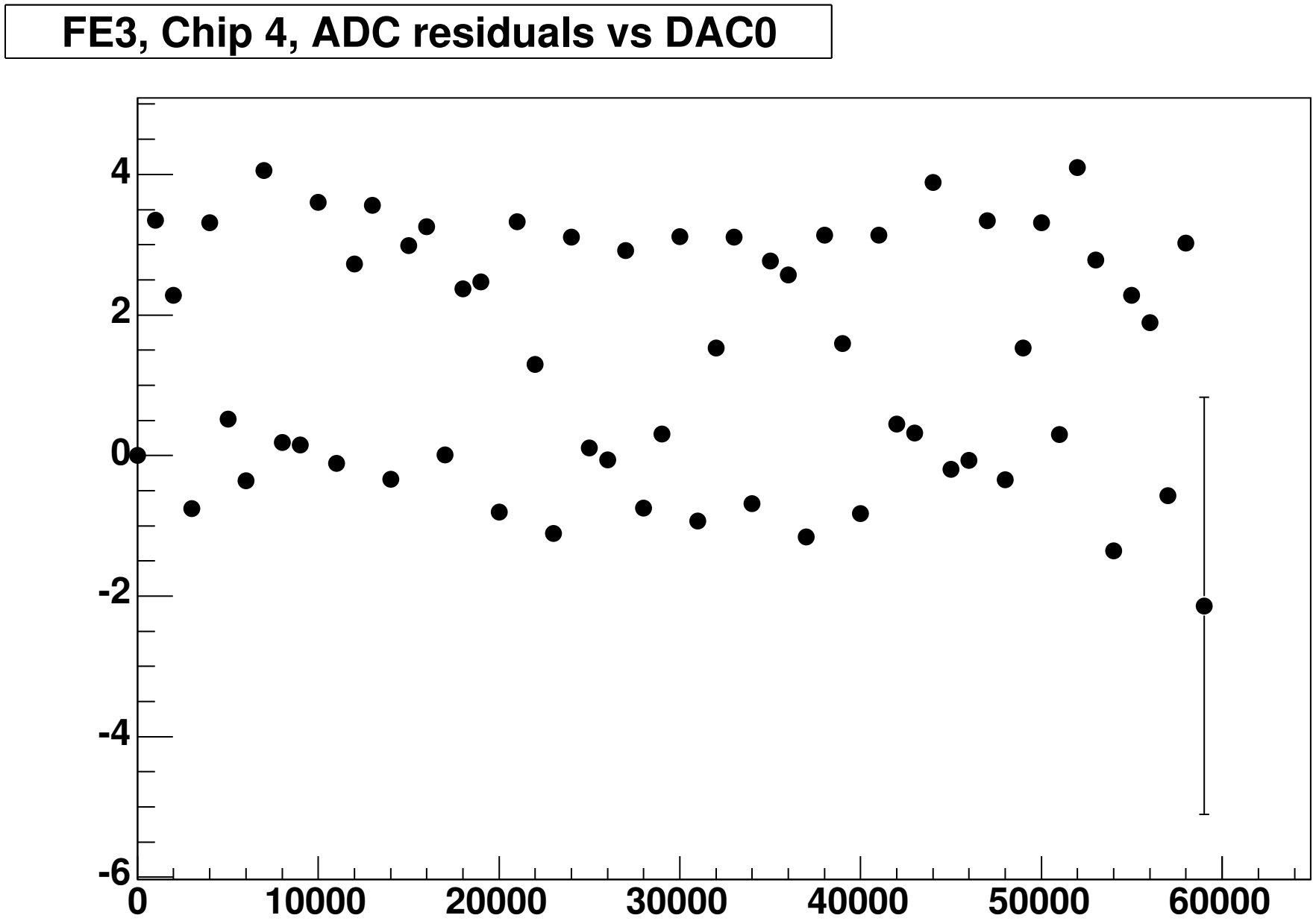

FE3, Chip 3, ADC mean vs DAC1
χ² / ndf 6.596e+04 / 57
p0 270.3 ± 0.003667
p1 2.817e-06 ± 1.058e-07
271
270.8
270.6
270.4
270.2
270
269.8
269.6
269.4
269.2
0
10000
20000
30000
40000
50000
60000

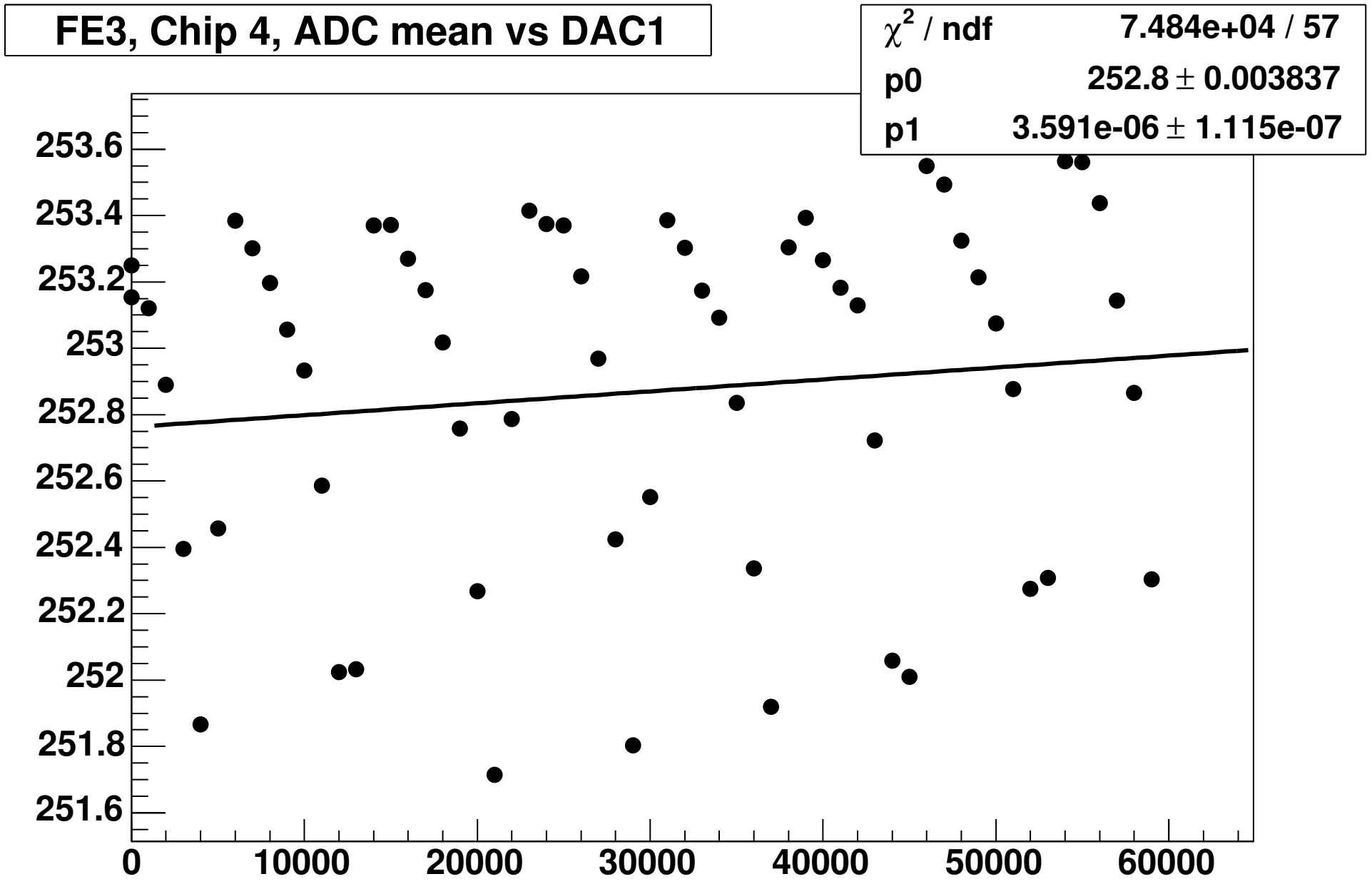

FE3, Chip 3, ADC noise vs DAC1
1.06
1.04
1.02
1
0.98
0.96
0.94
0.92
0.9
0.88
0
10000
20000
30000
40000
50000
60000

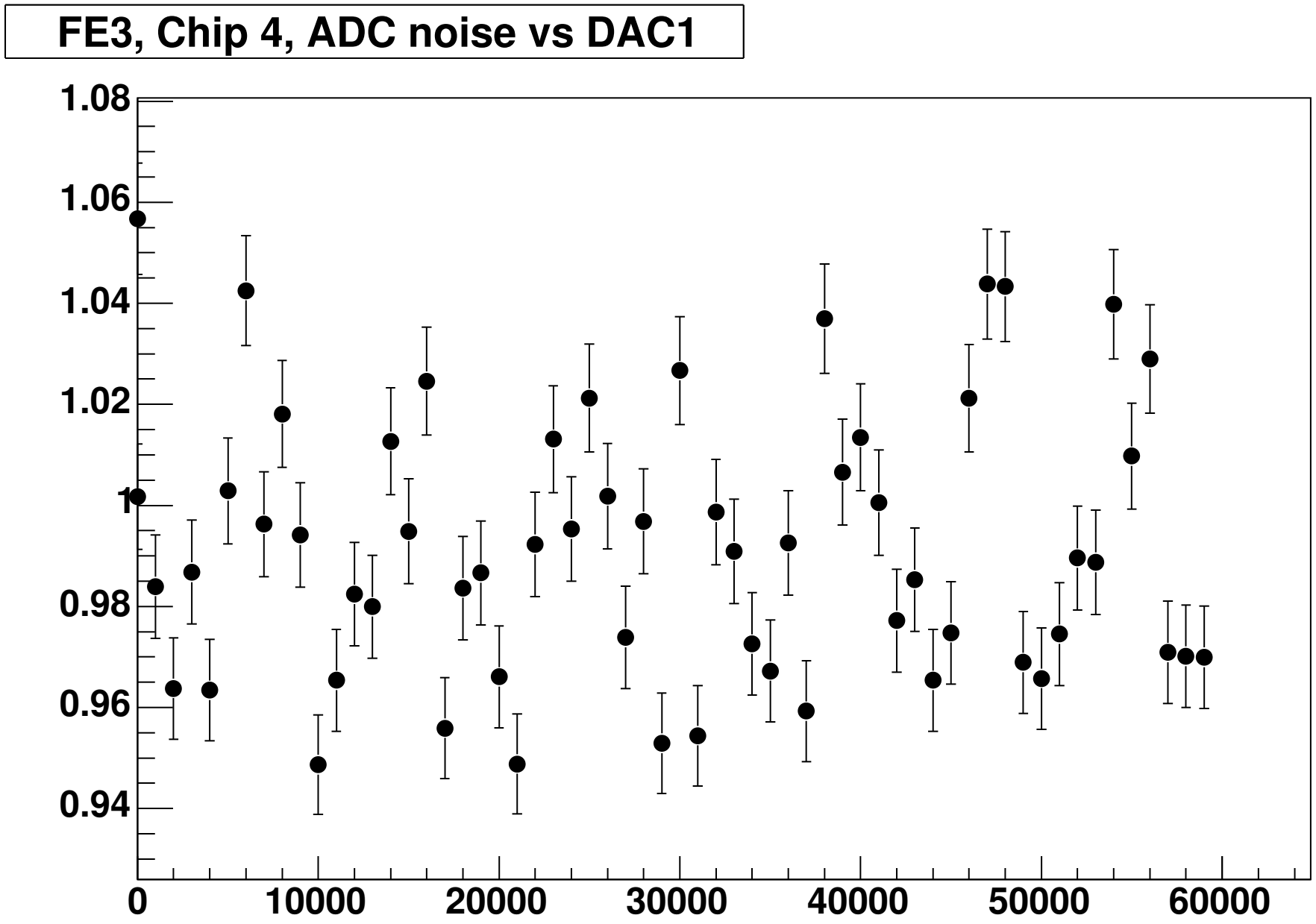

FE3, Chip 3, ADC residuals vs DAC1
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
0
10000
20000
30000
40000
50000
60000

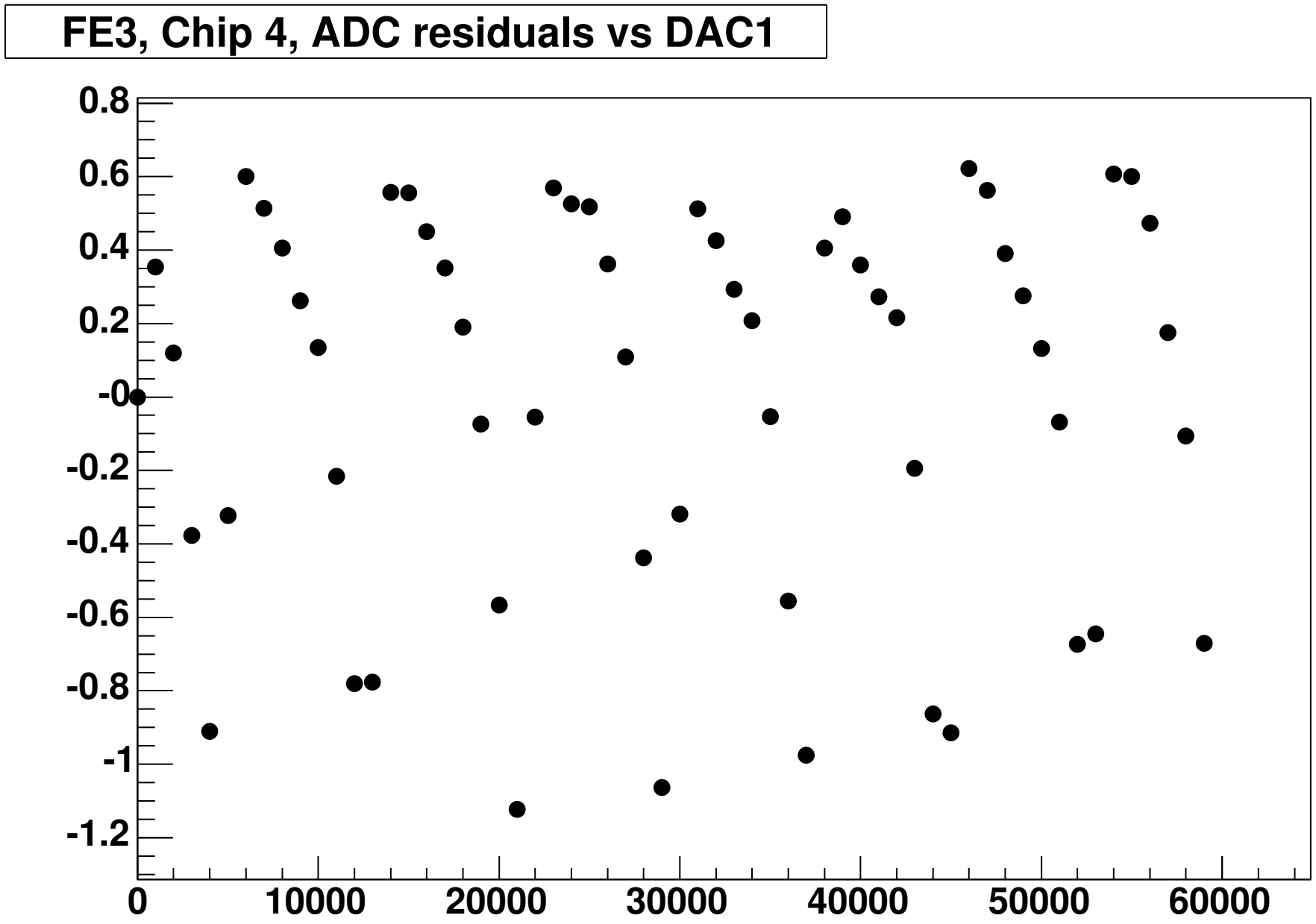

FE3, Chip 4, ADC mean vs DAC0
χ² / ndf 1.011e+05 / 57
p0 108.5 ± 0.007372
p1 0.2296 ± 2.397e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

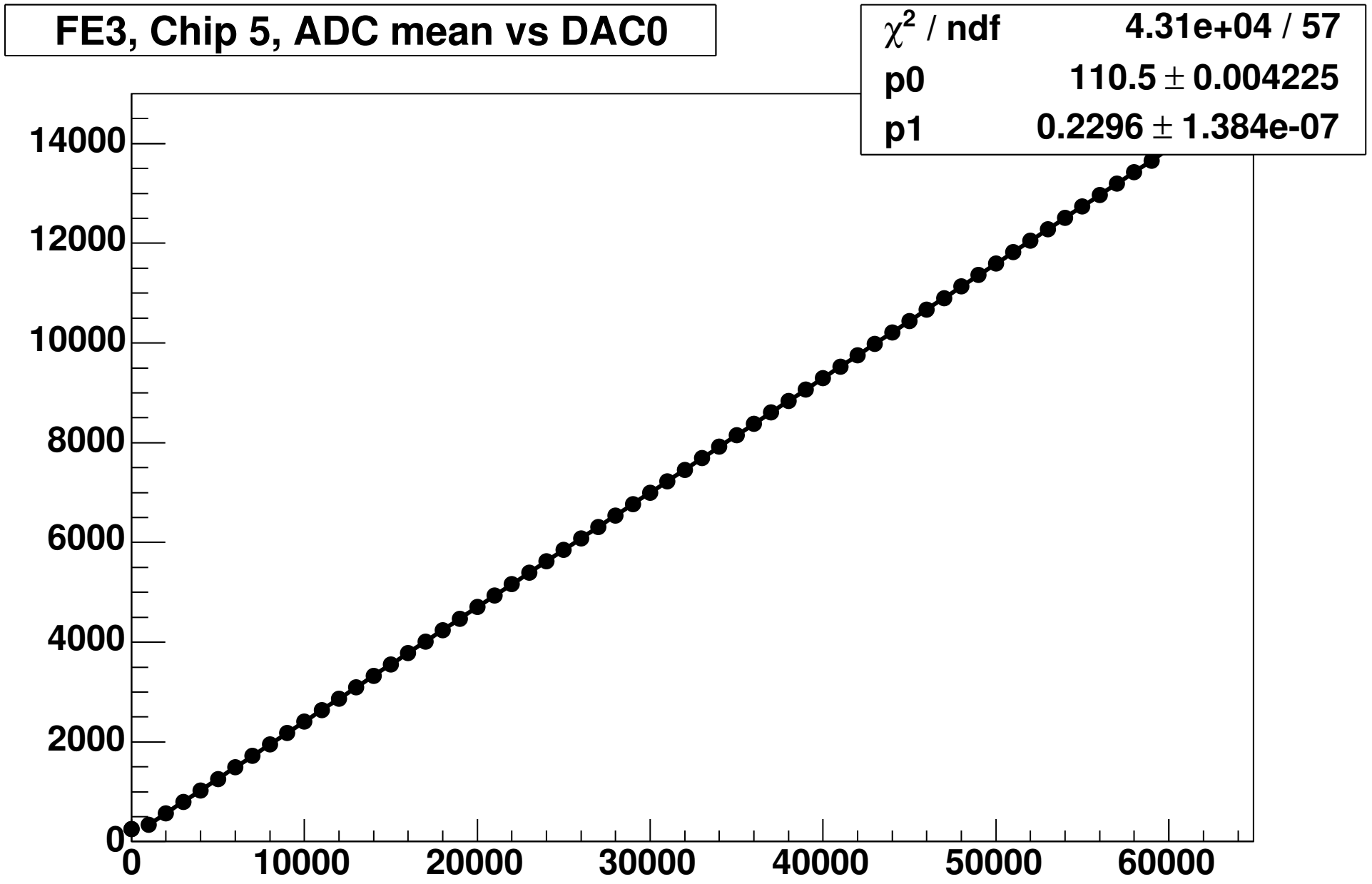

FE3, Chip 4, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

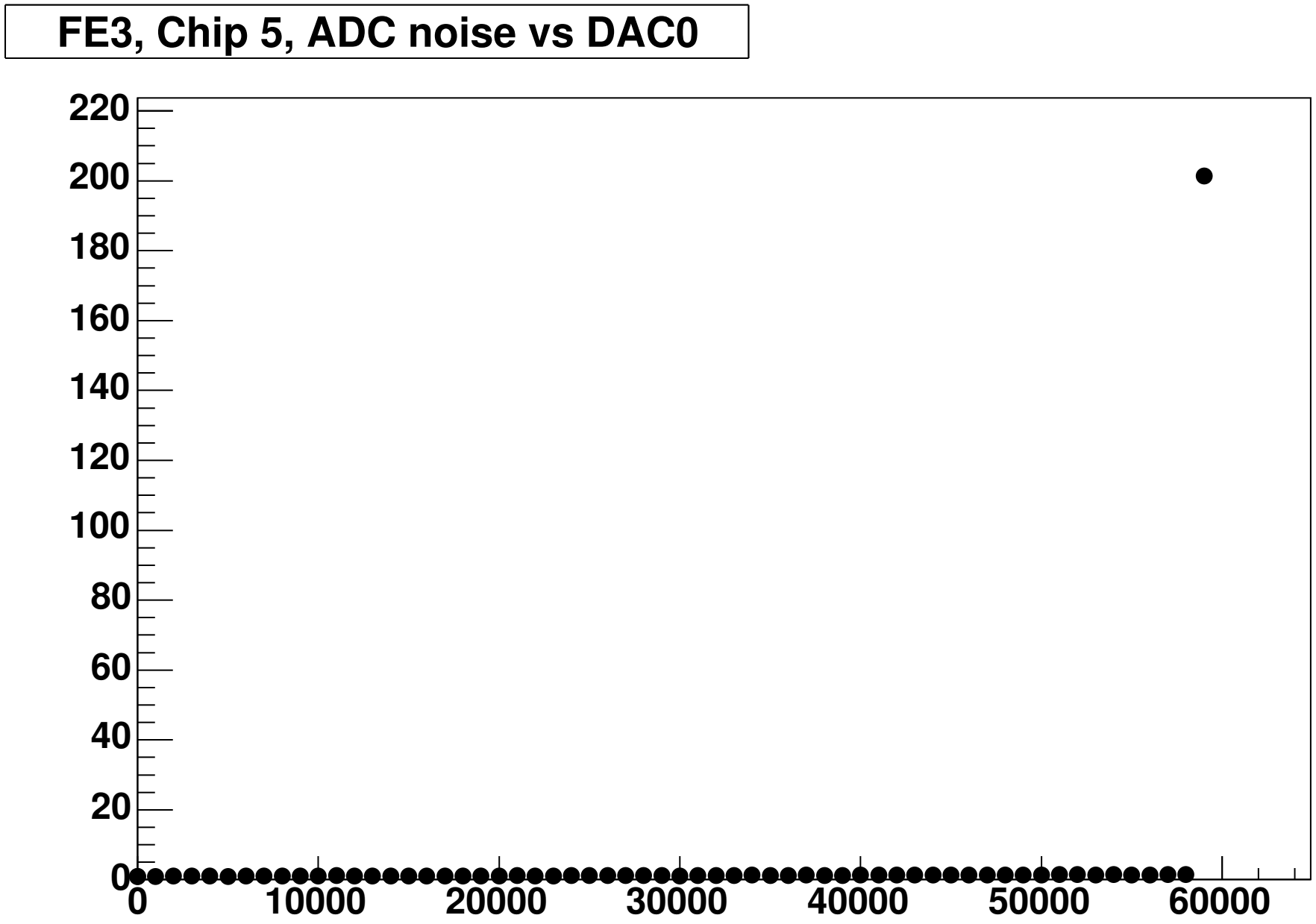

FE3, Chip 4, ADC residuals vs DAC0
4
2
0
-2
-4
-6
0
10000
20000
30000
40000
50000
60000

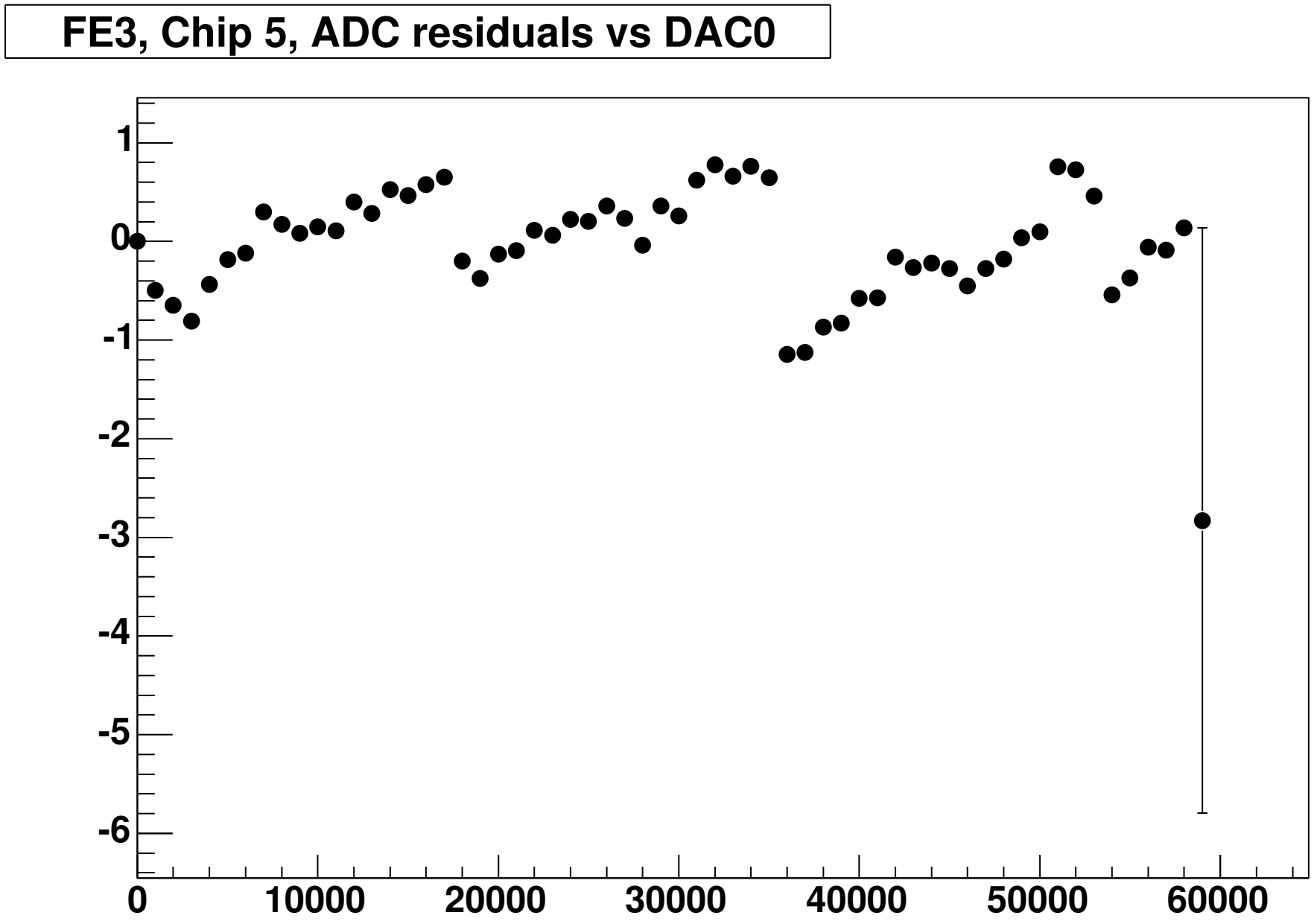

FE3, Chip 4, ADC mean vs DAC1
χ² / ndf 7.484e+04 / 57
p0 252.8 ± 0.003837
p1 3.591e-06 ± 1.115e-07
253.6
253.4
253.2
253
252.8
252.6
252.4
252.2
252
251.8
251.6
0
10000
20000
30000
40000
50000
60000

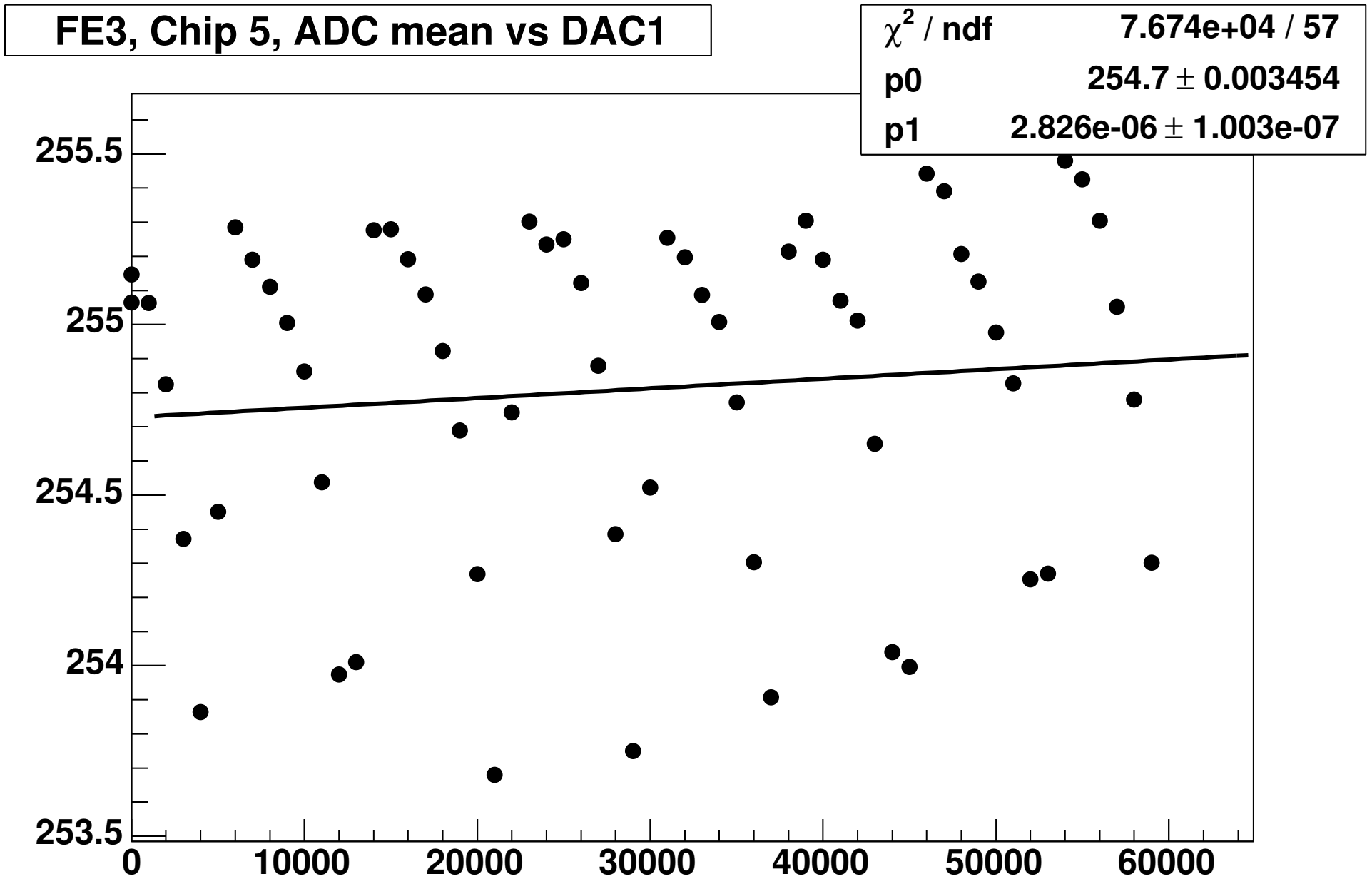

FE3, Chip 4, ADC noise vs DAC1
1.08
1.06
1.04
1.02
1
0.98
0.96
0.94
0
10000
20000
30000
40000
50000
60000

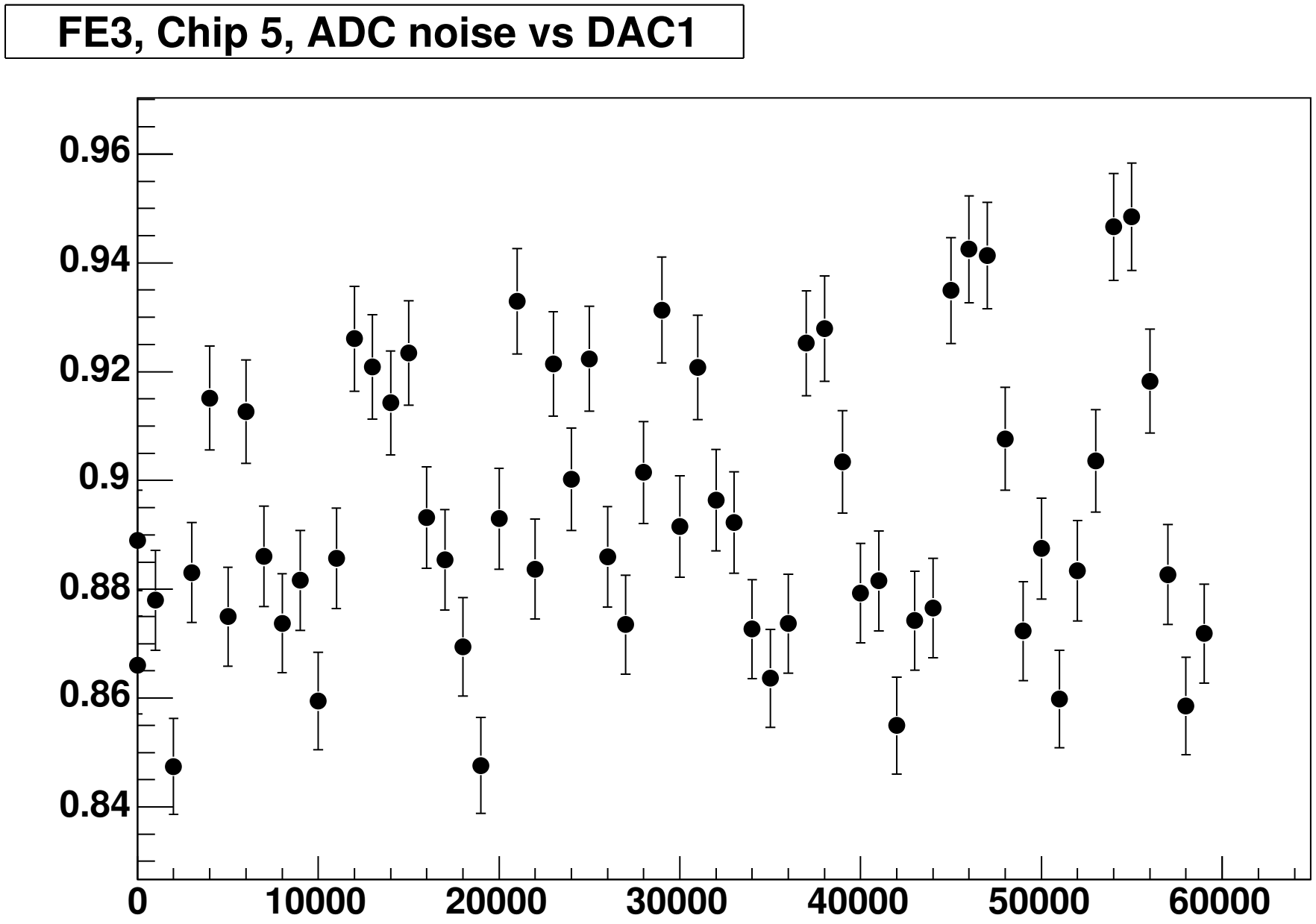

FE3, Chip 4, ADC residuals vs DAC1
0.8
0.6
0.4
0.2
-0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
0
10000
20000
30000
40000
50000
60000

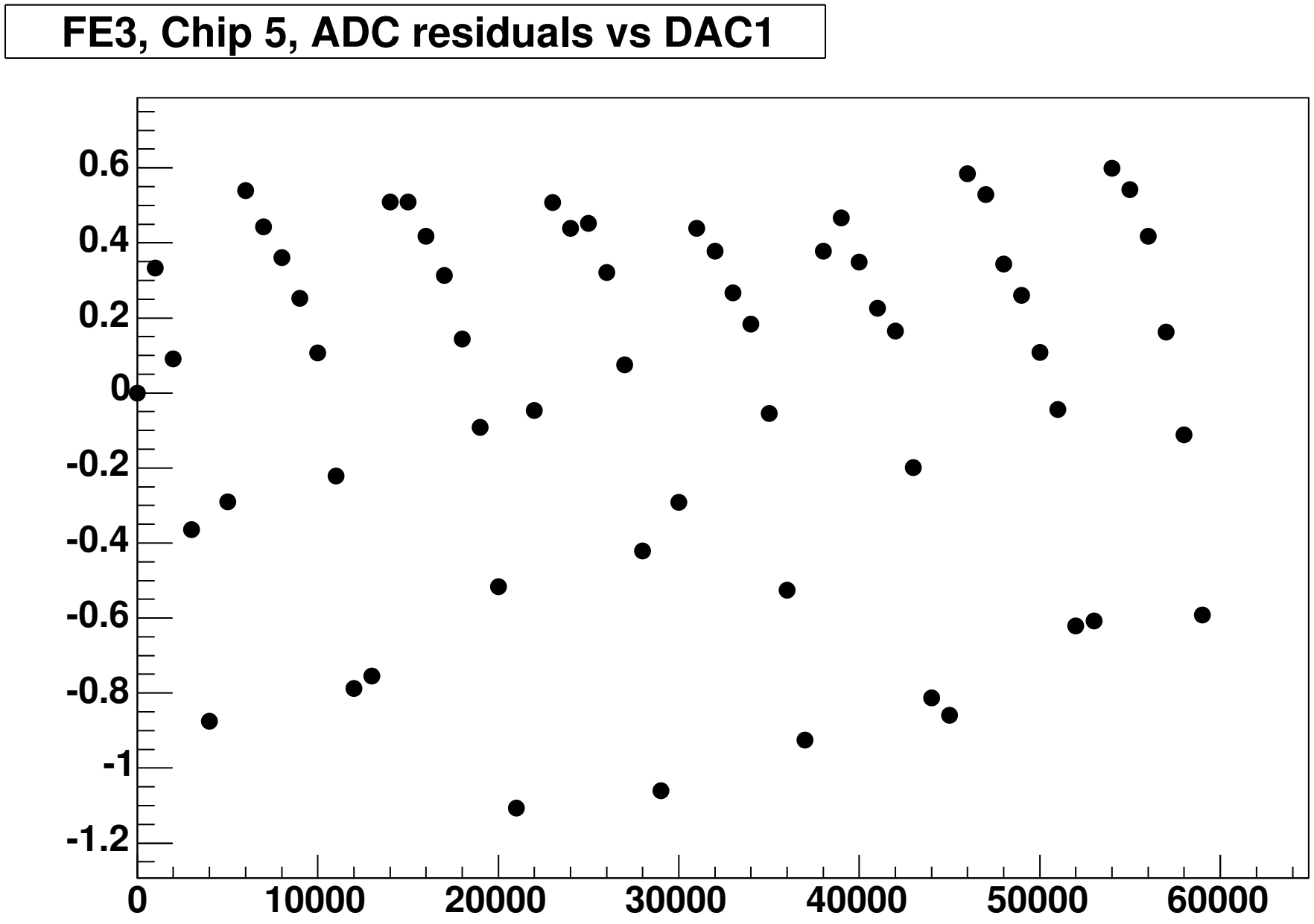

FE3, Chip 5, ADC mean vs DAC0
χ² / ndf 4.31e+04 / 57
p0 110.5 ± 0.004225
p1 0.2296 ± 1.384e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

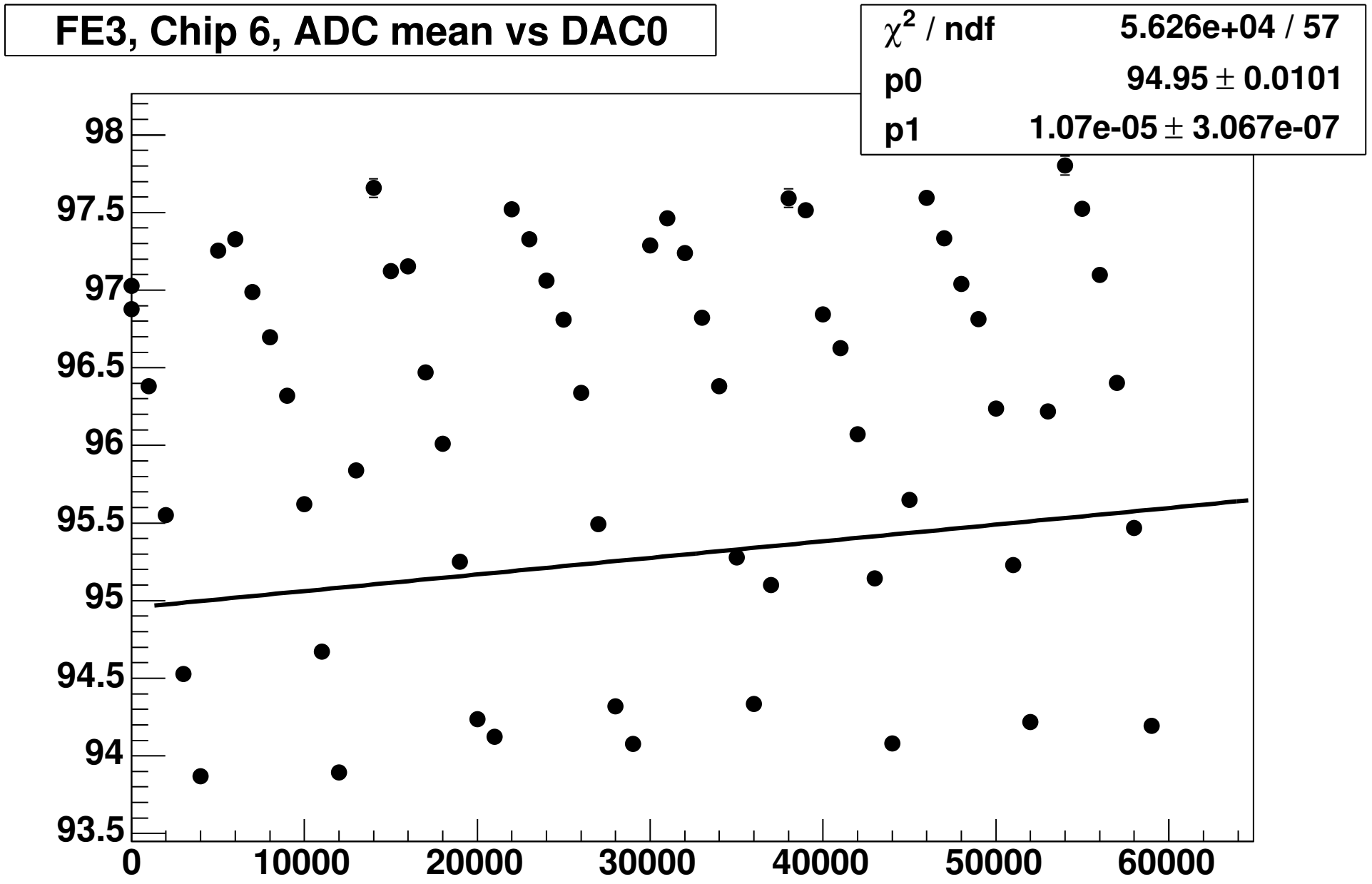

FE3, Chip 5, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

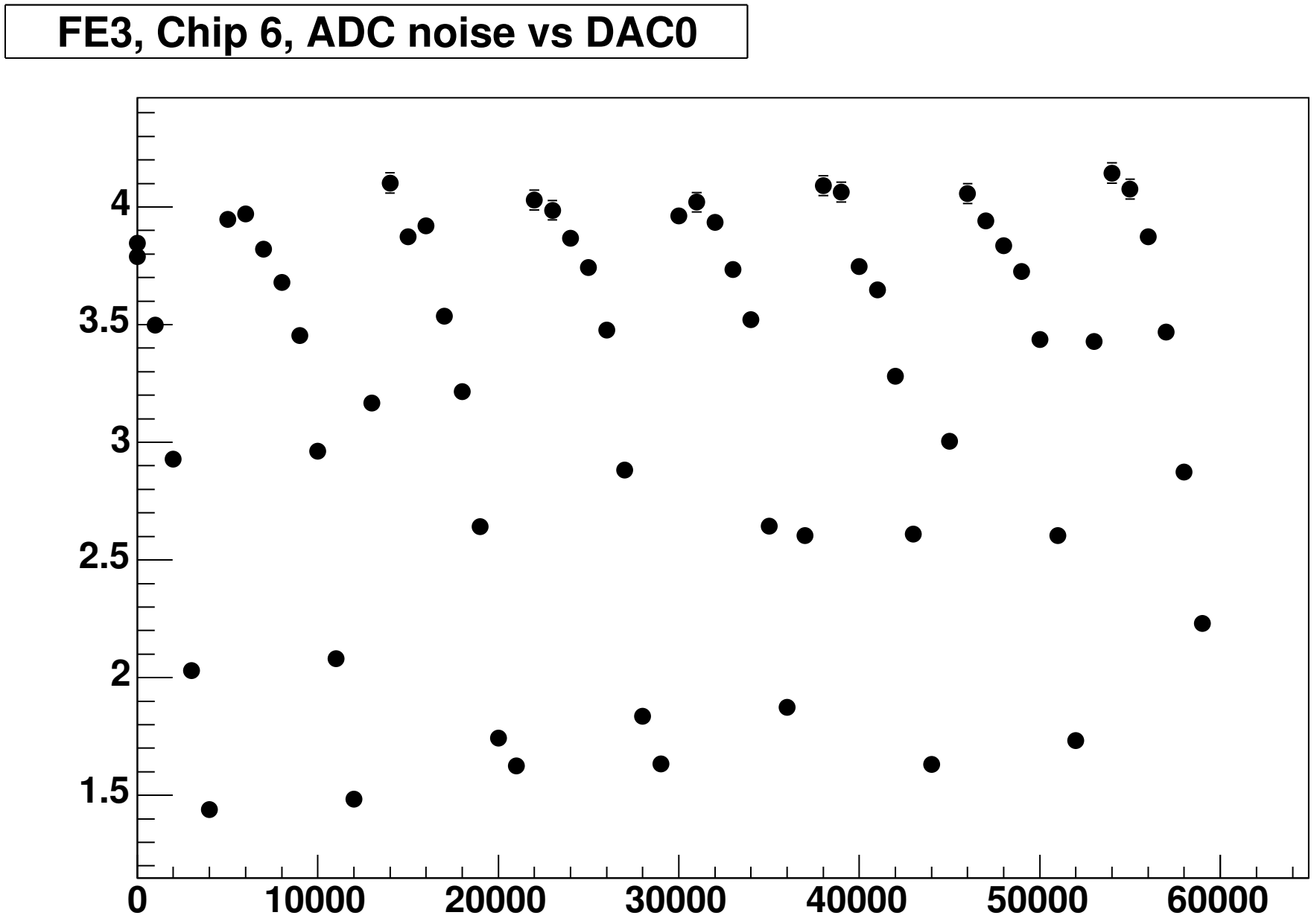

FE3, Chip 5, ADC residuals vs DAC0
1
0
-1
-2
-3
-4
-5
-6
0
10000
20000
30000
40000
50000
60000

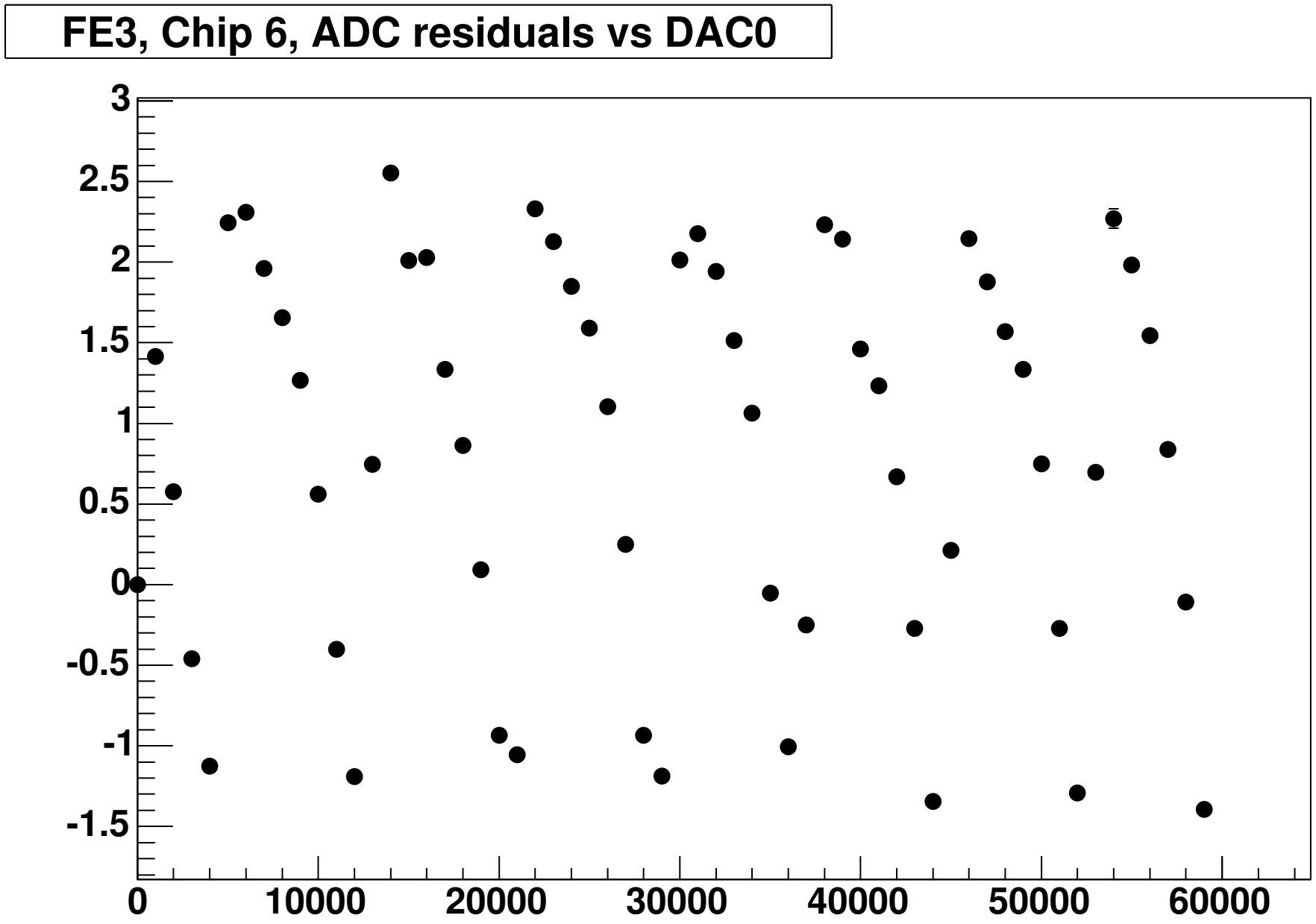

FE3, Chip 5, ADC mean vs DAC1
χ² / ndf 7.674e+04 / 57
p0 254.7 ± 0.003454
p1 2.826e-06 ± 1.003e-07
255.5
255
254.5
254
253.5
0
10000
20000
30000
40000
50000
60000

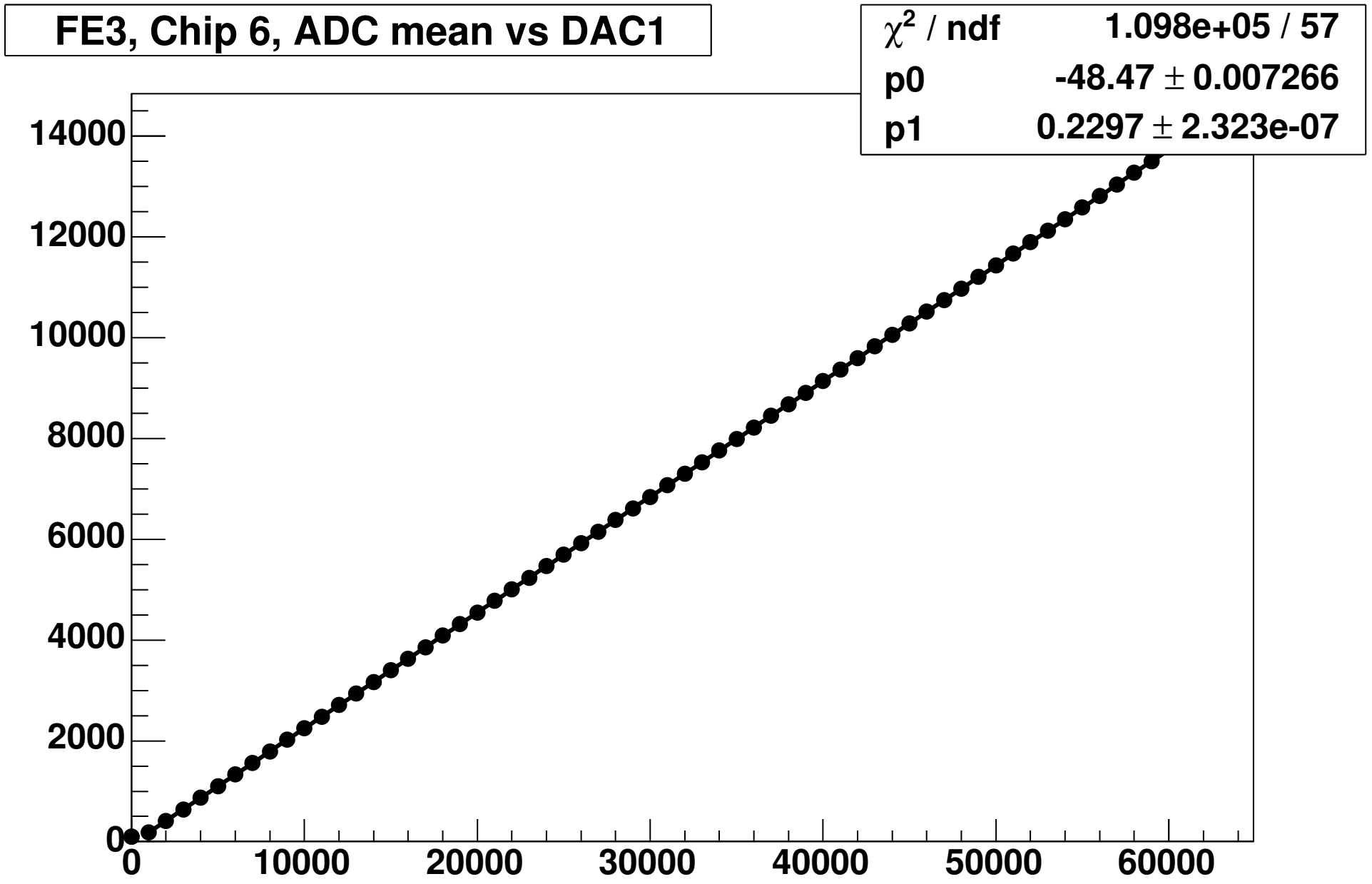

FE3, Chip 5, ADC noise vs DAC1
0.96
0.94
0.92
0.9
0.88
0.86
0.84
0
10000
20000
30000
40000
50000
60000

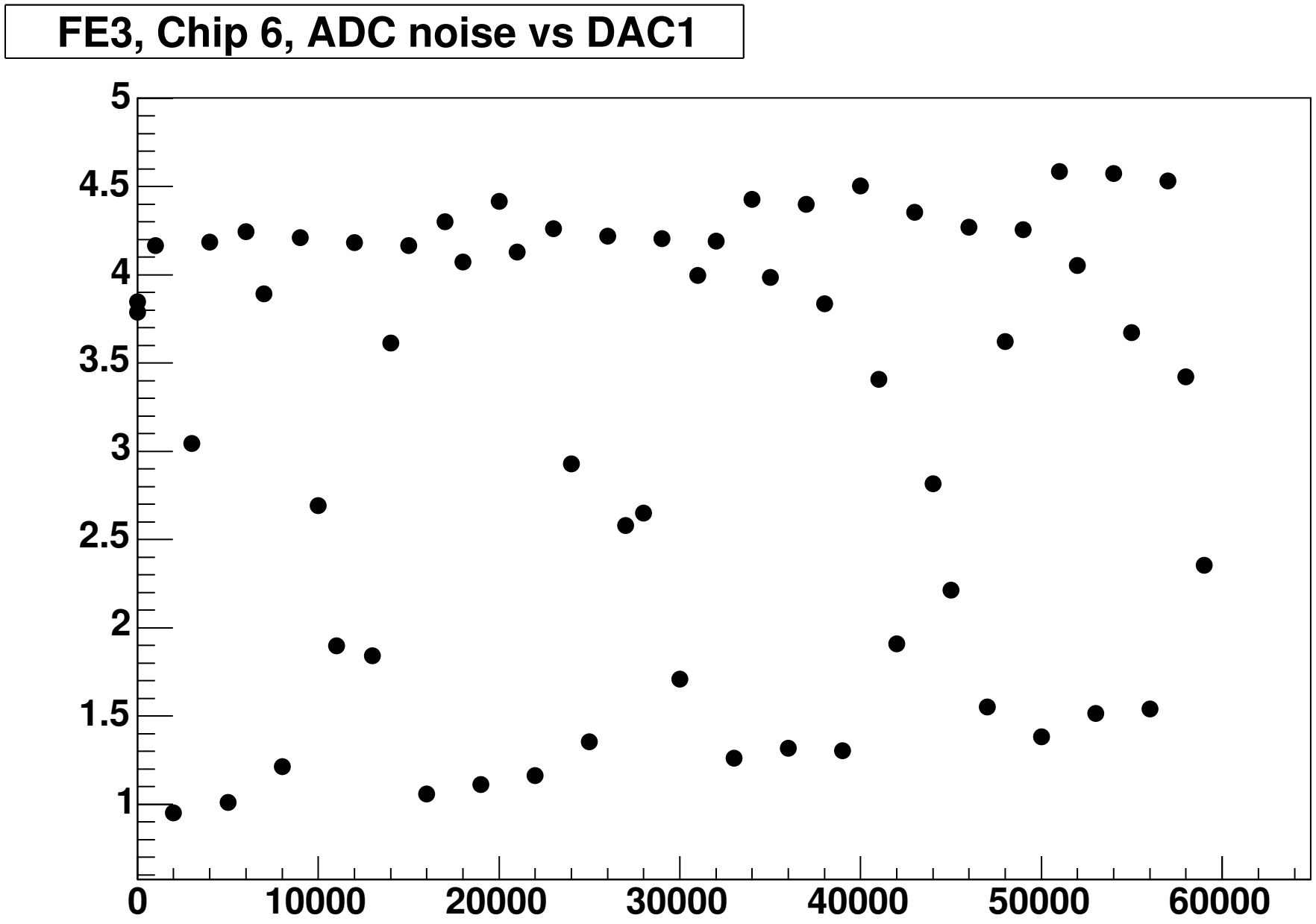

FE3, Chip 5, ADC residuals vs DAC1
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
0
10000
20000
30000
40000
50000
60000

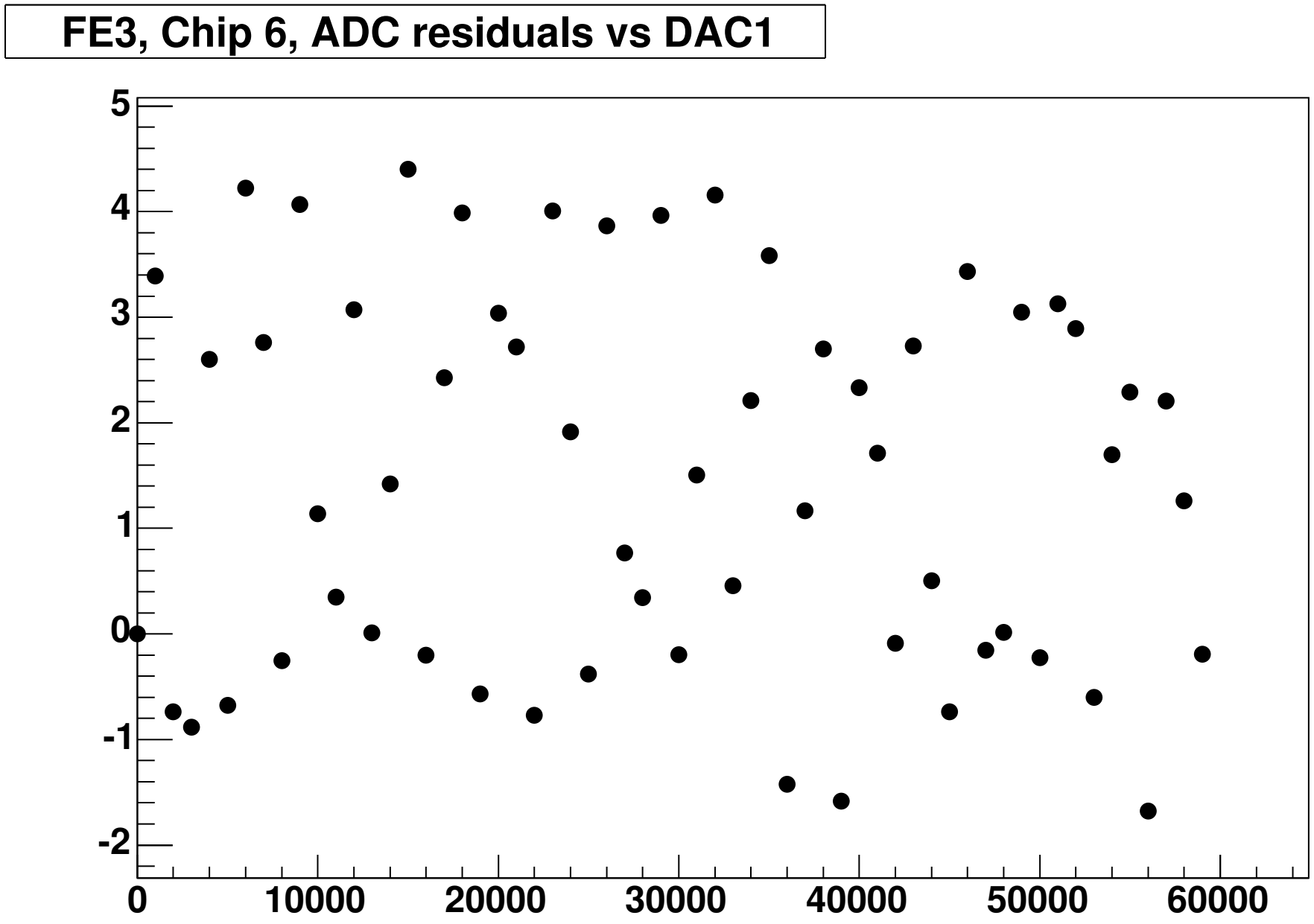

FE3, Chip 6, ADC mean vs DAC0
χ² / ndf 5.626e+04 / 57
p0 94.95 ± 0.0101
p1 1.07e-05 ± 3.067e-07
98
97.5
97
96.5
96
95.5
95
94.5
94
93.5
0
10000
20000
30000
40000
50000
60000

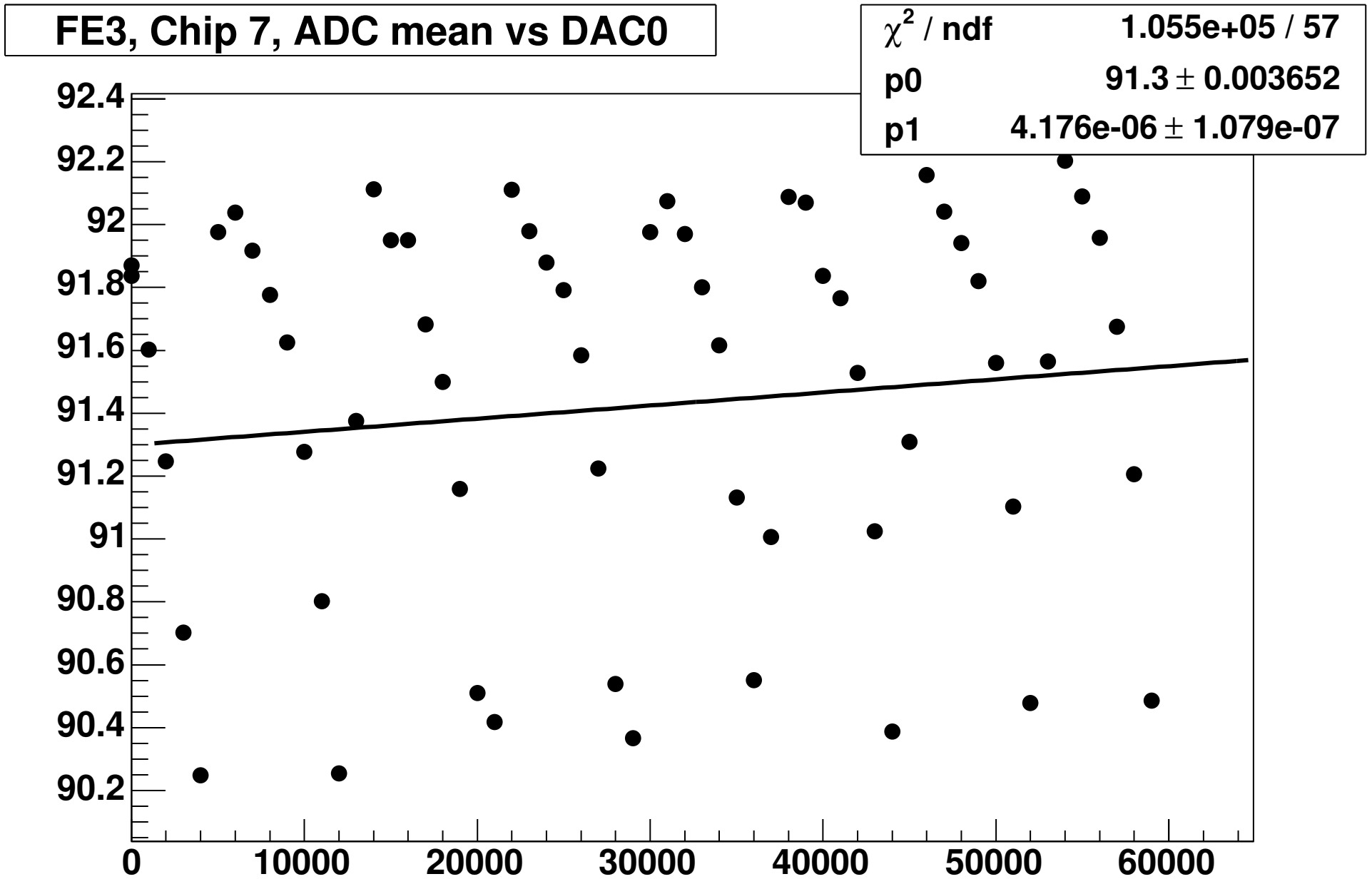

FE3, Chip 6, ADC noise vs DAC0
4
3.5
3
2.5
2
1.5
0
10000
20000
30000
40000
50000
60000

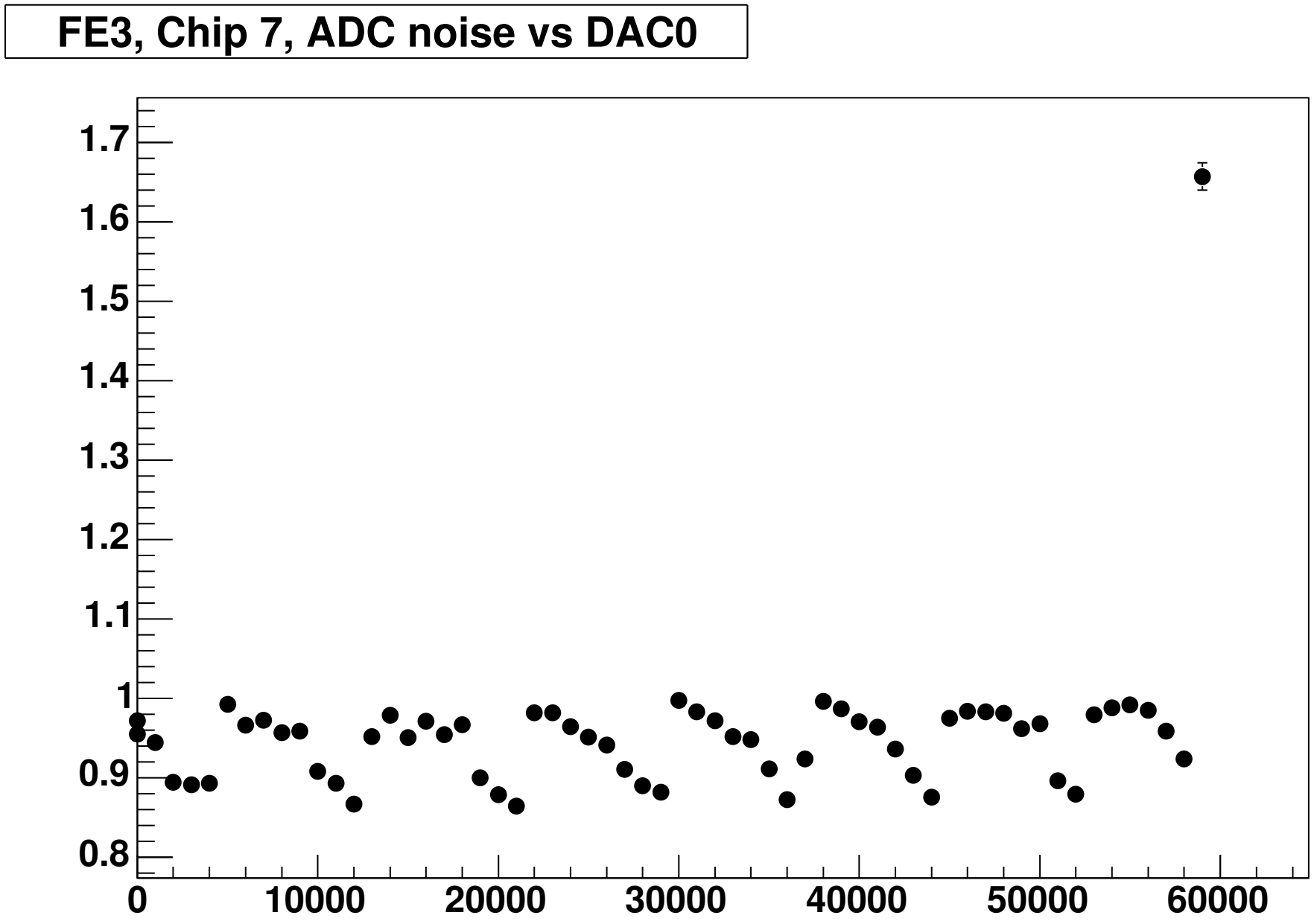

FE3, Chip 6, ADC residuals vs DAC0
3
2.5
2
1.5
1
0.5
0
-0.5
-1
-1.5
0
10000
20000
30000
40000
50000
60000

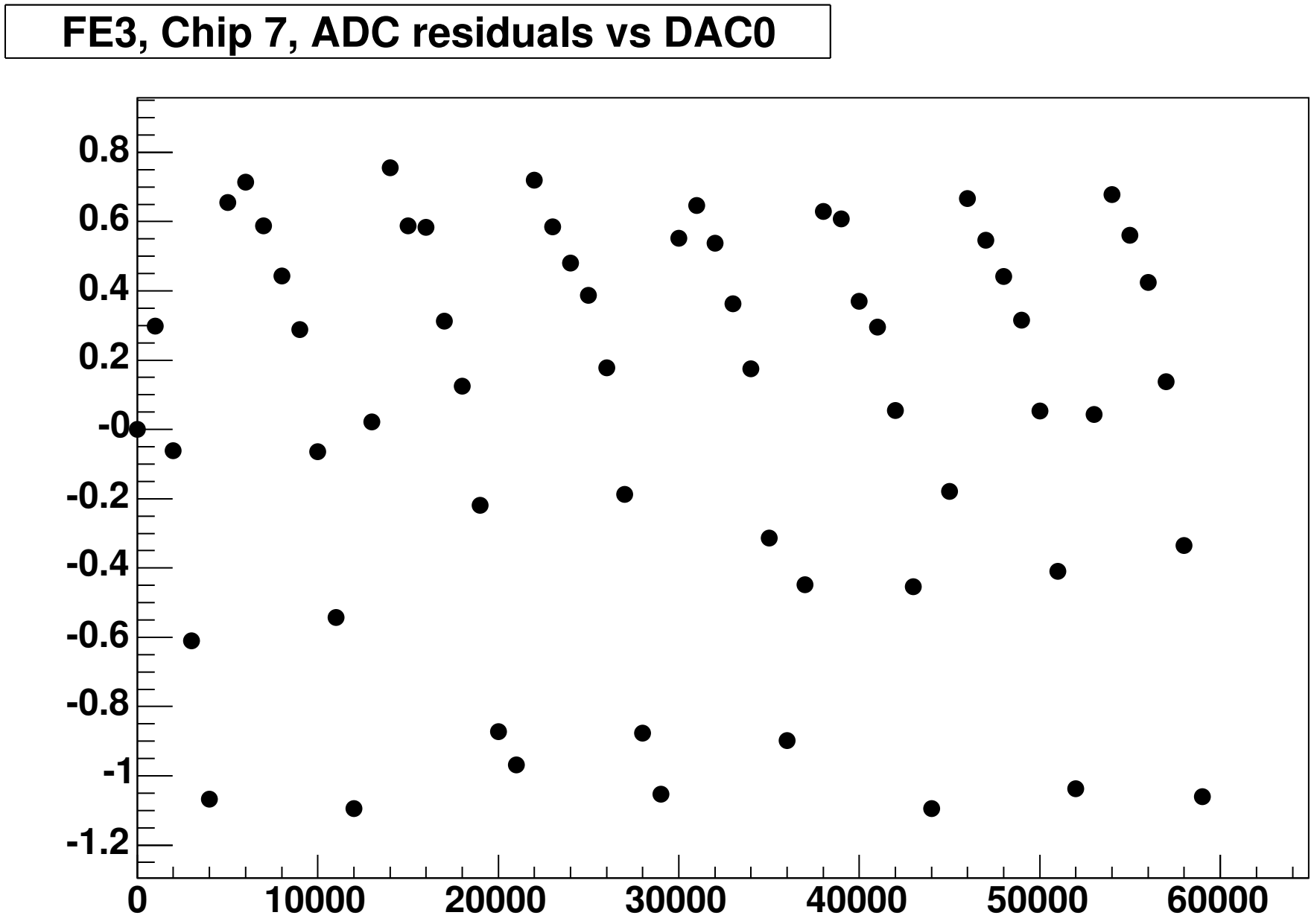

FE3, Chip 6, ADC mean vs DAC1
χ² / ndf 1.098e+05 / 57
p0 -48.47 ± 0.007266
p1 0.2297 ± 2.323e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

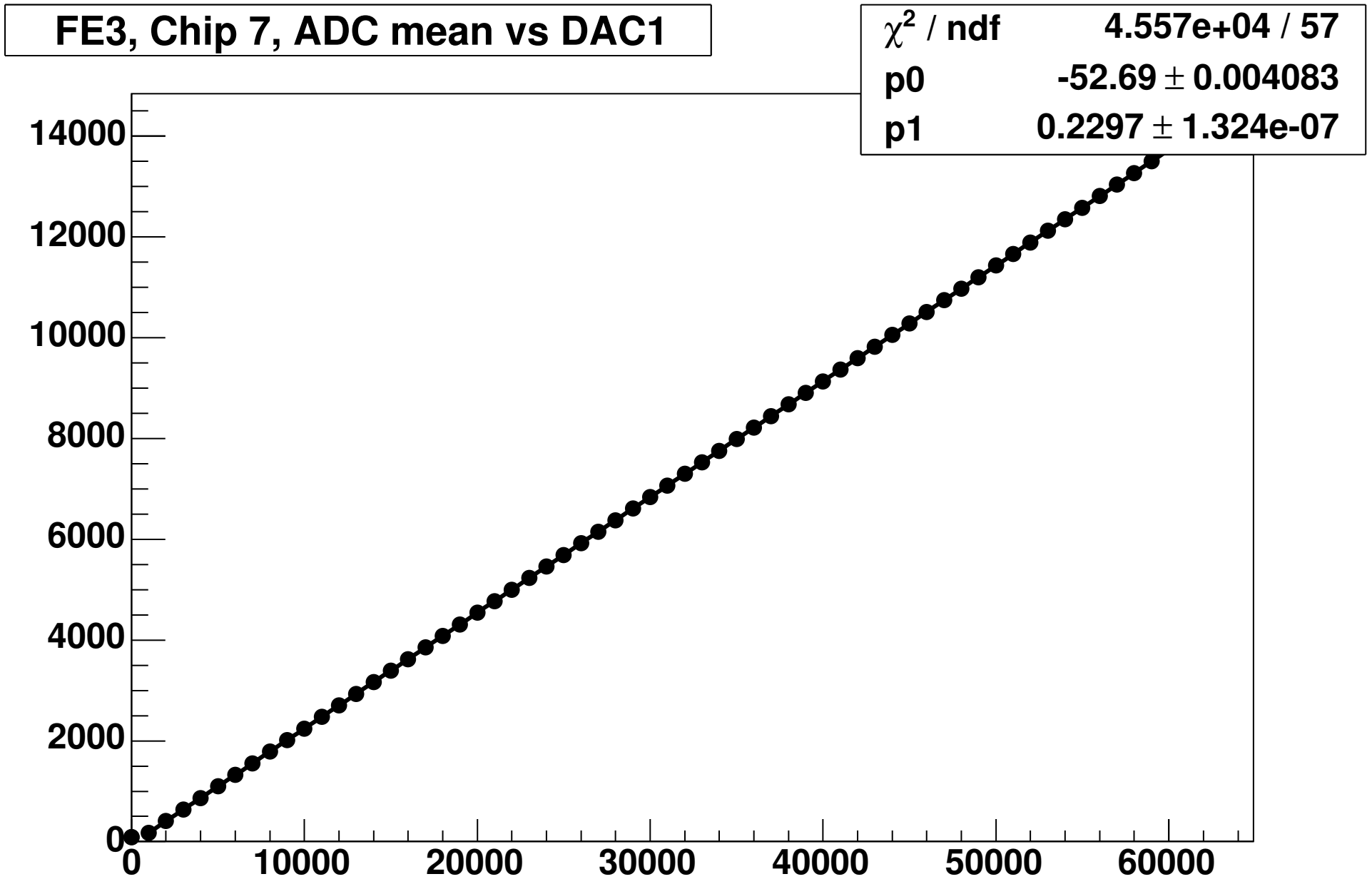

FE3, Chip 6, ADC noise vs DAC1
5
4.5
4
3.5
3
2.5
2
1.5
1
0
10000
20000
30000
40000
50000
60000

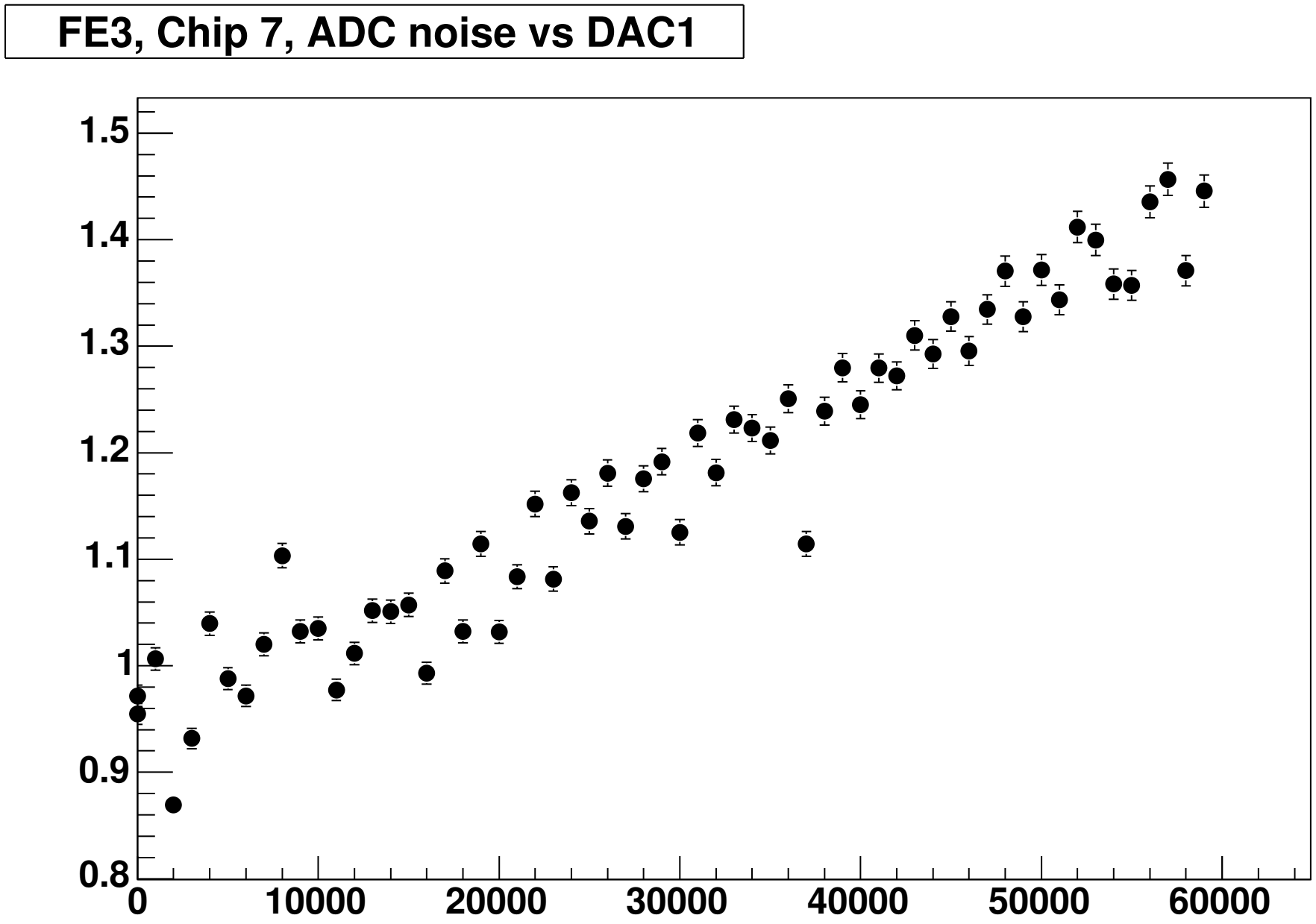

FE3, Chip 6, ADC residuals vs DAC1
5
4
3
2
1
0
-1
-2
0
10000
20000
30000
40000
50000
60000

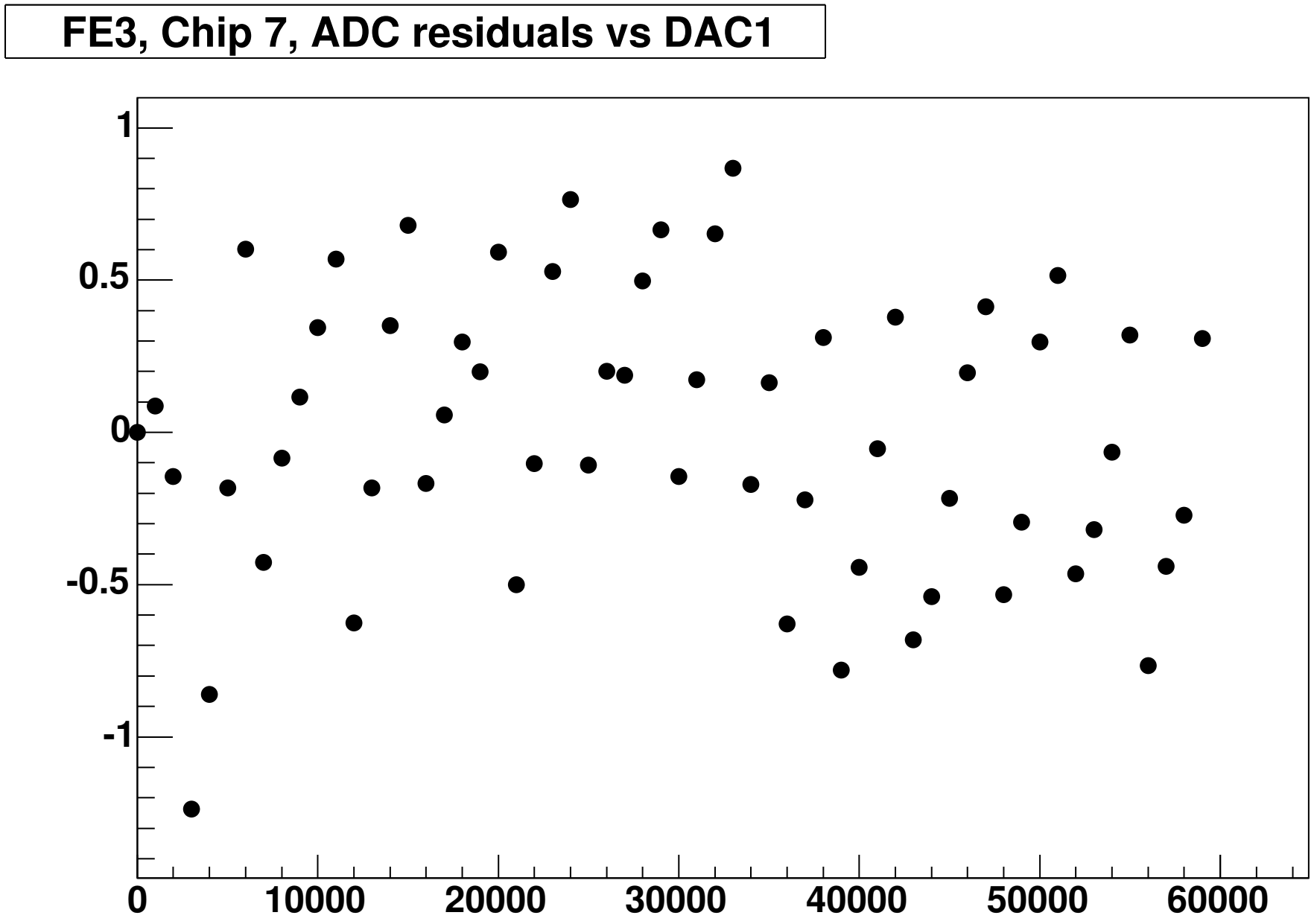

FE3, Chip 7, ADC mean vs DAC0
χ² / ndf 1.055e+05 / 57
p0 91.3 ± 0.003652
p1 4.176e-06 ± 1.079e-07
92.4
92.2
92
91.8
91.6
91.4
91.2
91
90.8
90.6
90.4
90.2
0
10000
20000
30000
40000
50000
60000

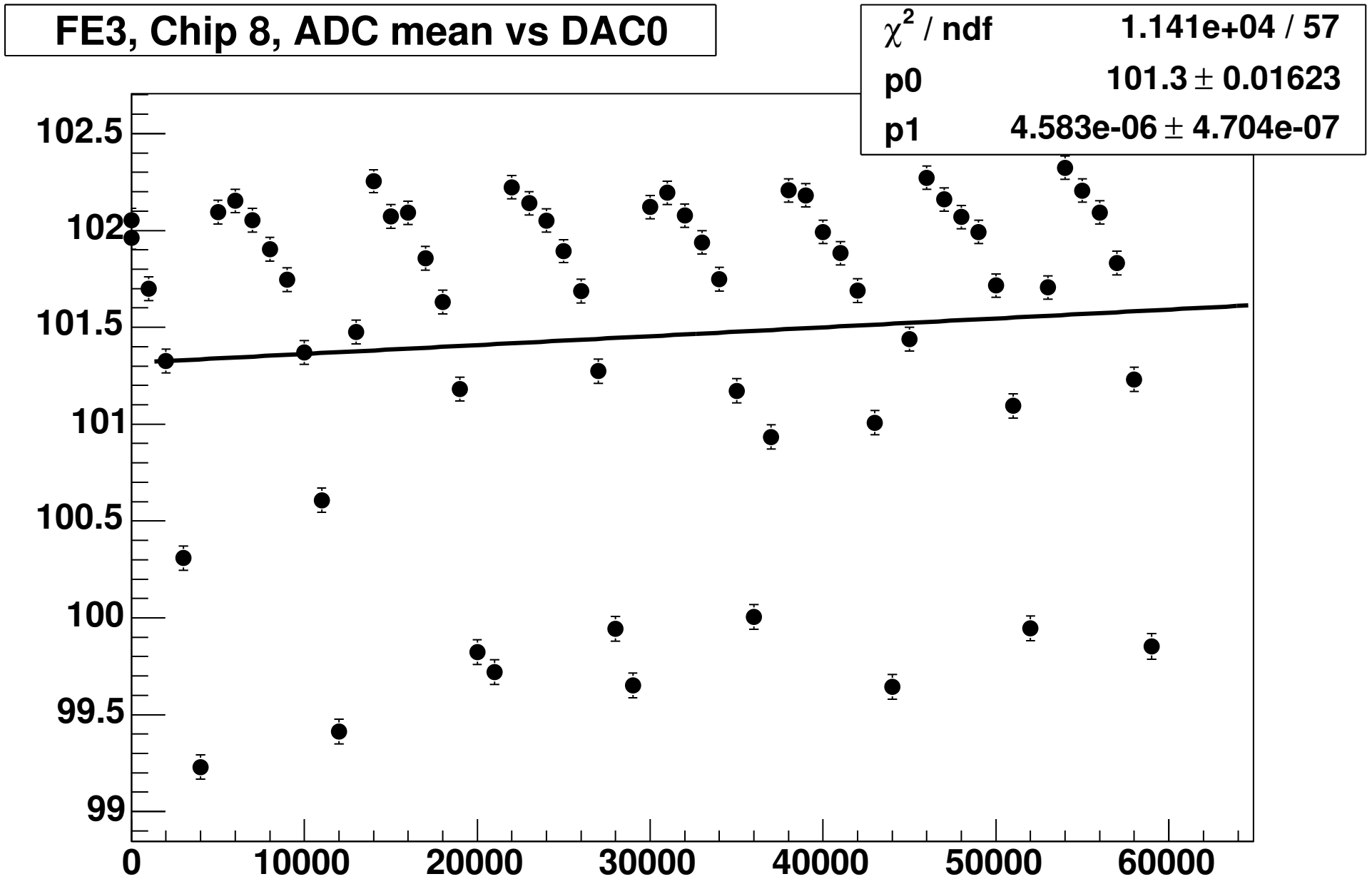

FE3, Chip 7, ADC noise vs DAC0
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0
10000
20000
30000
40000
50000
60000

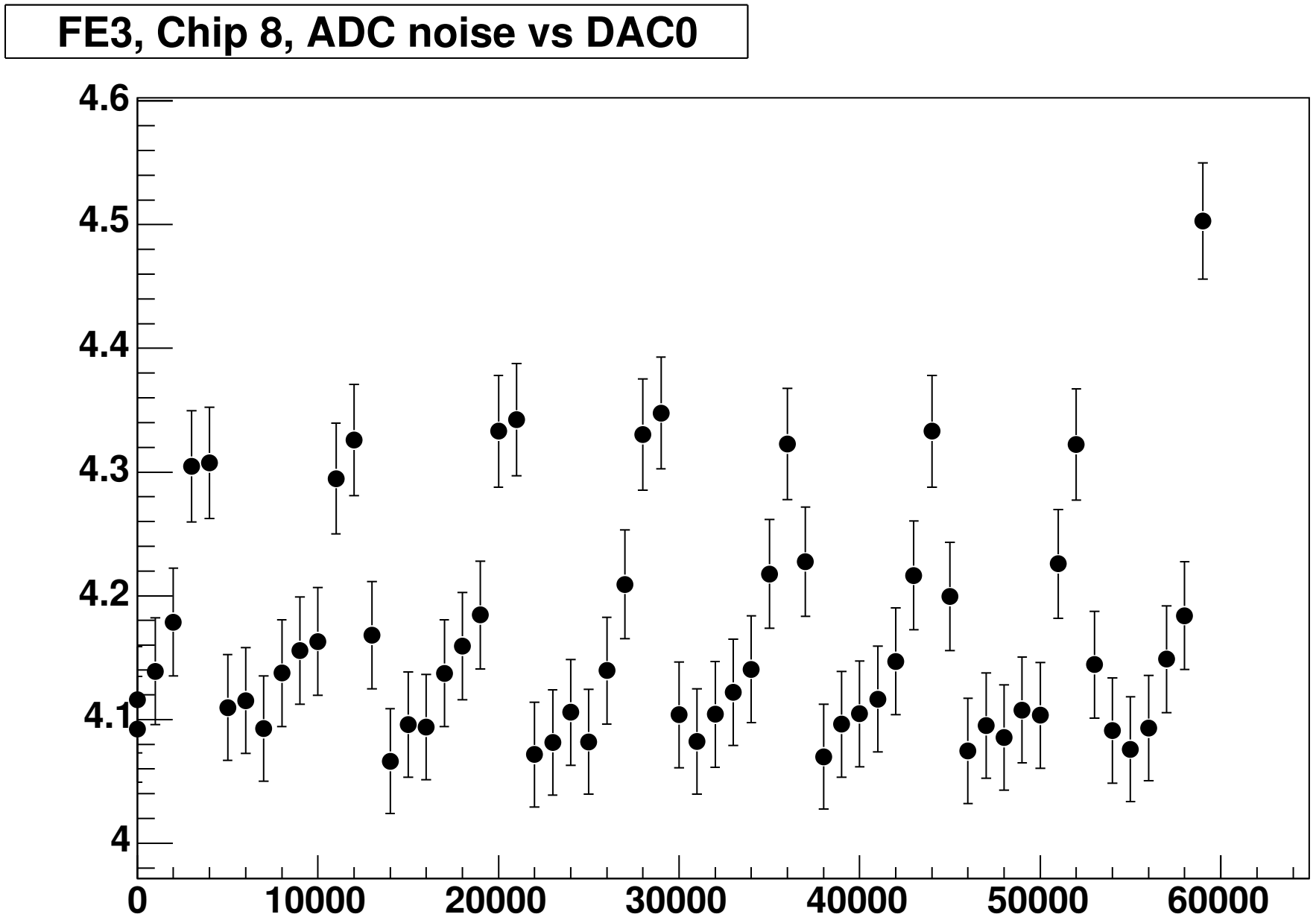

FE3, Chip 7, ADC residuals vs DAC0
0.8
0.6
0.4
0.2
-0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
0
10000
20000
30000
40000
50000
60000

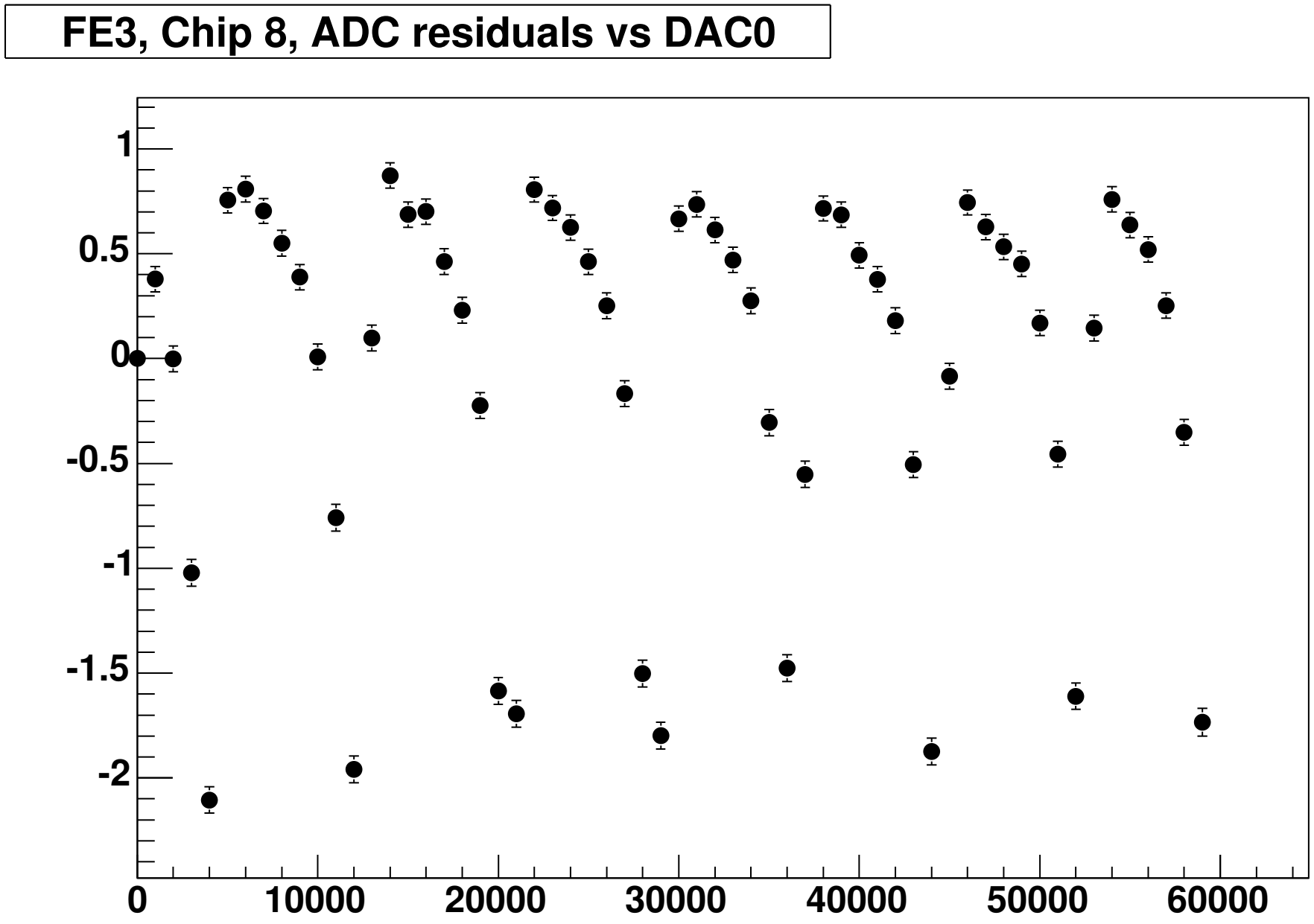

FE3, Chip 7, ADC mean vs DAC1
χ² / ndf 4.557e+04 / 57
p0 -52.69 ± 0.004083
p1 0.2297 ± 1.324e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

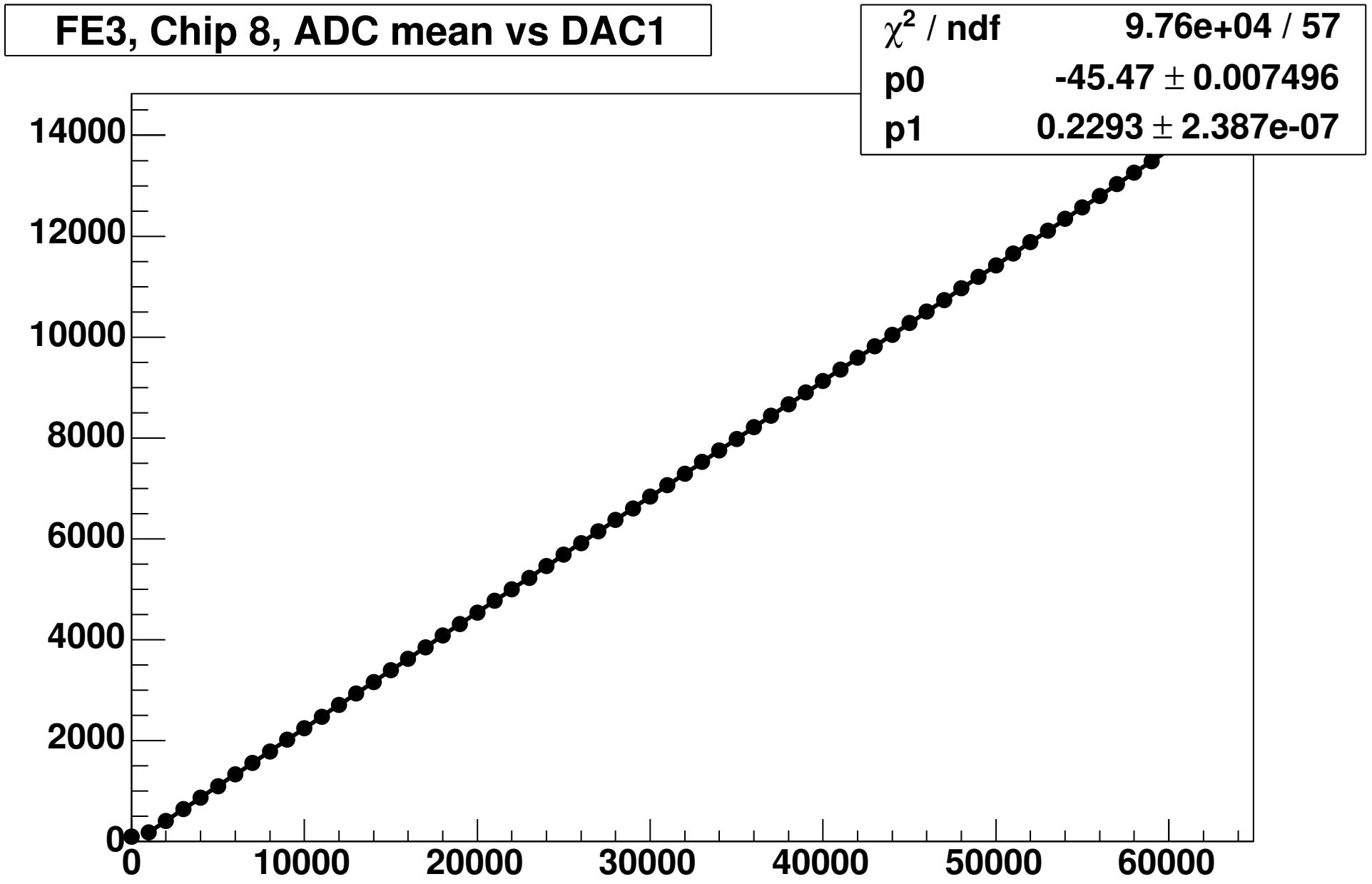

FE3, Chip 7, ADC noise vs DAC1
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0
10000
20000
30000
40000
50000
60000

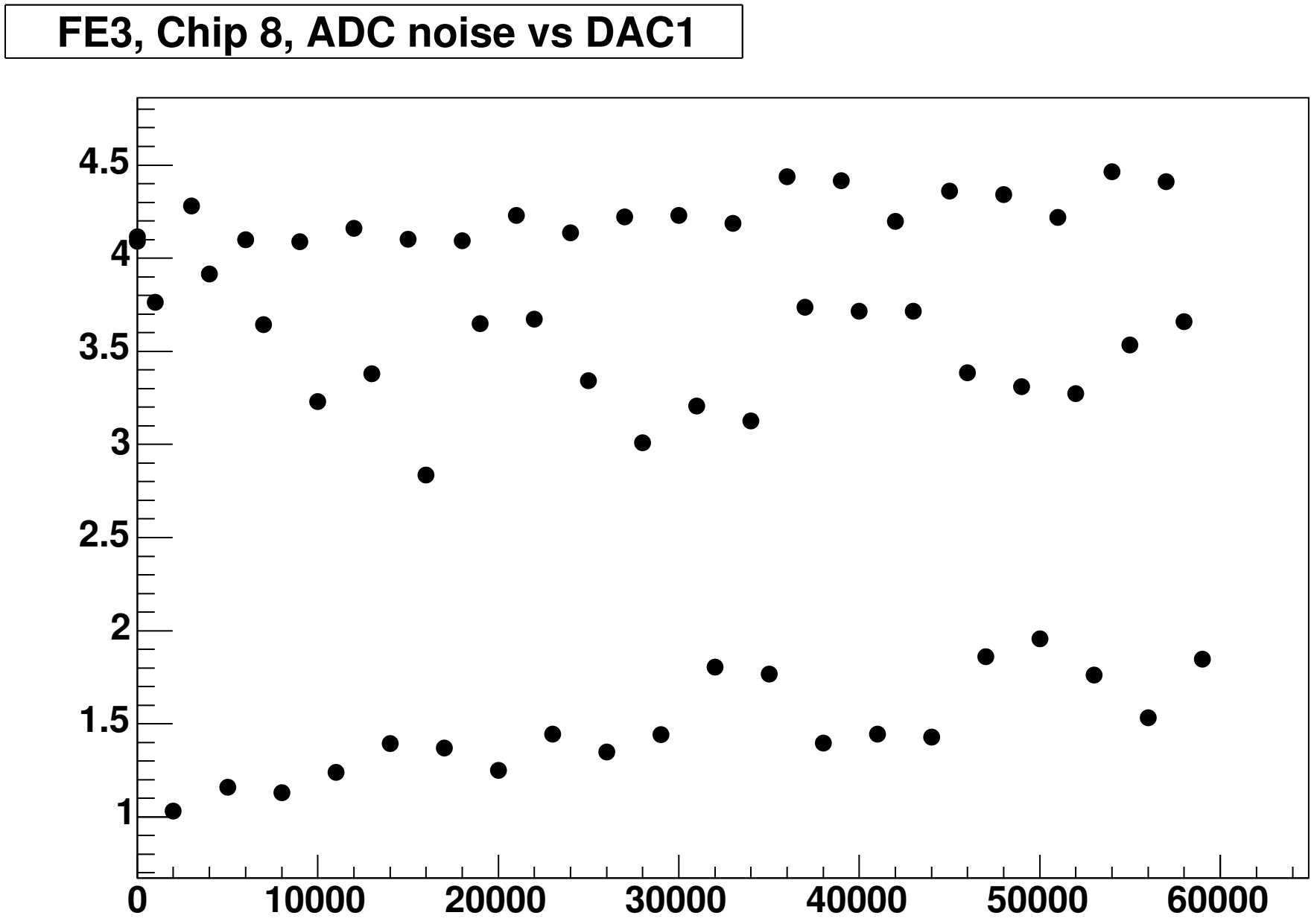

FE3, Chip 7, ADC residuals vs DAC1
1
0.5
0
-0.5
-1
0
10000
20000
30000
40000
50000
60000

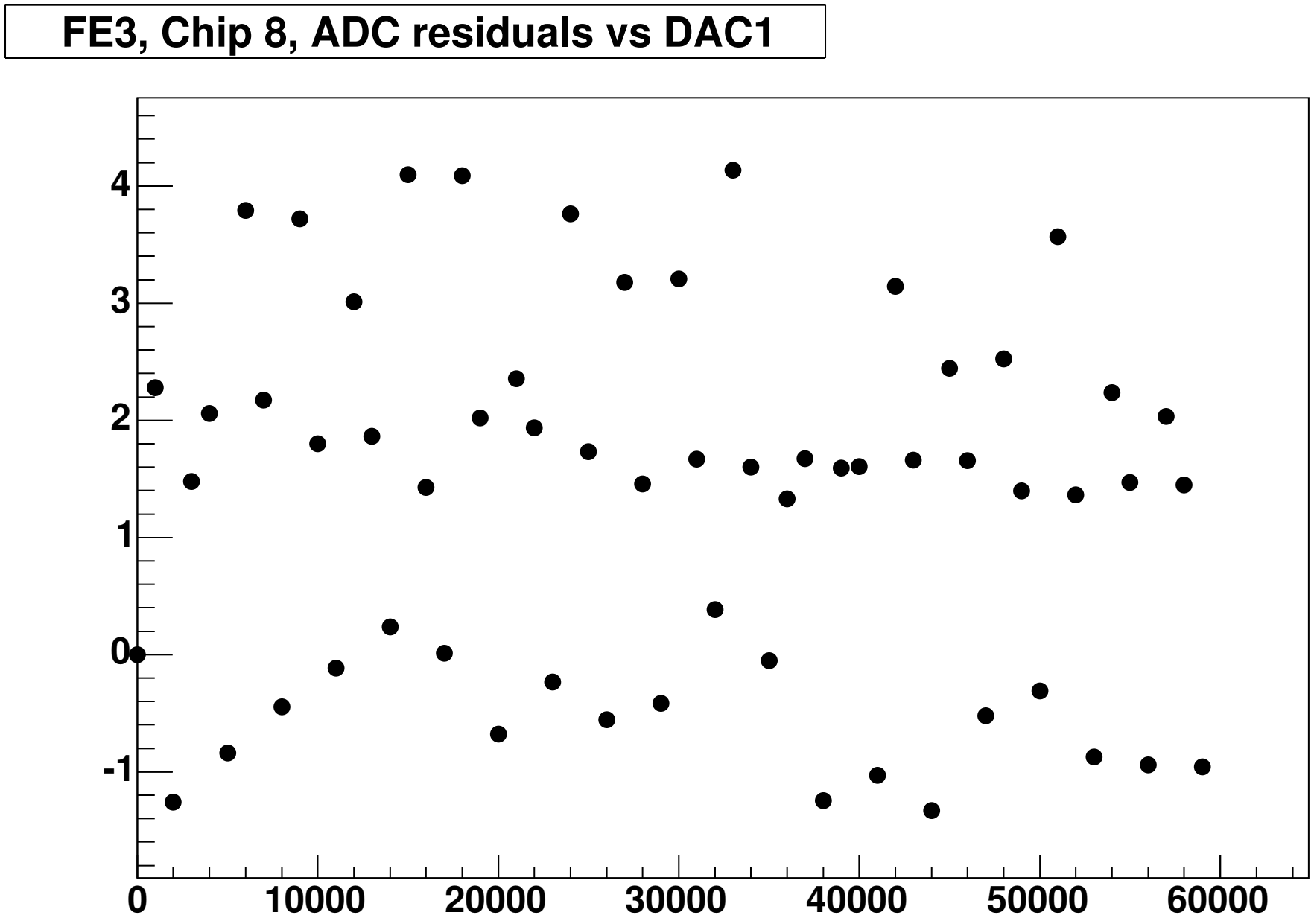

FE3, Chip 8, ADC mean vs DAC0
χ² / ndf 1.141e+04 / 57
p0 101.3 ± 0.01623
p1 4.583e-06 ± 4.704e-07
102.5
102
101.5
101
100.5
100
99.5
99
0
10000
20000
30000
40000
50000
60000

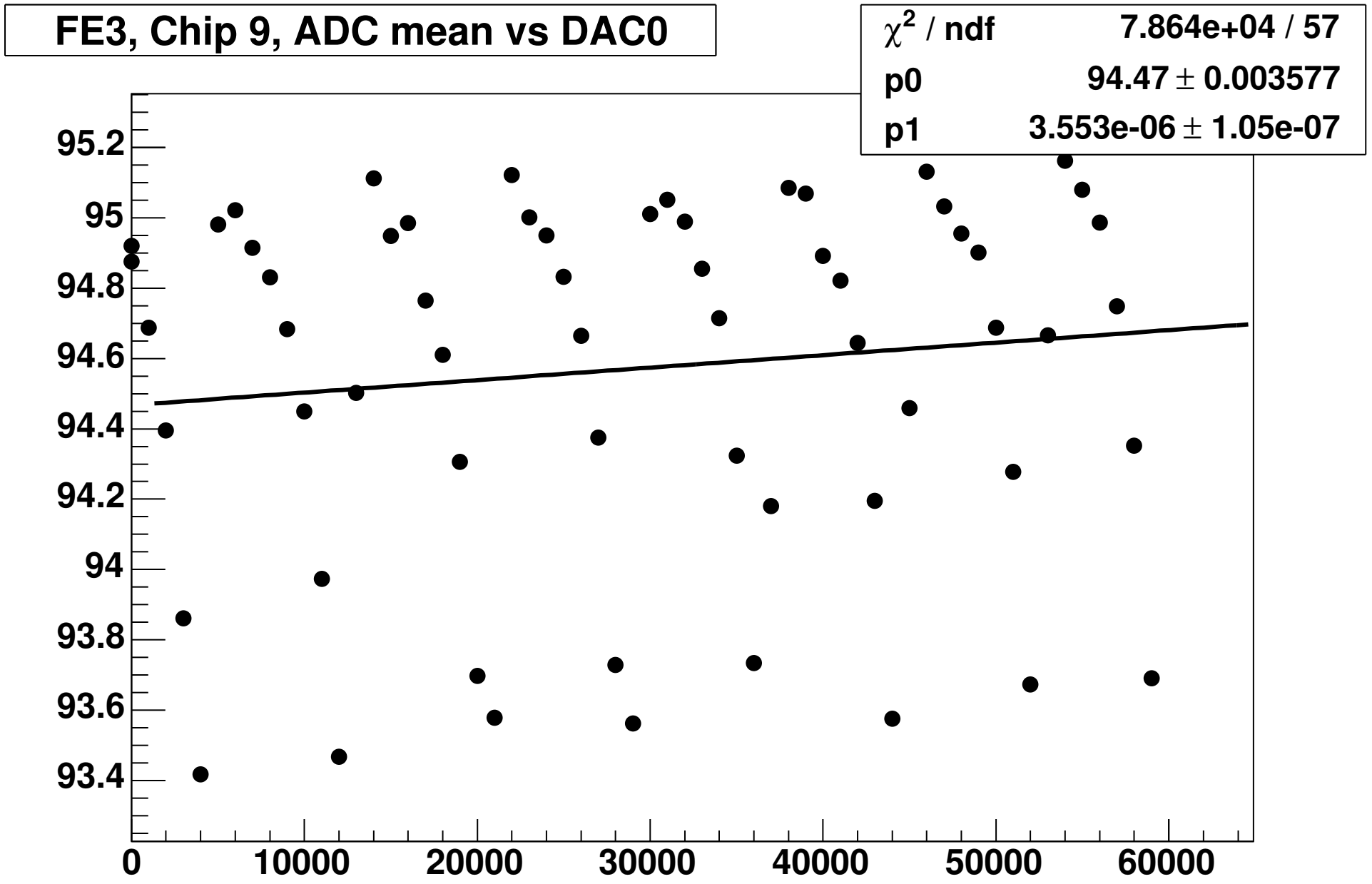

FE3, Chip 8, ADC noise vs DAC0
4.6
4.5
4.4
4.3
4.2
4.1
4
0
10000
20000
30000
40000
50000
60000

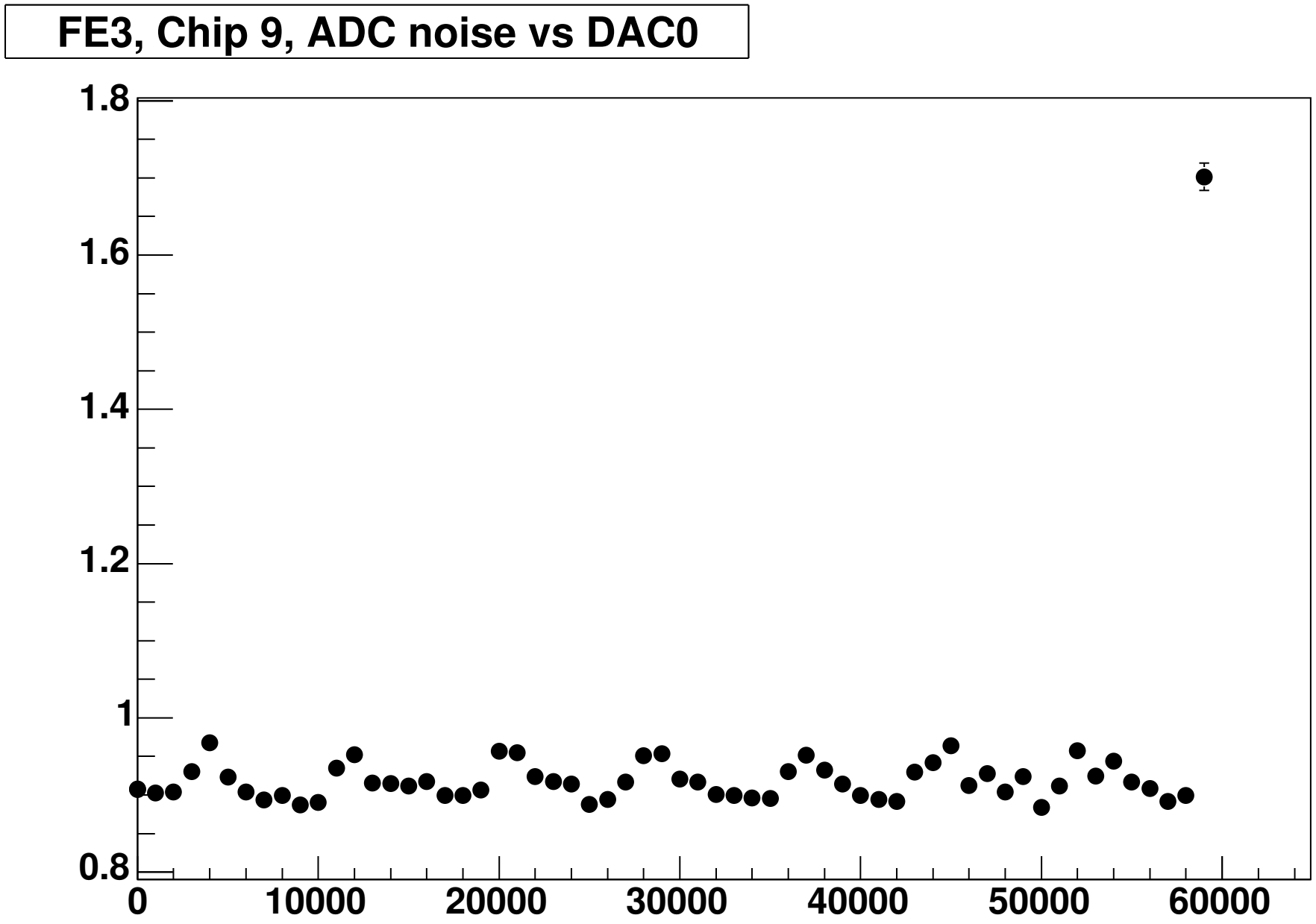

FE3, Chip 8, ADC residuals vs DAC0
1
0.5
0
-0.5
-1
-1.5
-2
0
10000
20000
30000
40000
50000
60000

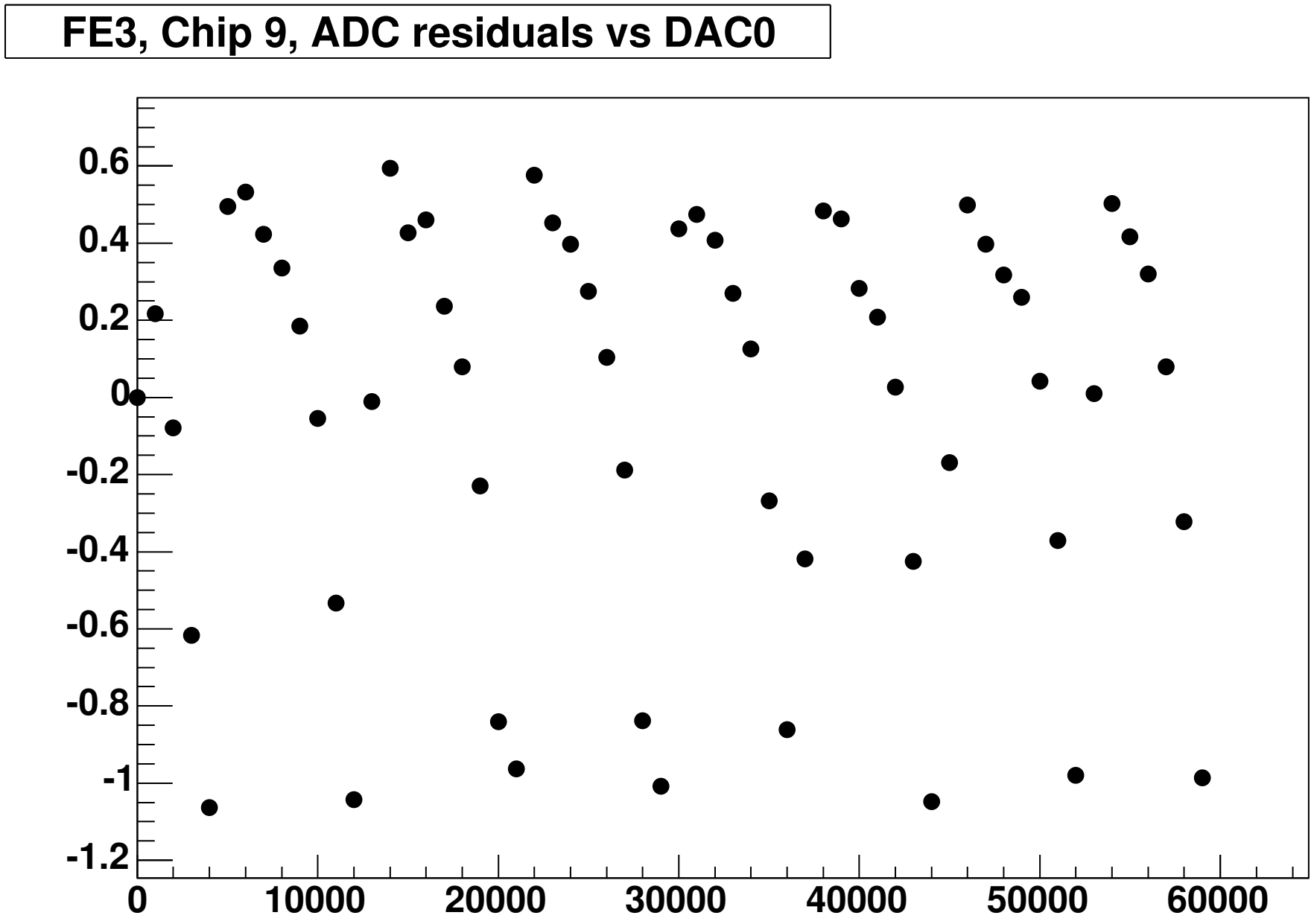

FE3, Chip 8, ADC mean vs DAC1
χ² / ndf 9.76e+04 / 57
p0 -45.47 ± 0.007496
p1 0.2293 ± 2.387e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

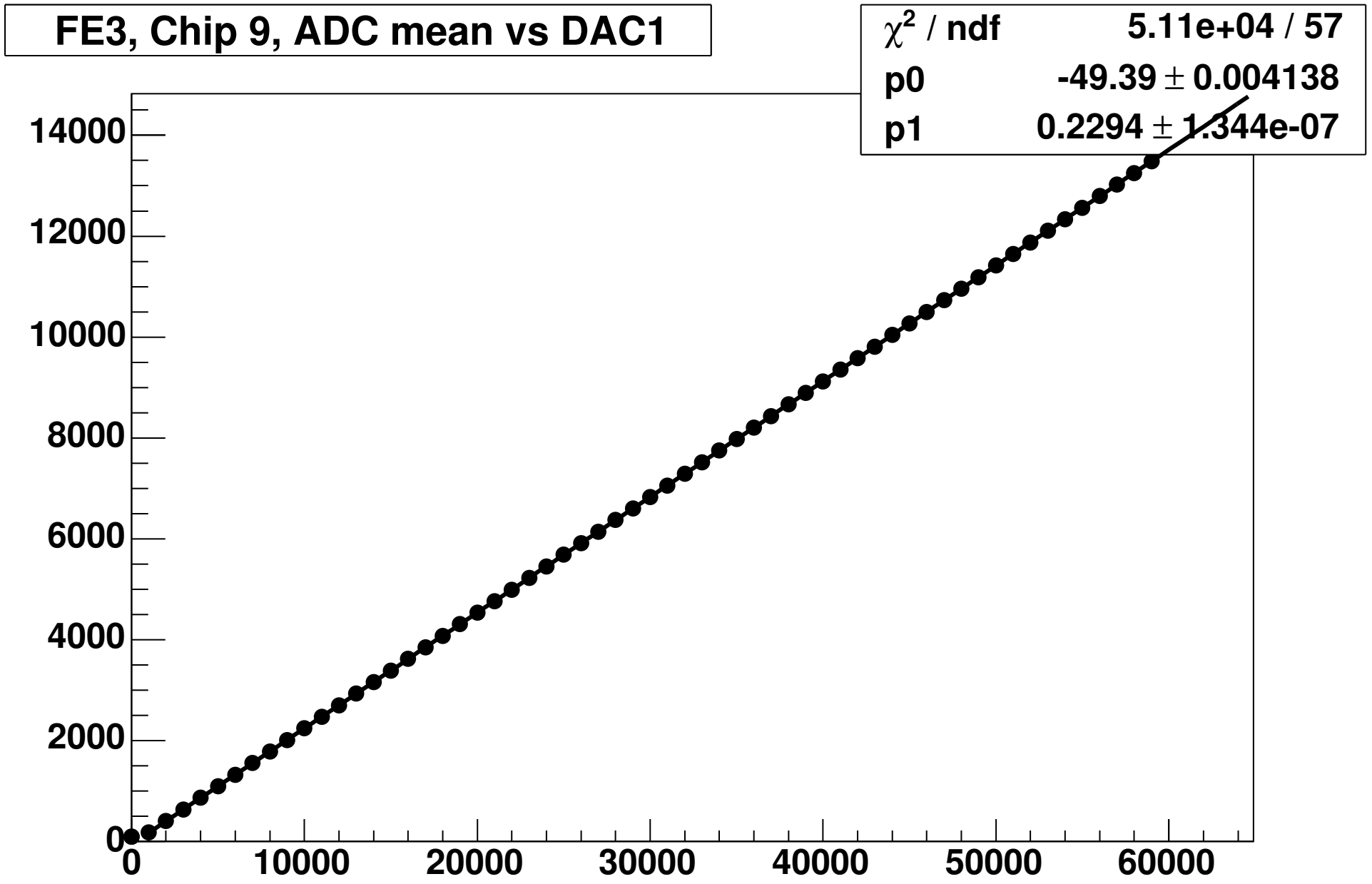

FE3, Chip 8, ADC noise vs DAC1
4.5
4
3.5
3
2.5
2
1.5
1
0
10000
20000
30000
40000
50000
60000

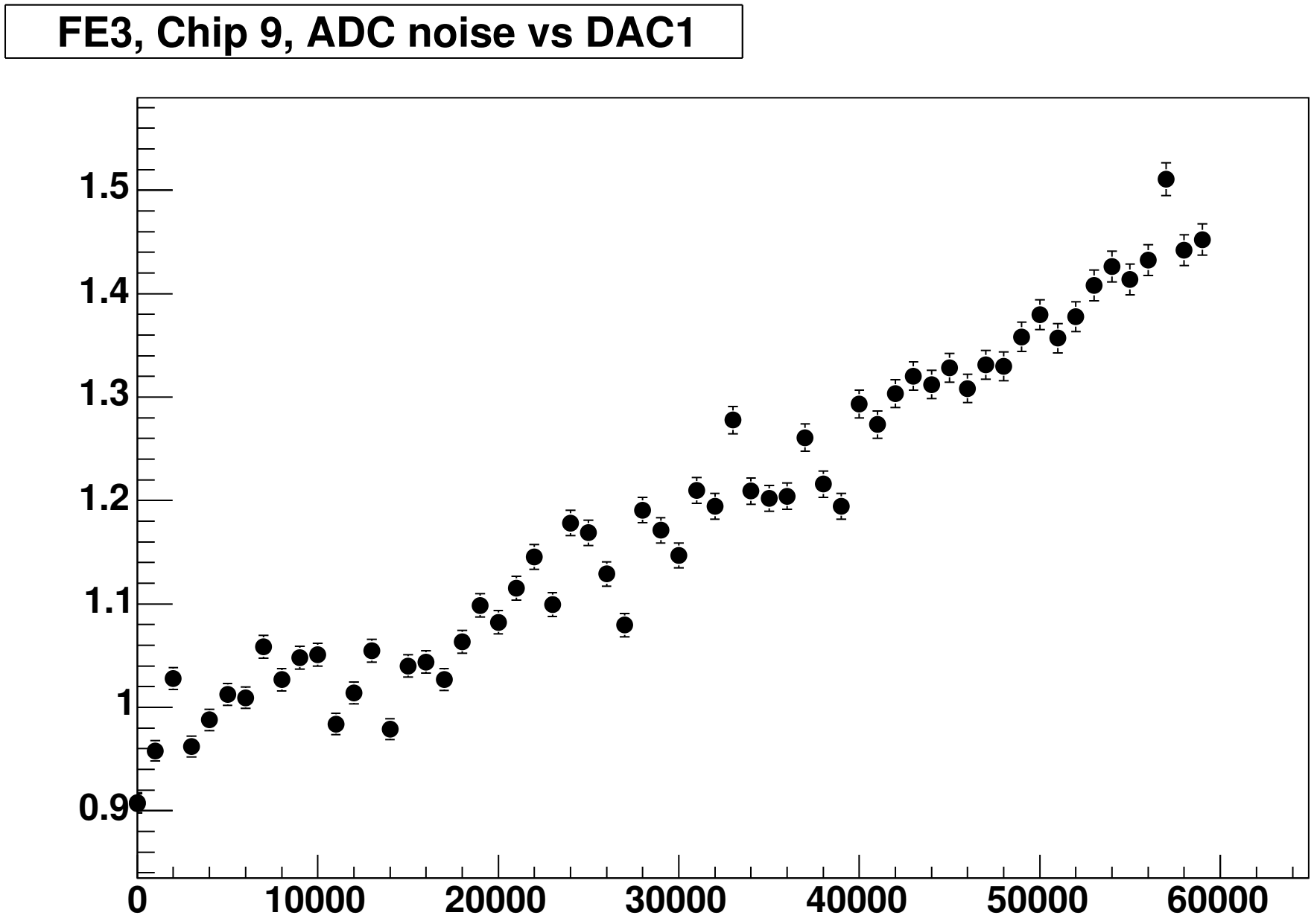

FE3, Chip 8, ADC residuals vs DAC1
4
3
2
1
0
-1
0
10000
20000
30000
40000
50000
60000

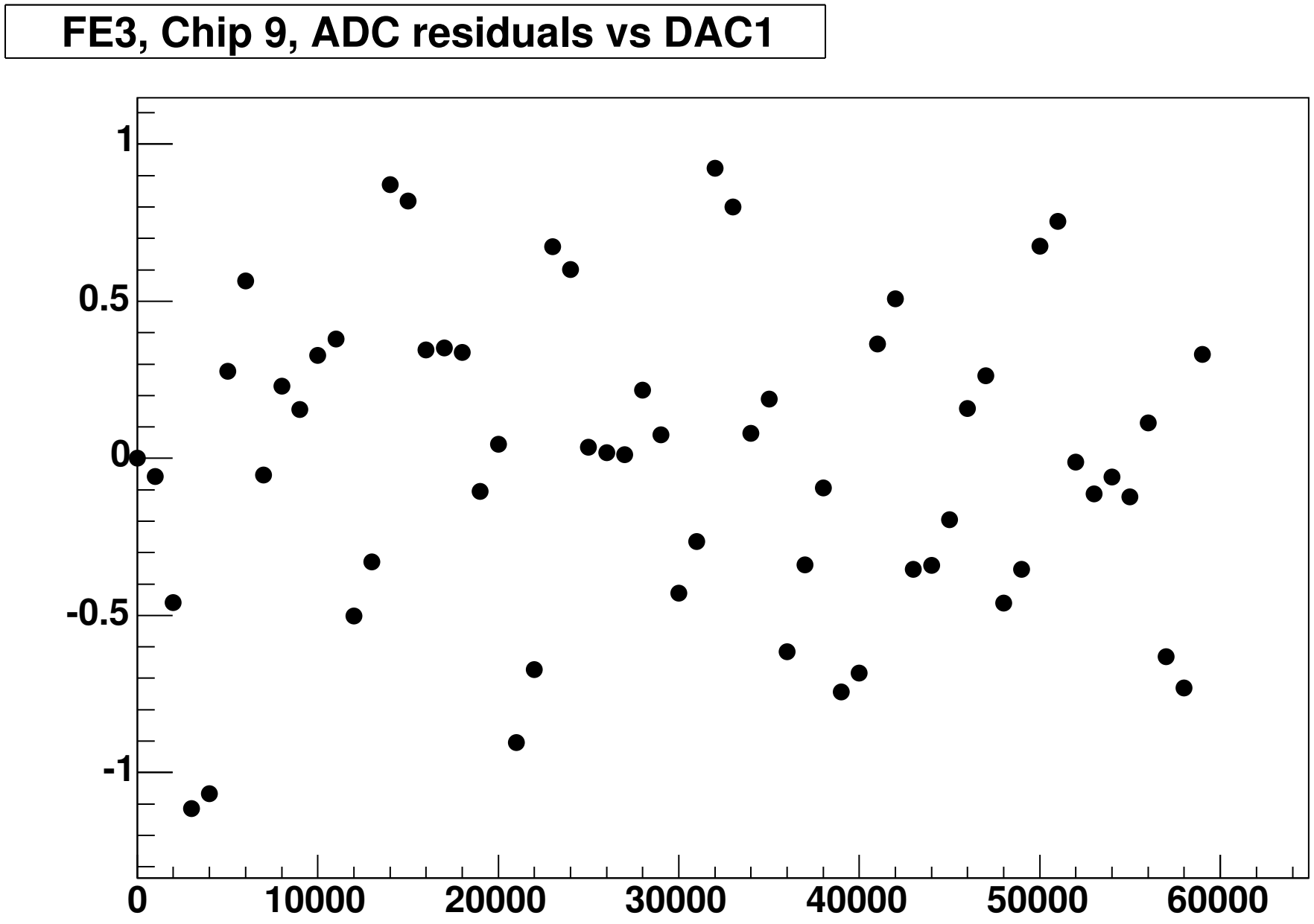

FE3, Chip 9, ADC mean vs DAC0
χ² / ndf 7.864e+04 / 57
p0 94.47 ± 0.003577
p1 3.553e-06 ± 1.05e-07
95.2
95
94.8
94.6
94.4
94.2
94
93.8
93.6
93.4
0
10000
20000
30000
40000
50000
60000

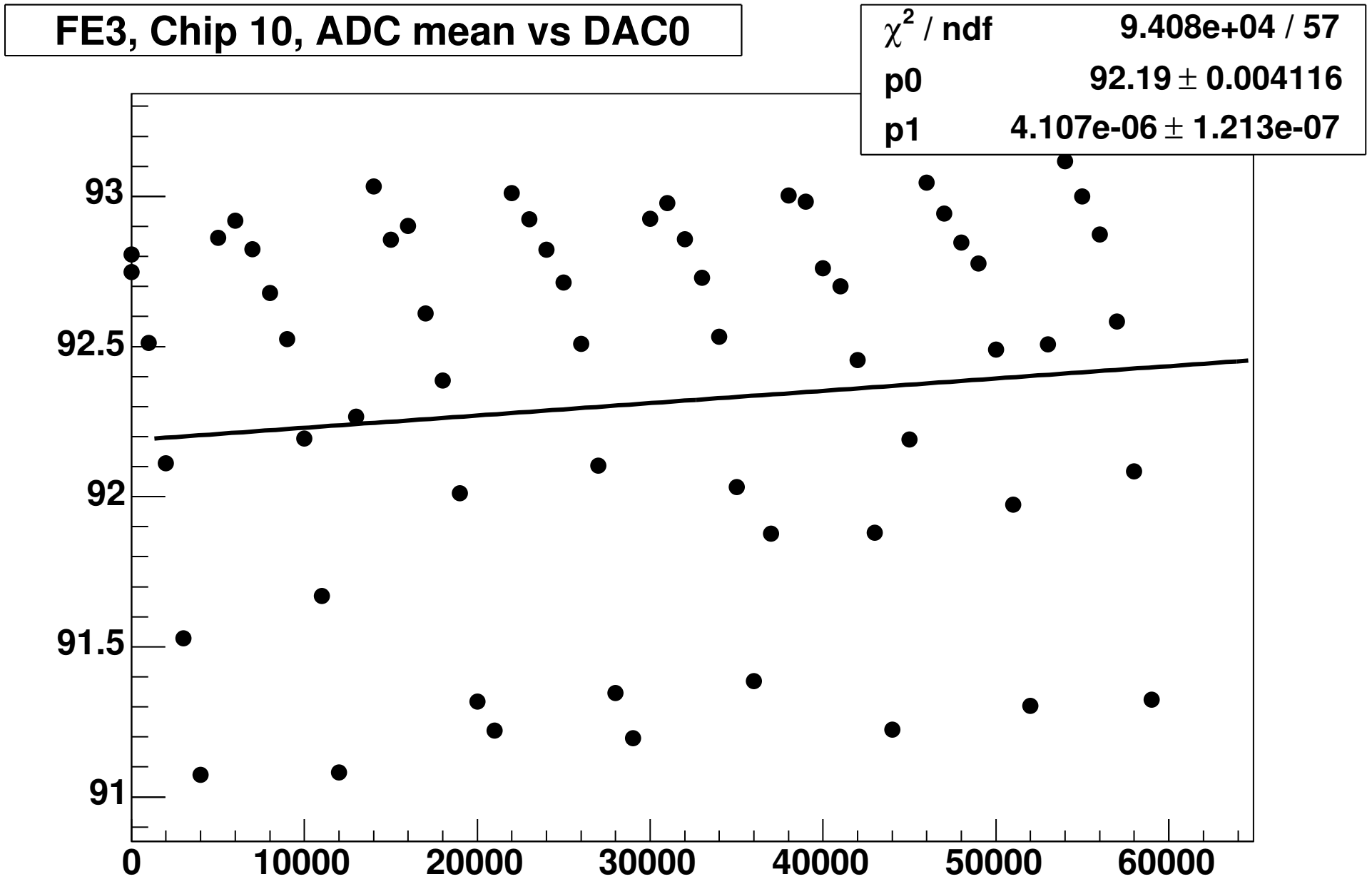

FE3, Chip 9, ADC noise vs DAC0
1.8
1.6
1.4
1.2
1
0.8
0
10000
20000
30000
40000
50000
60000

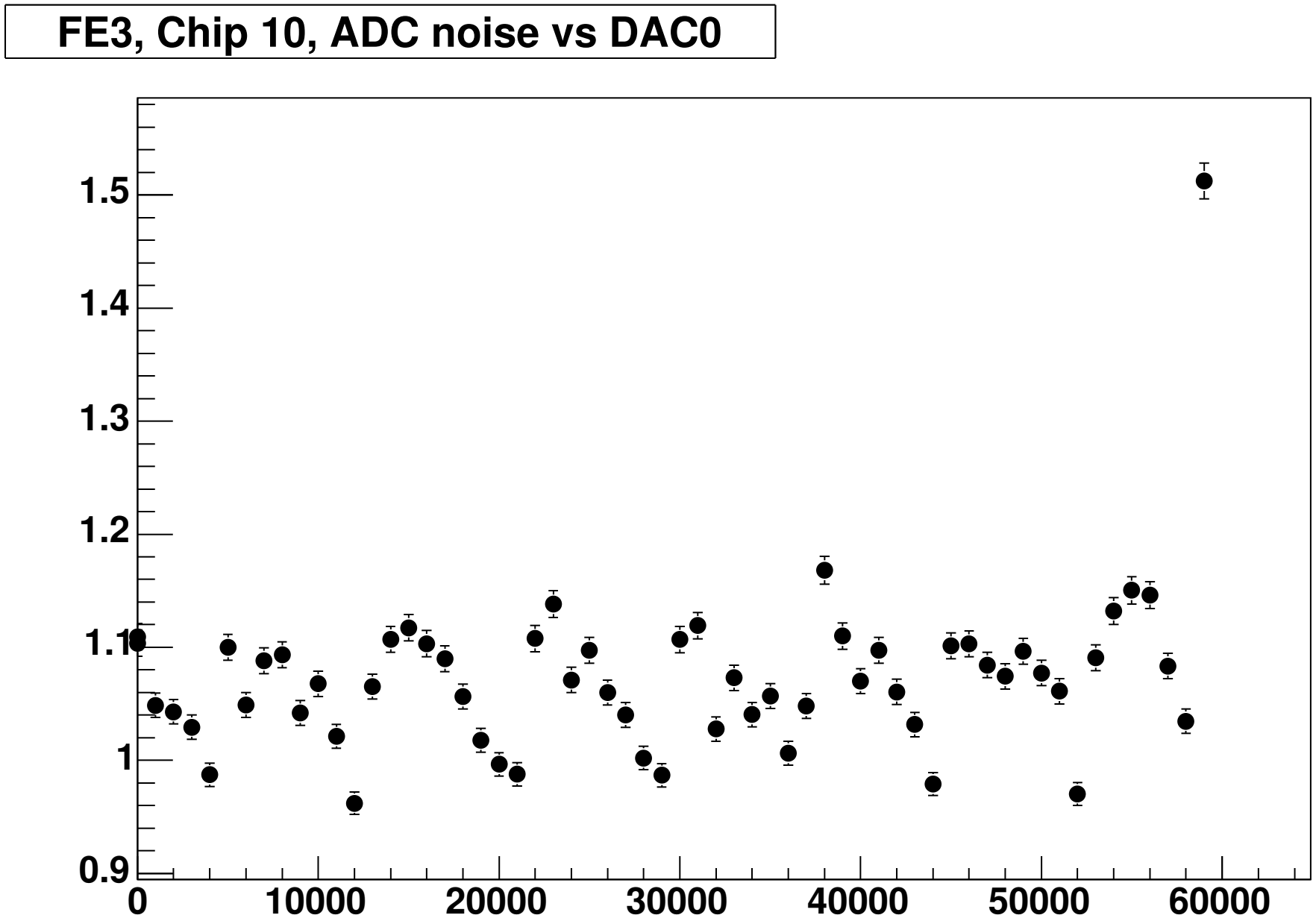

FE3, Chip 9, ADC residuals vs DAC0
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
0
10000
20000
30000
40000
50000
60000

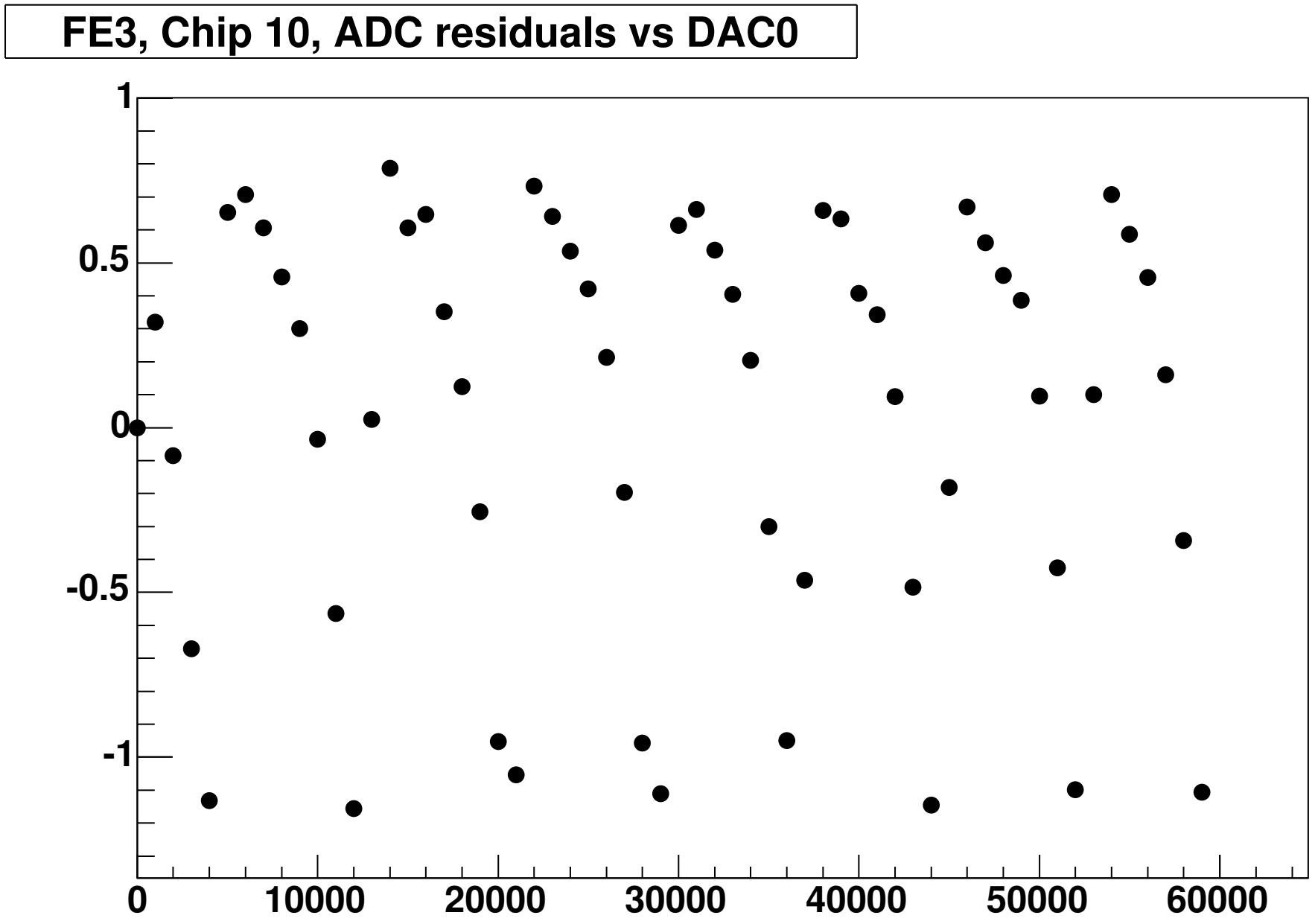

FE3, Chip 9, ADC mean vs DAC1
χ² / ndf 5.11e+04 / 57
p0 -49.39 ± 0.004138
p1 0.2294 ± 1.344e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

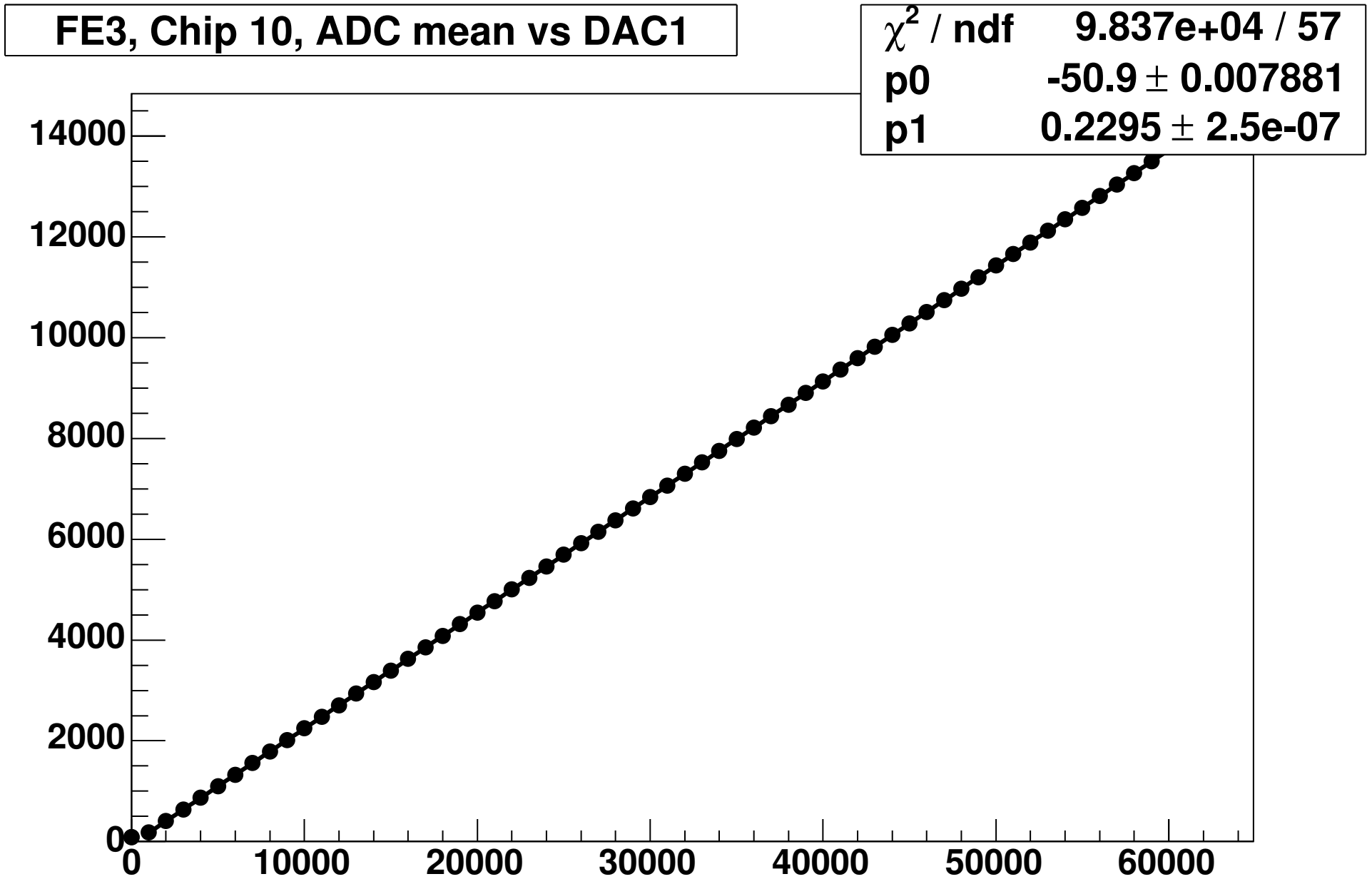

FE3, Chip 9, ADC noise vs DAC1
1.5
1.4
1.3
1.2
1.1
1
0.9
0
10000
20000
30000
40000
50000
60000

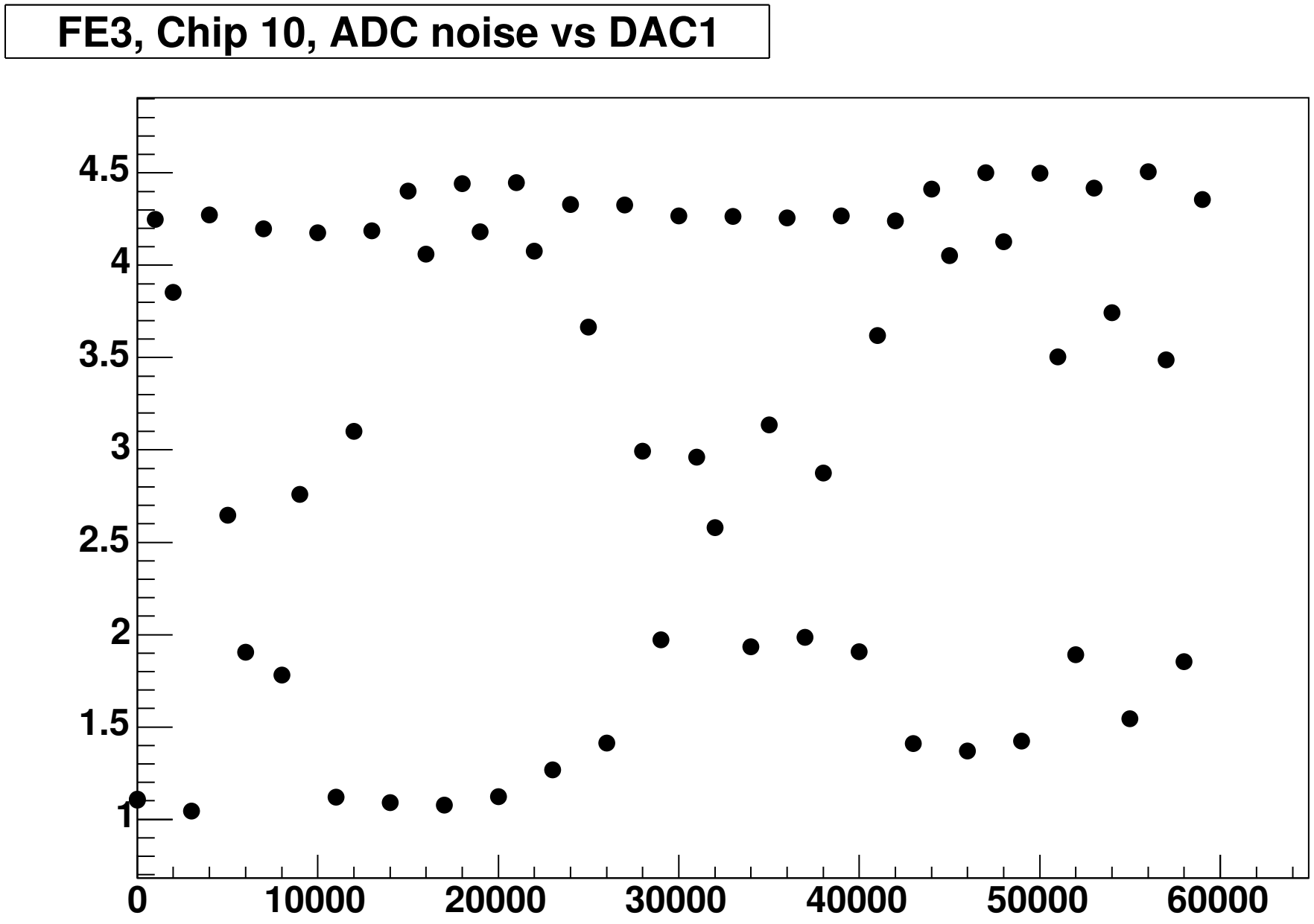

FE3, Chip 9, ADC residuals vs DAC1
1
0.5
0
-0.5
-1
0
10000
20000
30000
40000
50000
60000

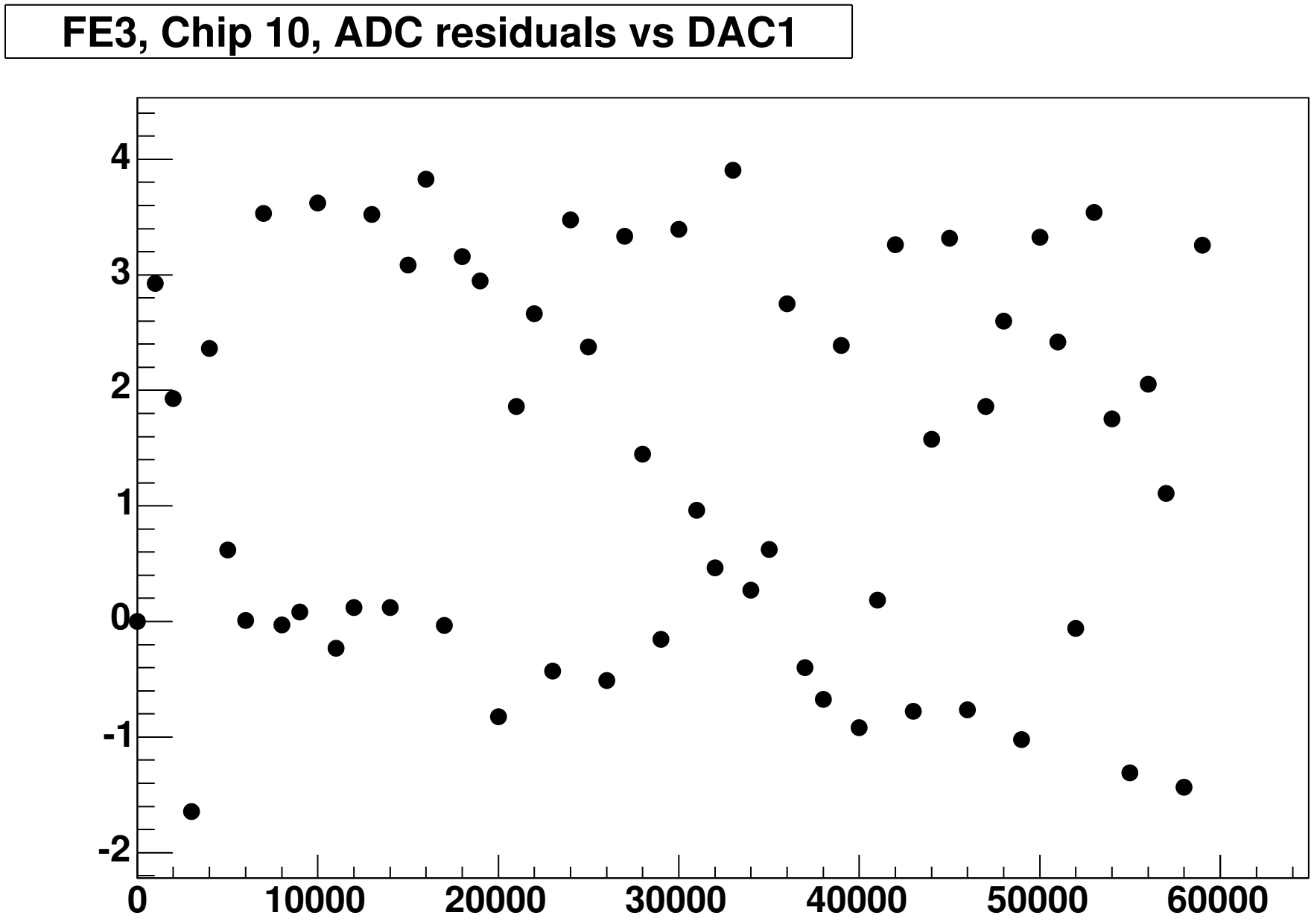

FE3, Chip 10, ADC mean vs DAC0
χ² / ndf 9.408e+04 / 57
p0 92.19 ± 0.004116
p1 4.107e-06 ± 1.213e-07
93
92.5
92
91.5
91
0
10000
20000
30000
40000
50000
60000

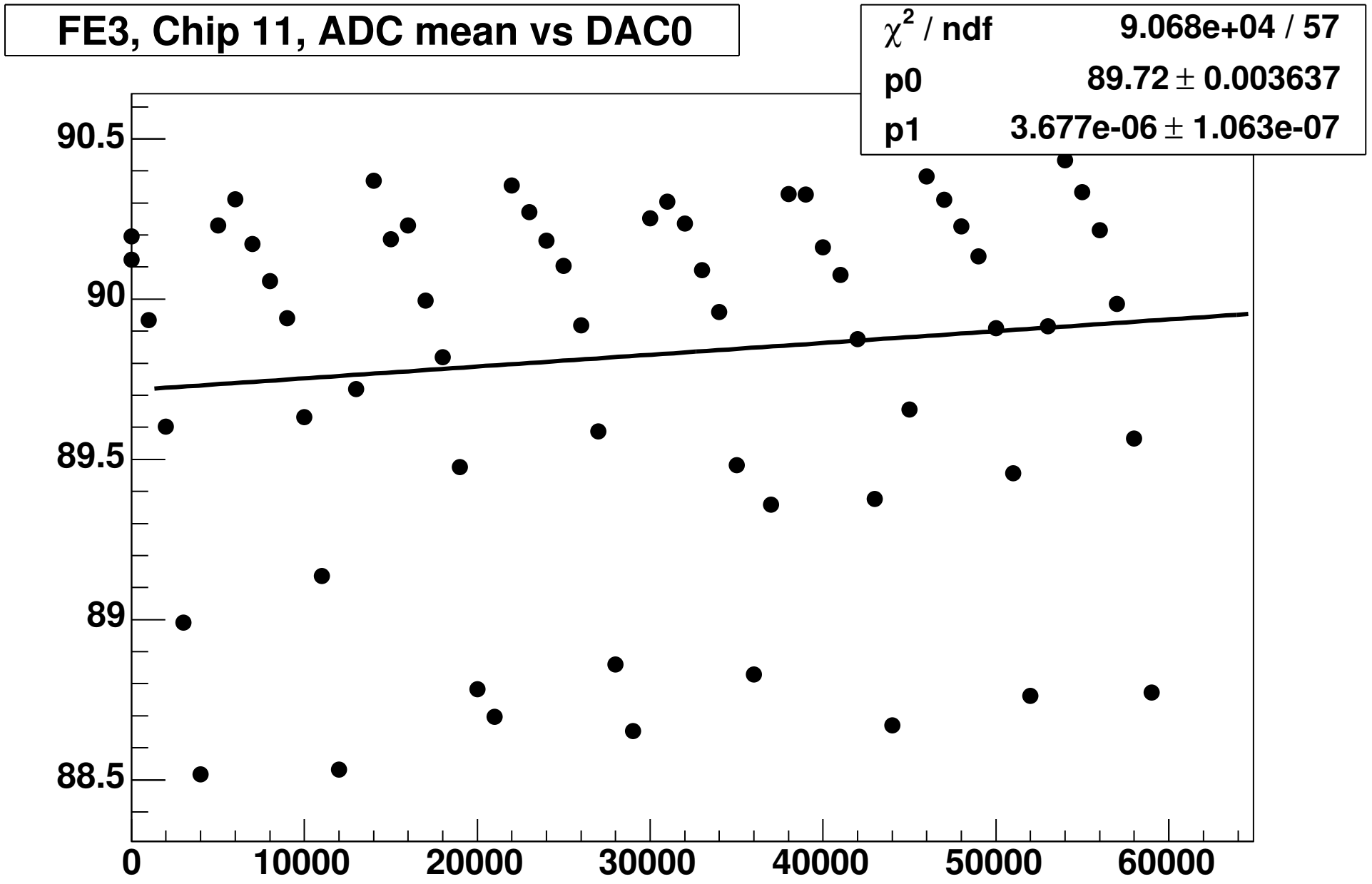

FE3, Chip 10, ADC noise vs DAC0
1.5
1.4
1.3
1.2
1.1
1
0.9
0
10000
20000
30000
40000
50000
60000

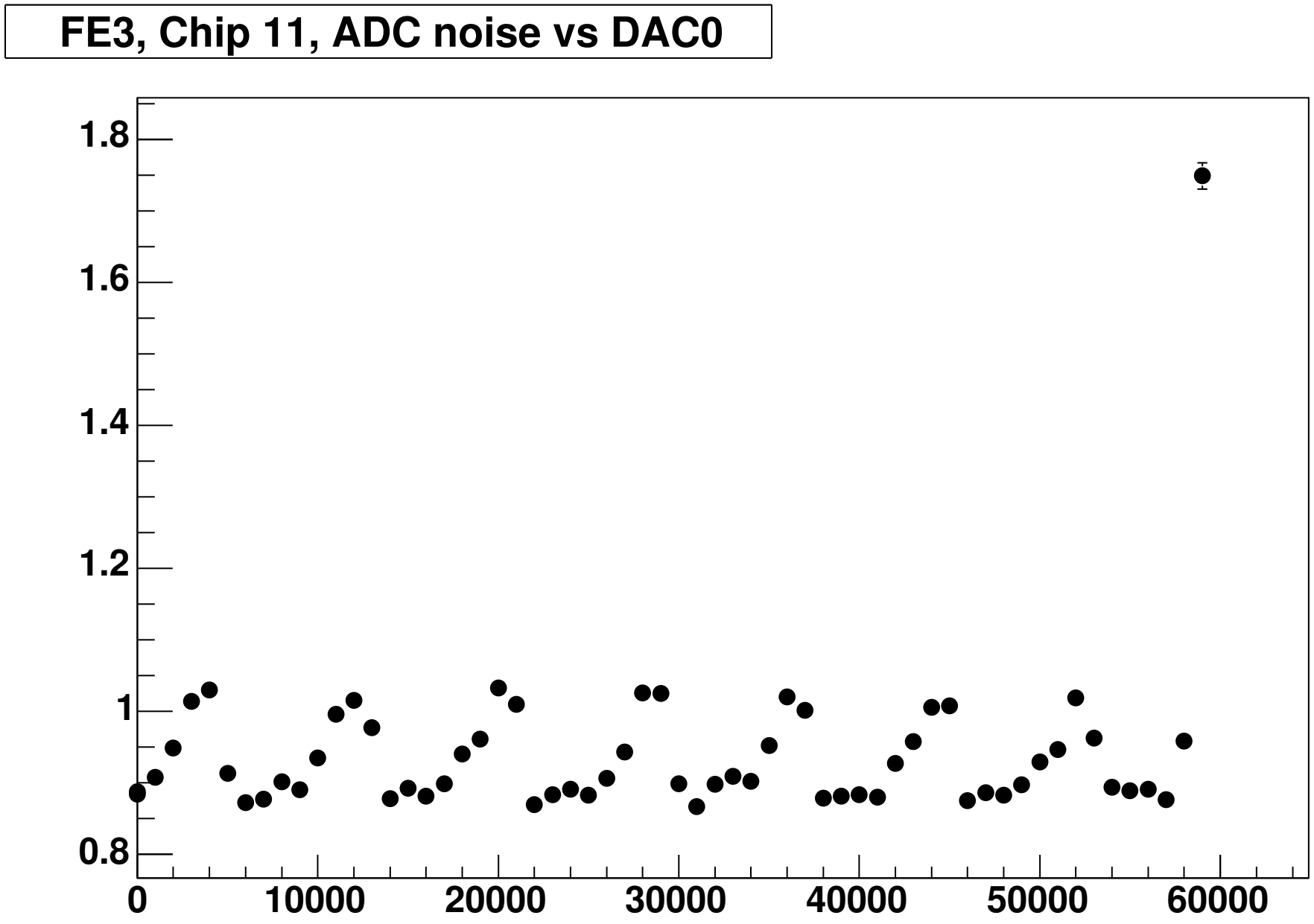

FE3, Chip 10, ADC residuals vs DAC0
1
0.5
0
-0.5
-1
0
10000
20000
30000
40000
50000
60000

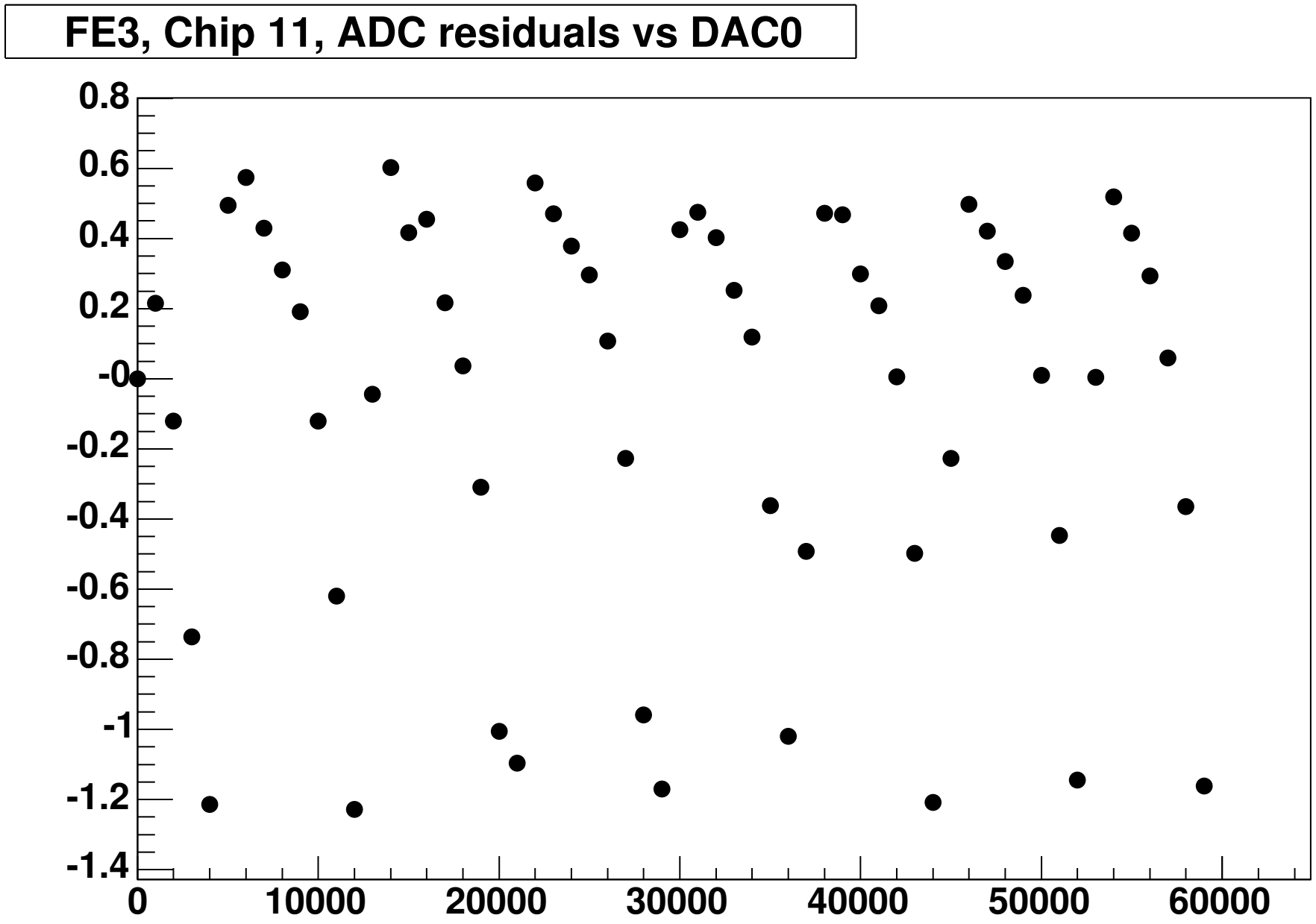

FE3, Chip 10, ADC mean vs DAC1
χ^2 / ndf 9.837e+04 / 57
p0 -50.9 ± 0.007881
p1 0.2295 ± 2.5e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

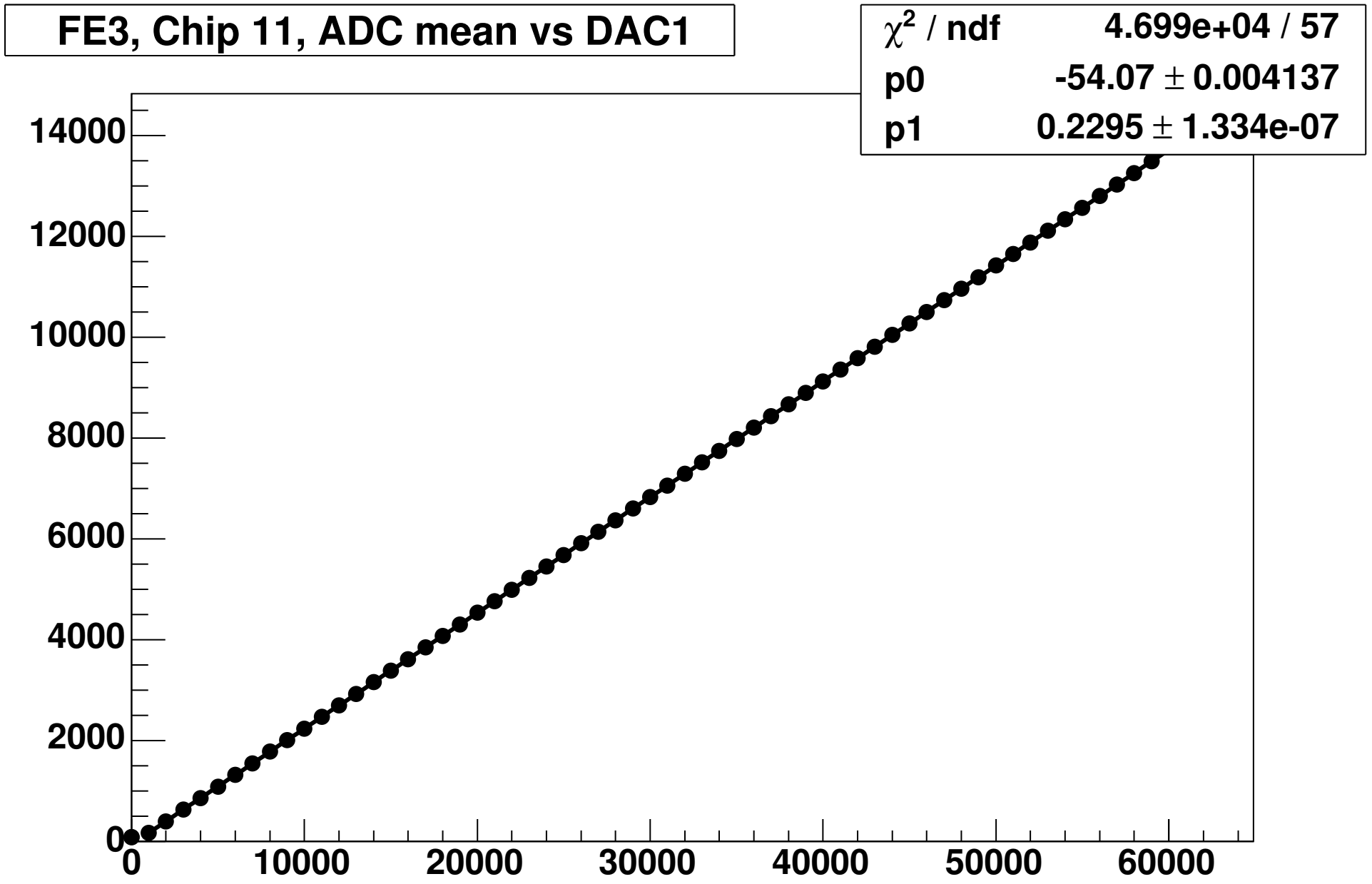

FE3, Chip 10, ADC noise vs DAC1
4.5
4
3.5
3
2.5
2
1.5
1
0
10000
20000
30000
40000
50000
60000

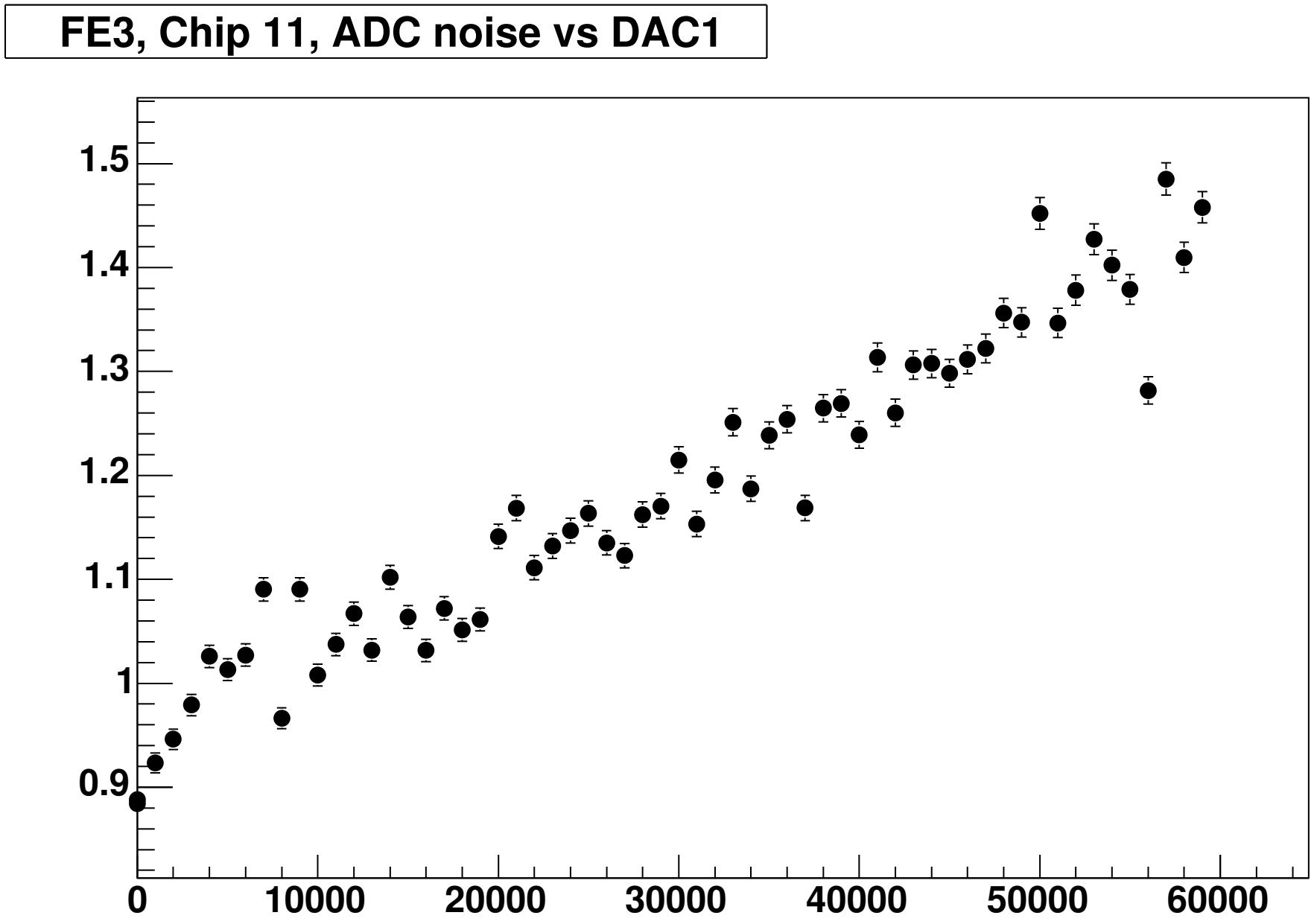

FE3, Chip 10, ADC residuals vs DAC1
4
3
2
1
0
-1
-2
0
10000
20000
30000
40000
50000
60000

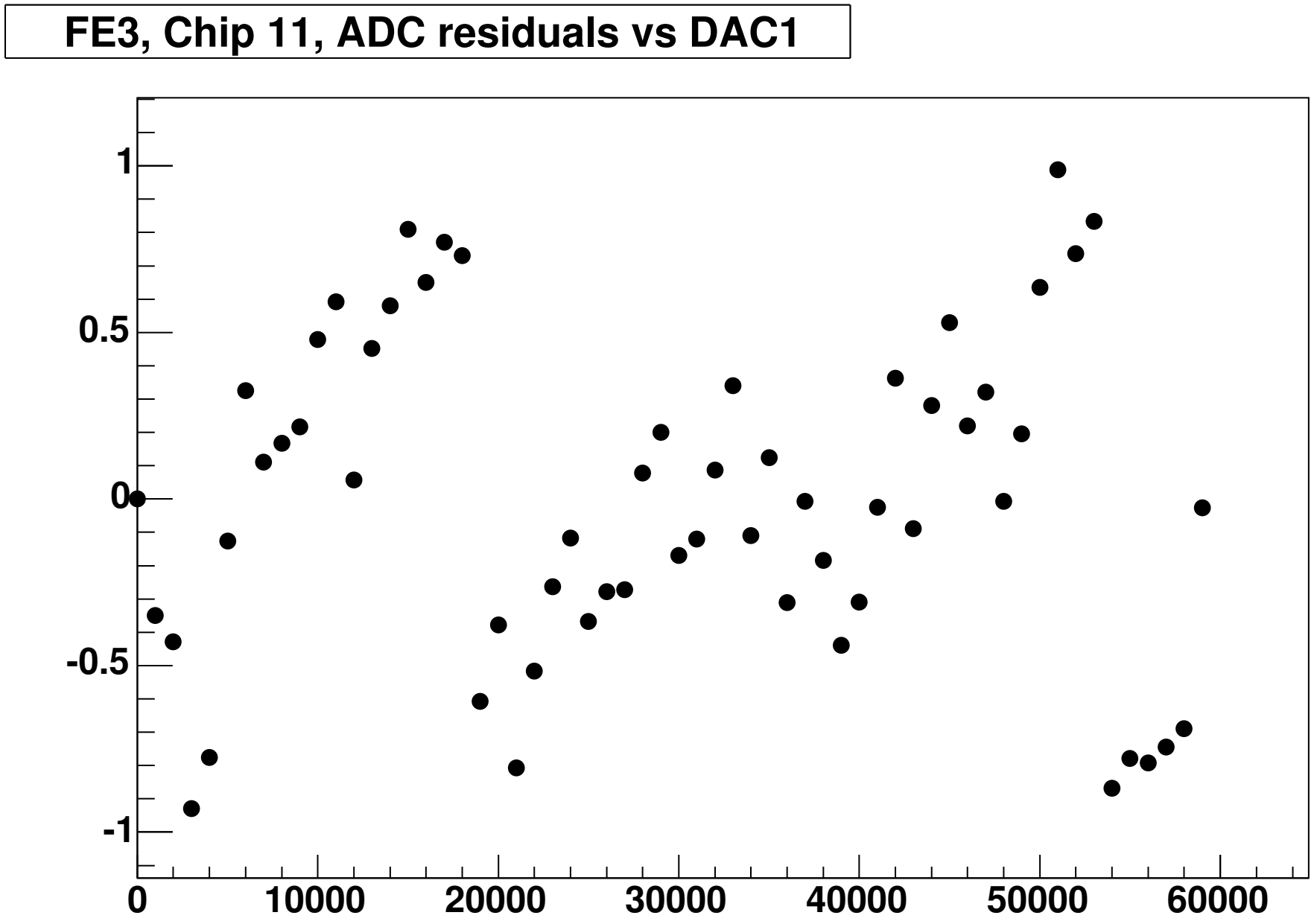

FE3, Chip 11, ADC mean vs DAC0
χ² / ndf 9.068e+04 / 57
p0 89.72 ± 0.003637
p1 3.677e-06 ± 1.063e-07
90.5
90
89.5
89
88.5
0
10000
20000
30000
40000
50000
60000

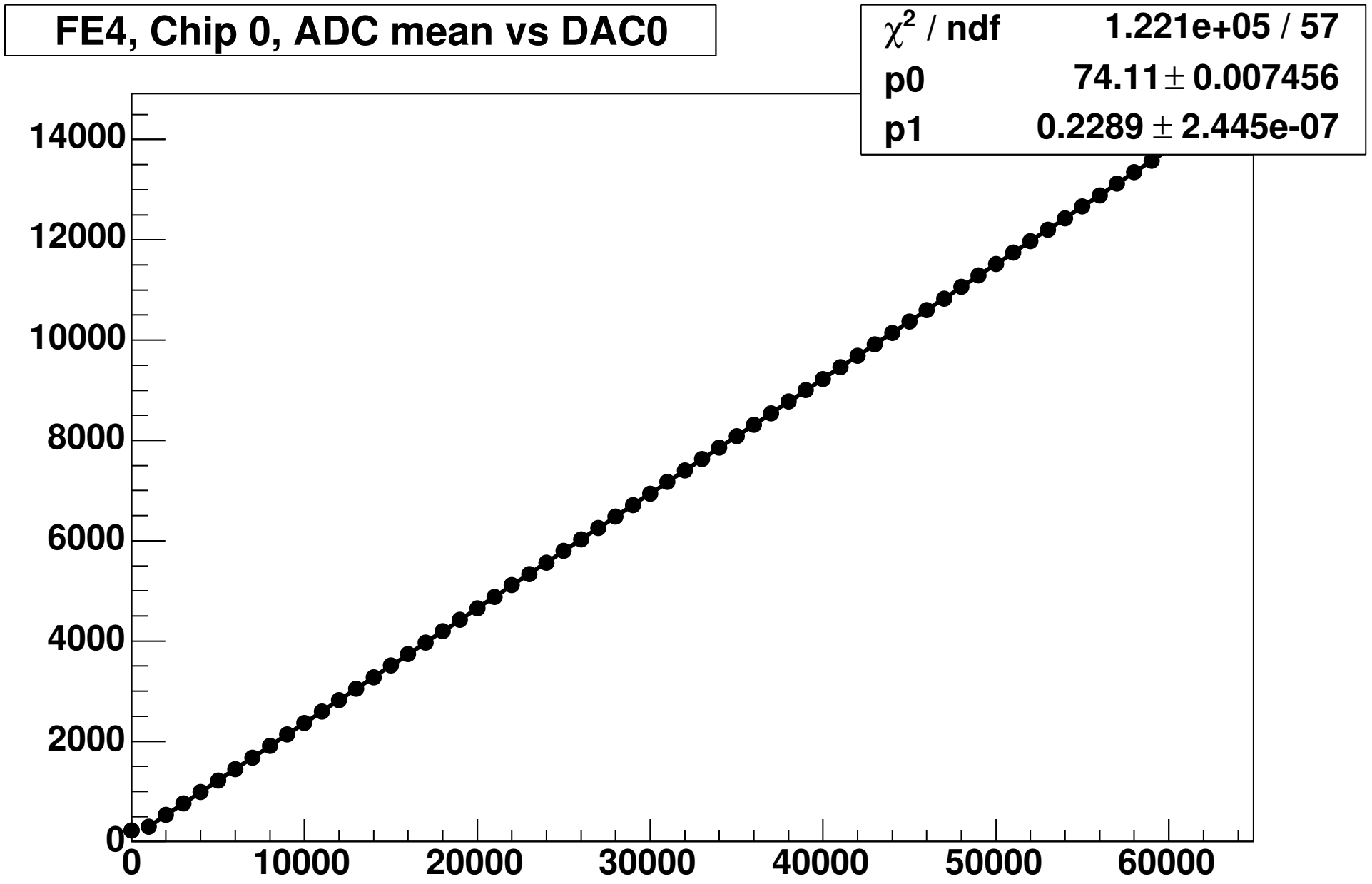

FE3, Chip 11, ADC noise vs DAC0
1.8
1.6
1.4
1.2
1
0.8
0
10000
20000
30000
40000
50000
60000

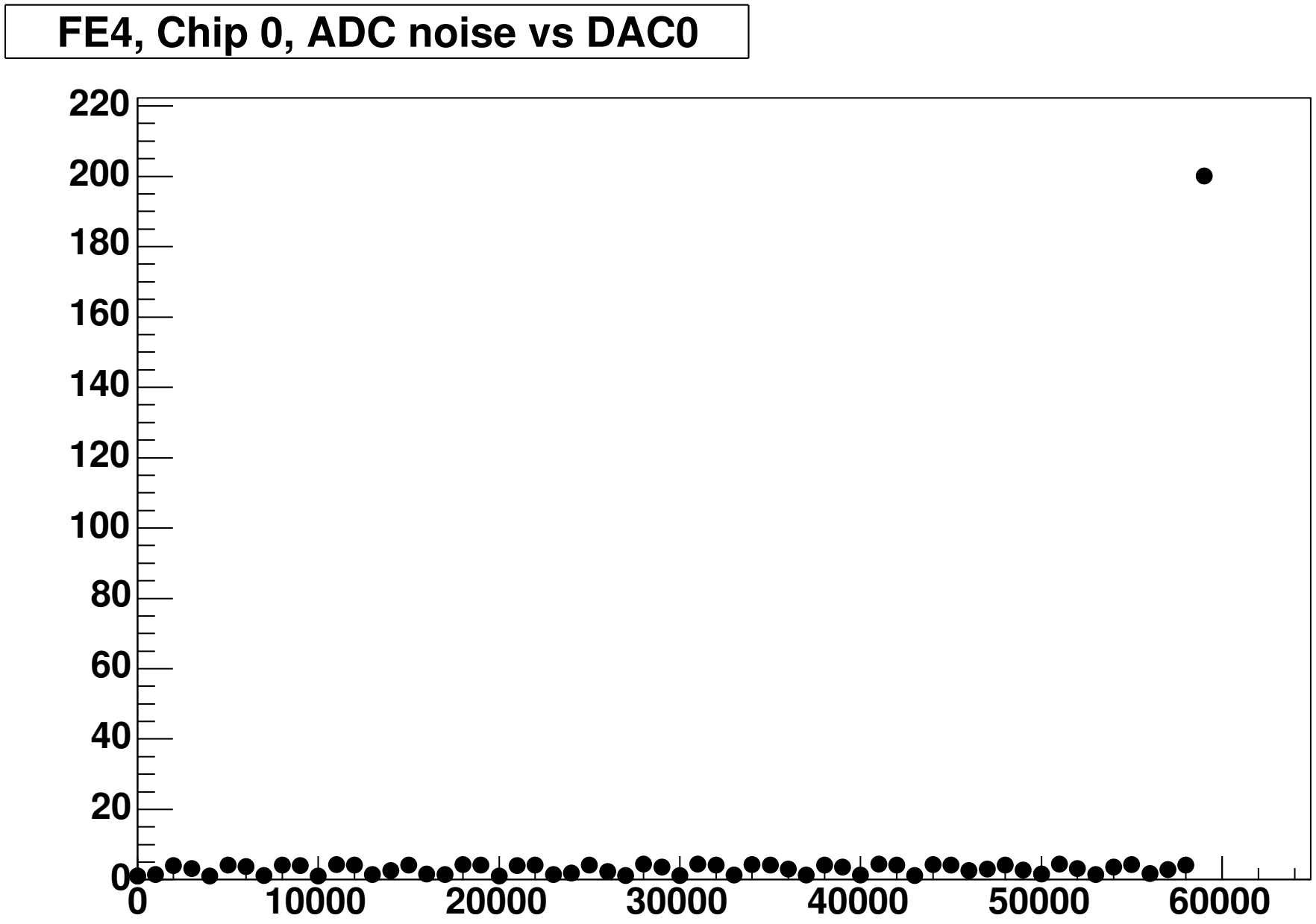

FE3, Chip 11, ADC residuals vs DAC0
0.8
0.6
0.4
0.2
-0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
-1.4
0
10000
20000
30000
40000
50000
60000

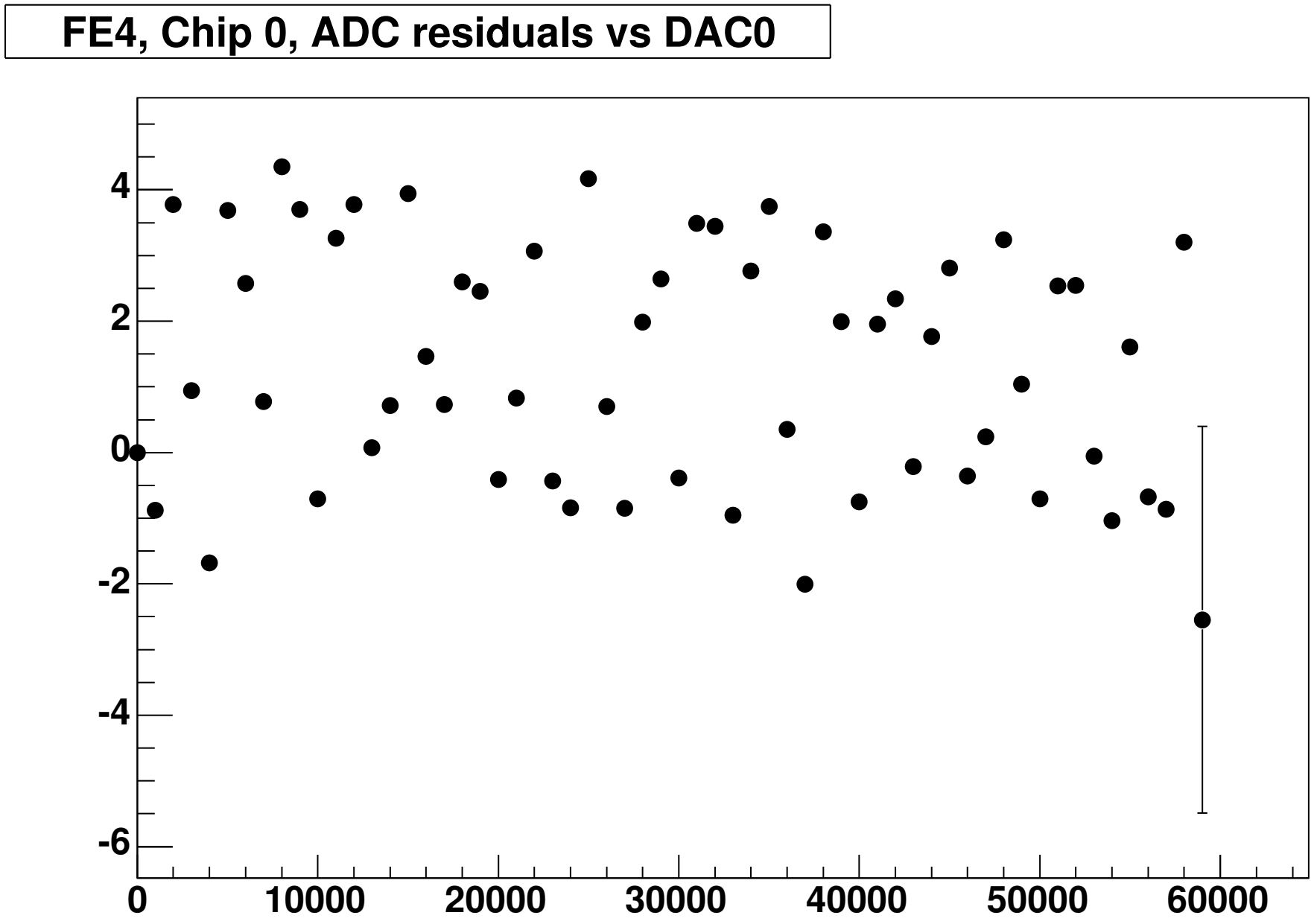

FE3, Chip 11, ADC mean vs DAC1
χ² / ndf 4.699e+04 / 57
p0 -54.07 ± 0.004137
p1 0.2295 ± 1.334e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

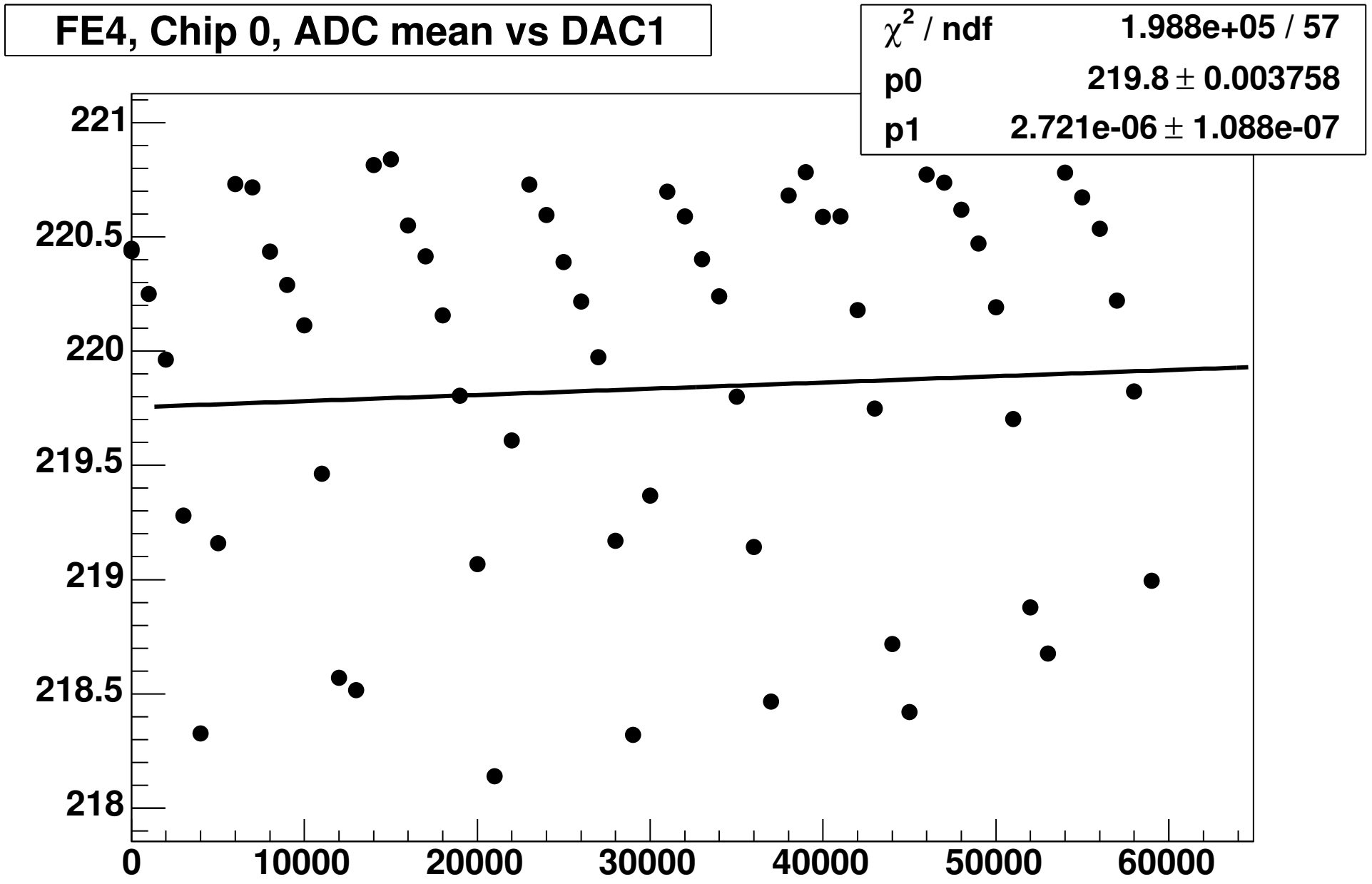

FE3, Chip 11, ADC noise vs DAC1
1.5
1.4
1.3
1.2
1.1
1
0.9
0
10000
20000
30000
40000
50000
60000

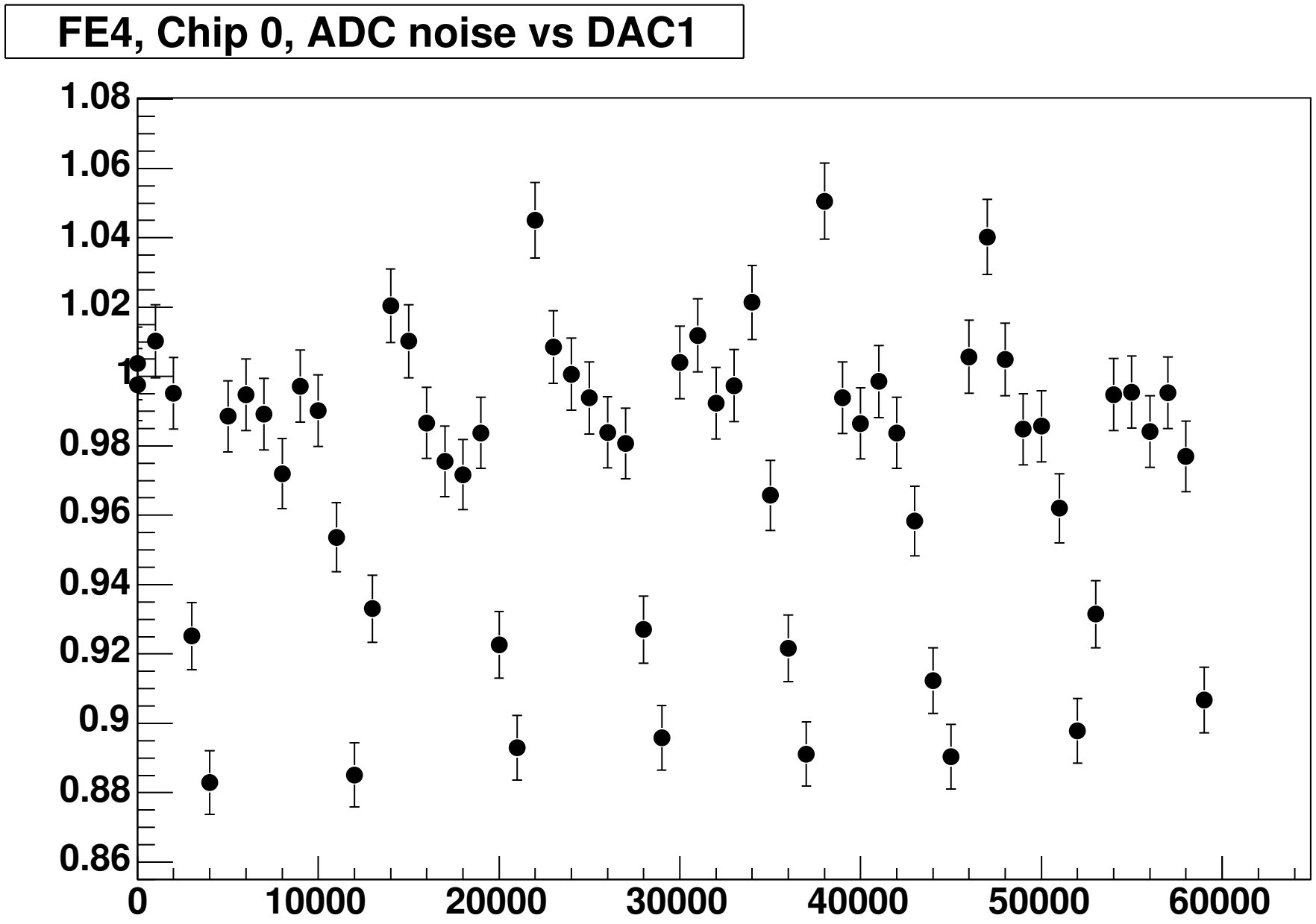

FE3, Chip 11, ADC residuals vs DAC1
1
0.5
0
-0.5
-1
0
10000
20000
30000
40000
50000
60000

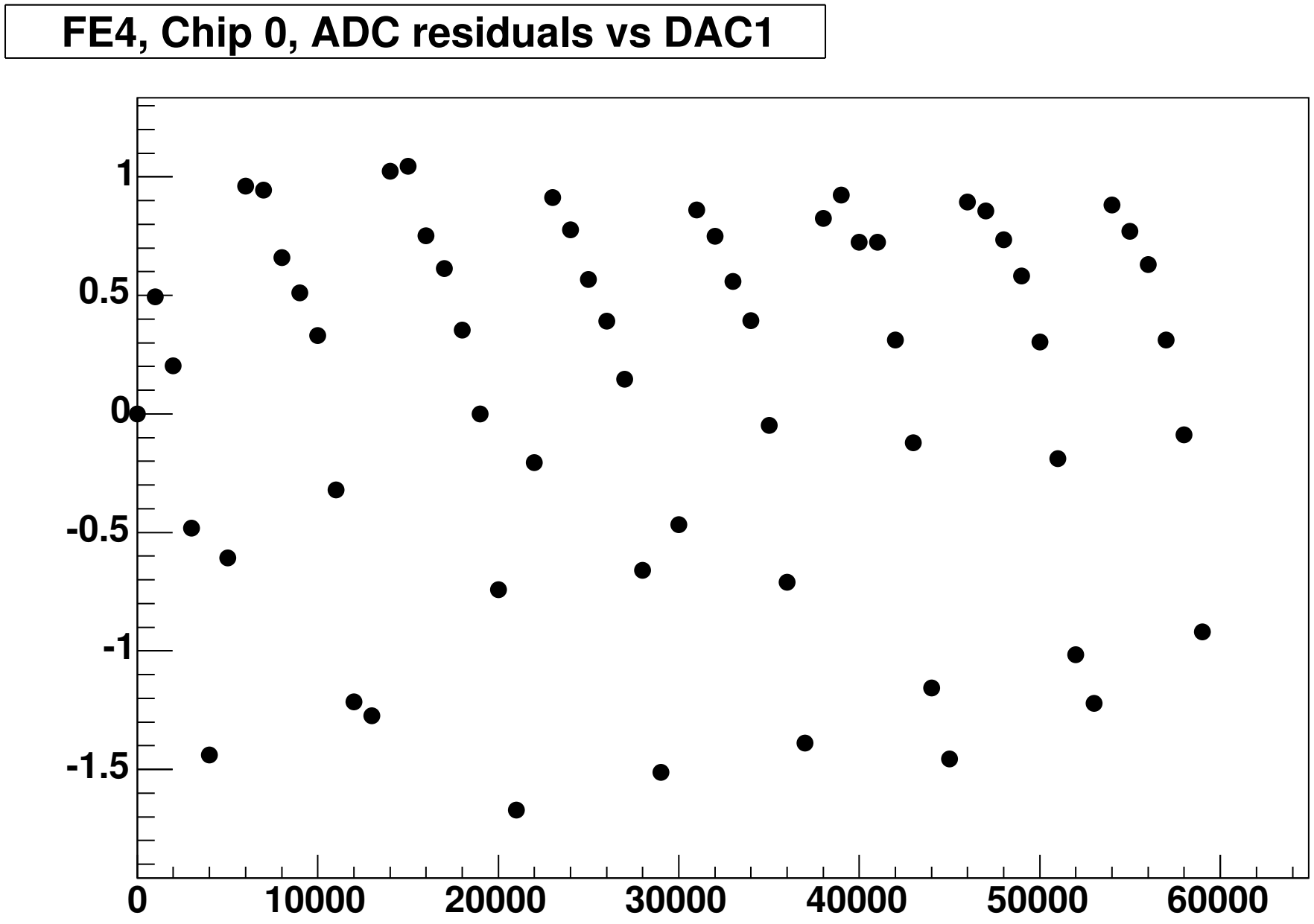

FE4, Chip 0, ADC mean vs DAC0
χ² / ndf 1.221e+05 / 57
p0 74.11 ± 0.007456
p1 0.2289 ± 2.445e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

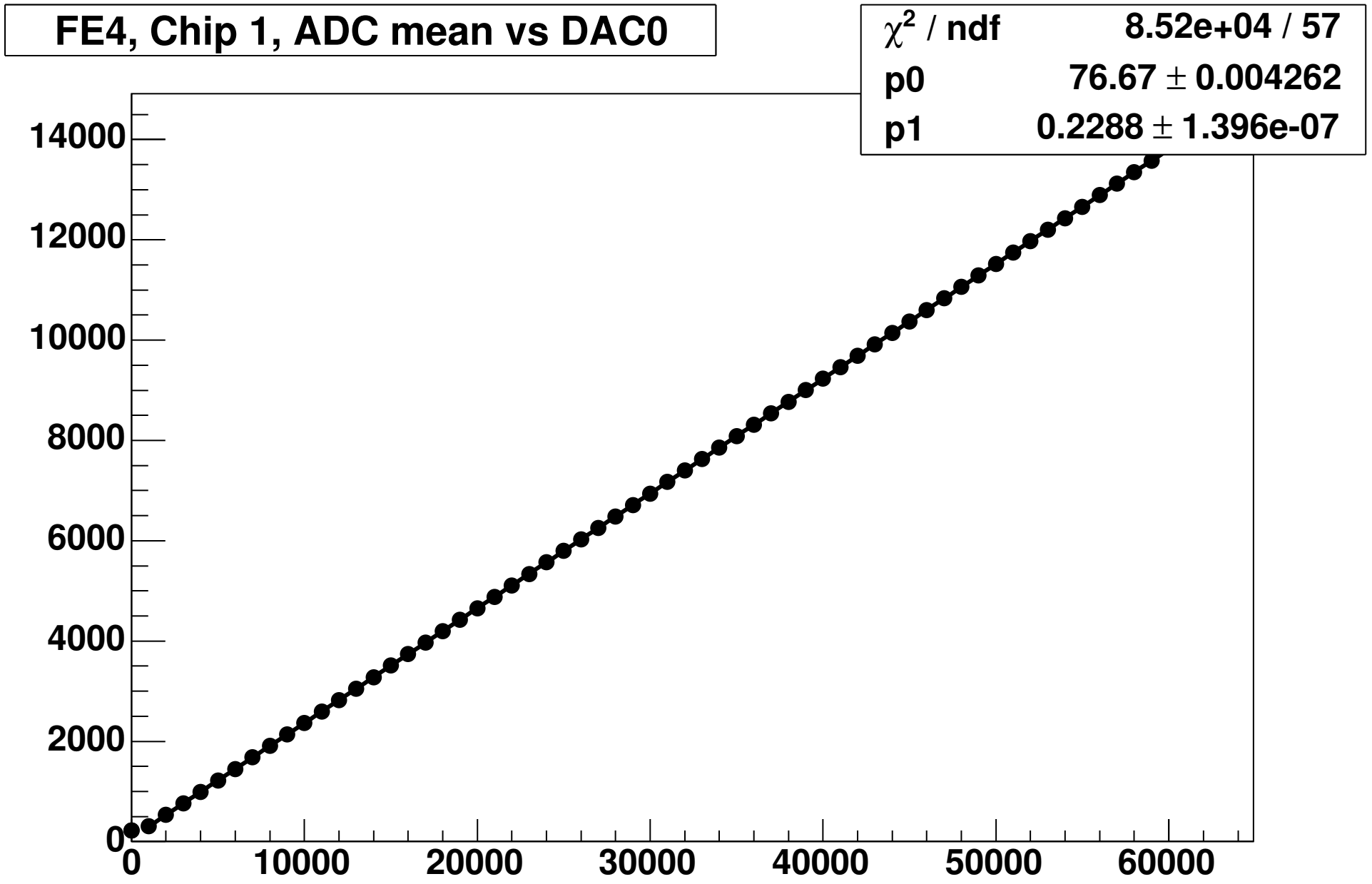

FE4, Chip 0, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

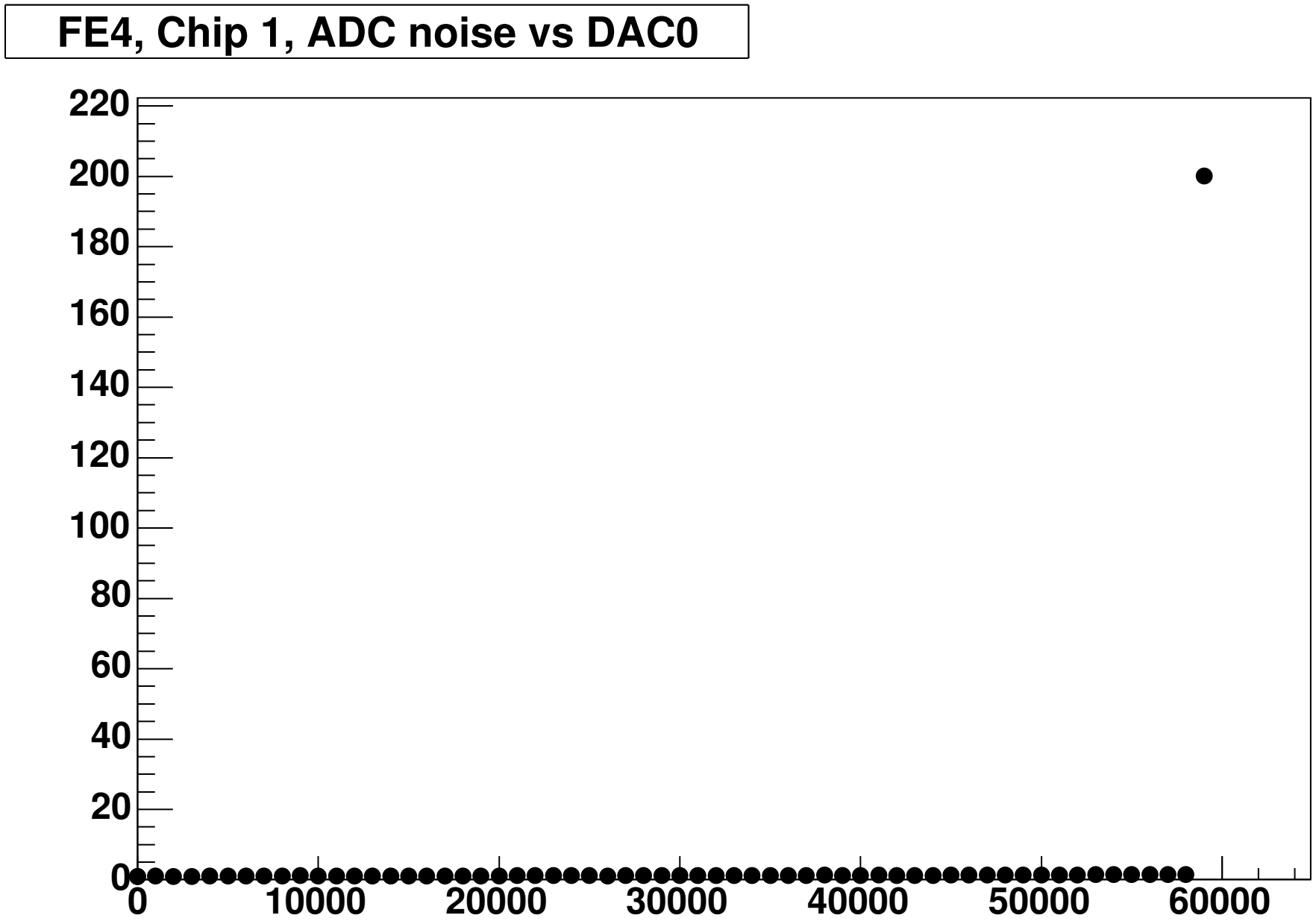

FE4, Chip 0, ADC residuals vs DAC0
4
2
0
-2
-4
-6
0
10000
20000
30000
40000
50000
60000

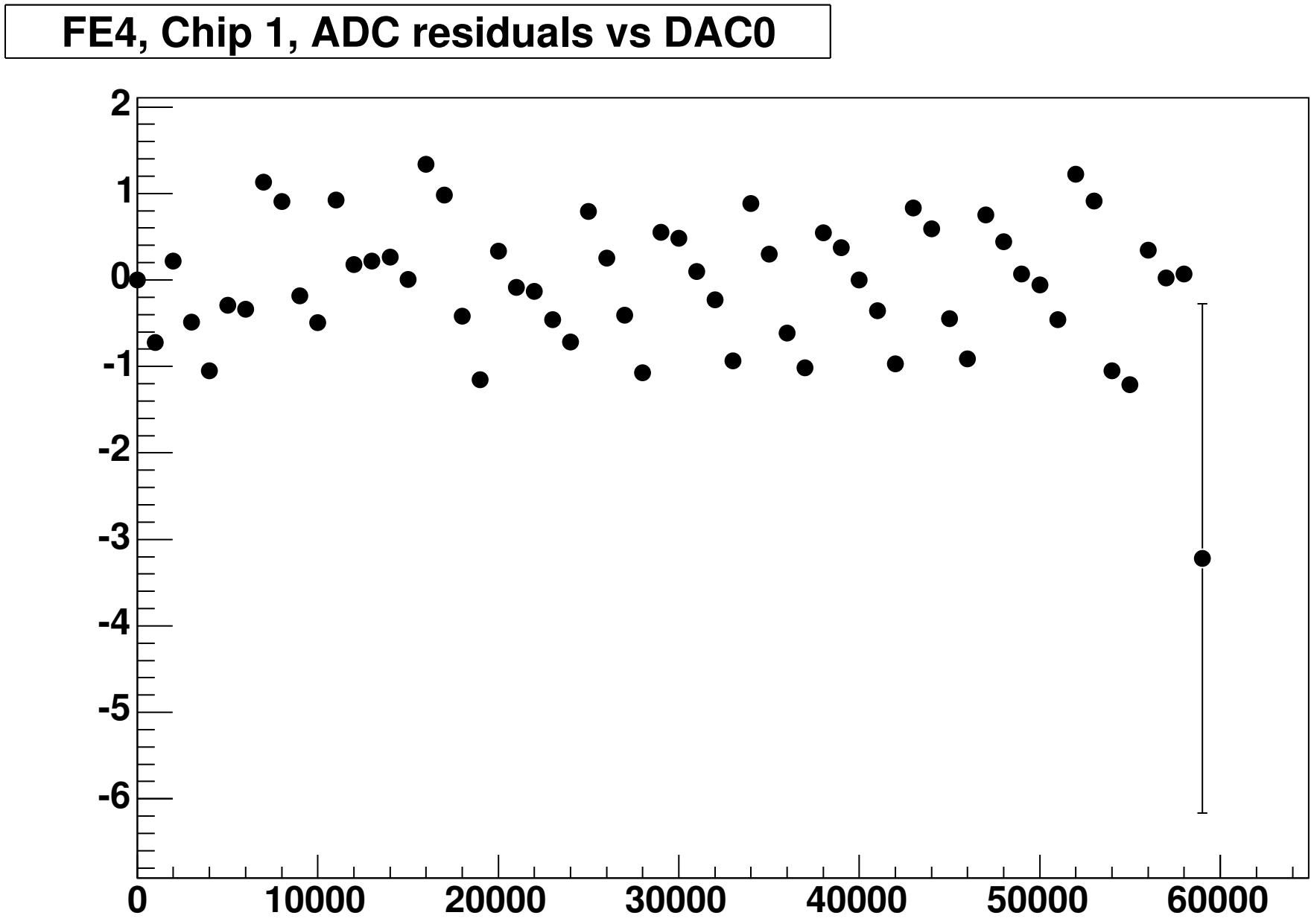

FE4, Chip 0, ADC mean vs DAC1
χ² / ndf 1.988e+05 / 57
p0 219.8 ± 0.003758
p1 2.721e-06 ± 1.088e-07
221
220.5
220
219.5
219
218.5
218
0
10000
20000
30000
40000
50000
60000

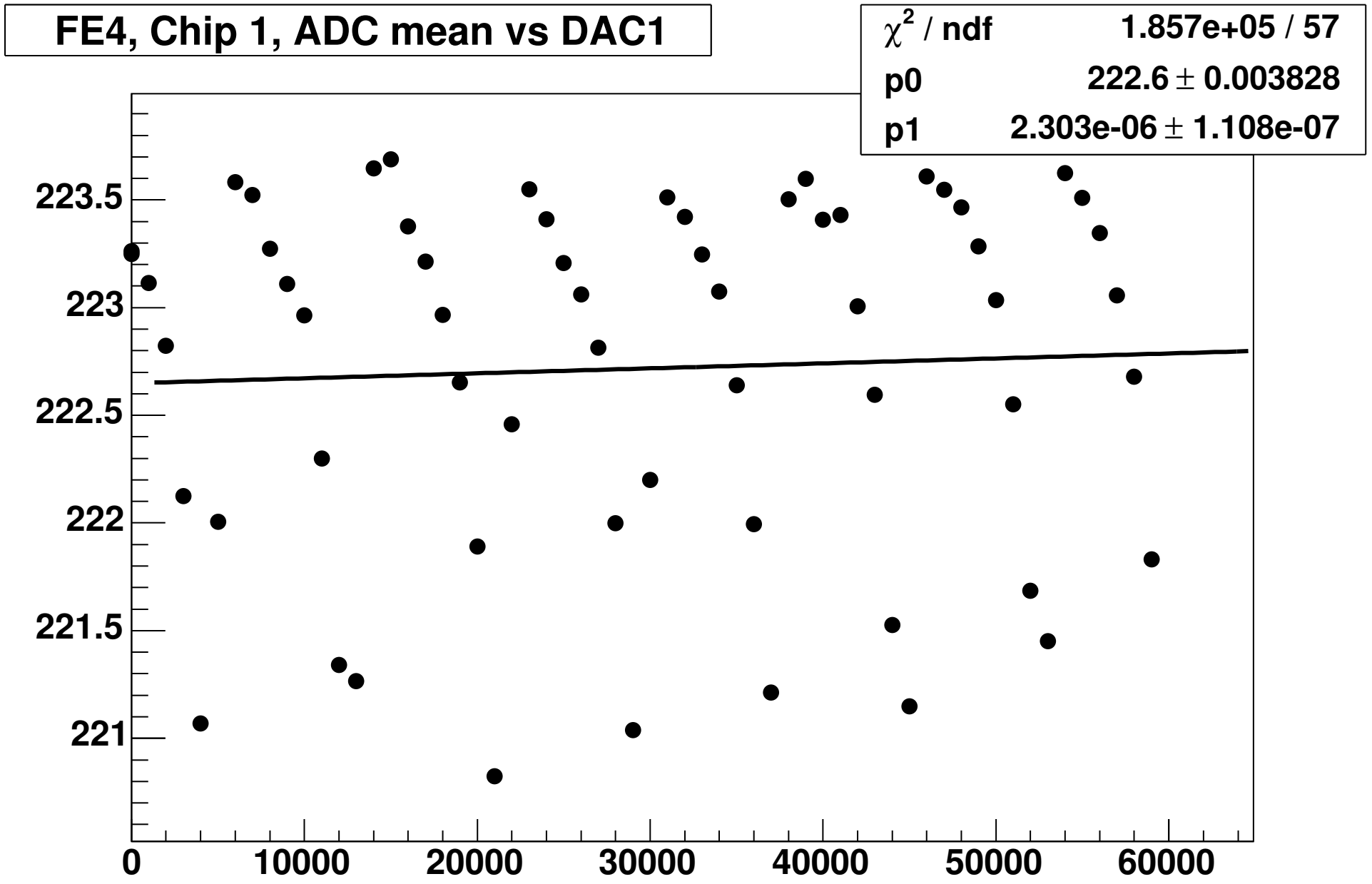

FE4, Chip 0, ADC noise vs DAC1
1.08
1.06
1.04
1.02
1
0.98
0.96
0.94
0.92
0.9
0.88
0.86
0
10000
20000
30000
40000
50000
60000

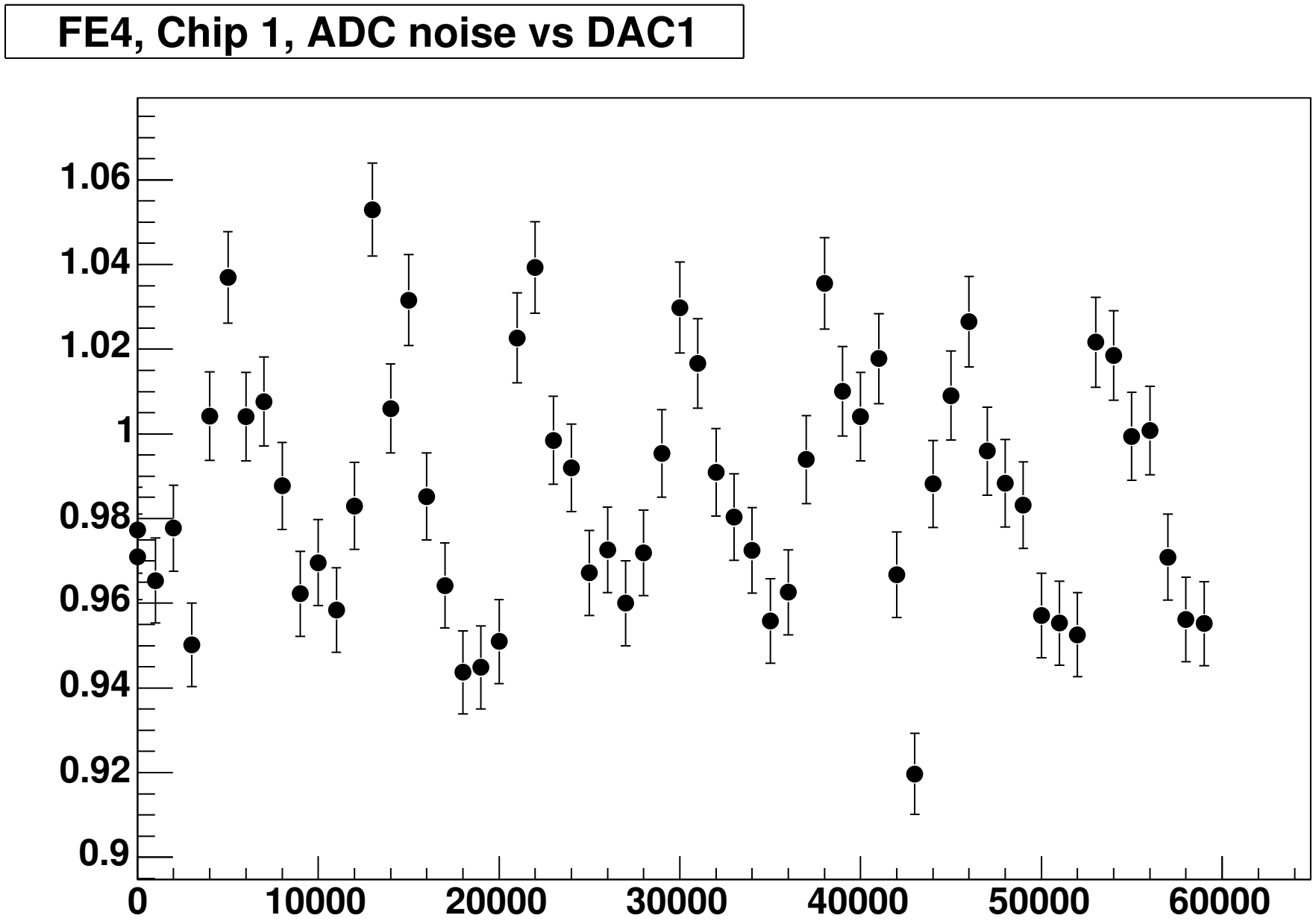

FE4, Chip 0, ADC residuals vs DAC1
1
0.5
0
-0.5
-1
-1.5
0
10000
20000
30000
40000
50000
60000

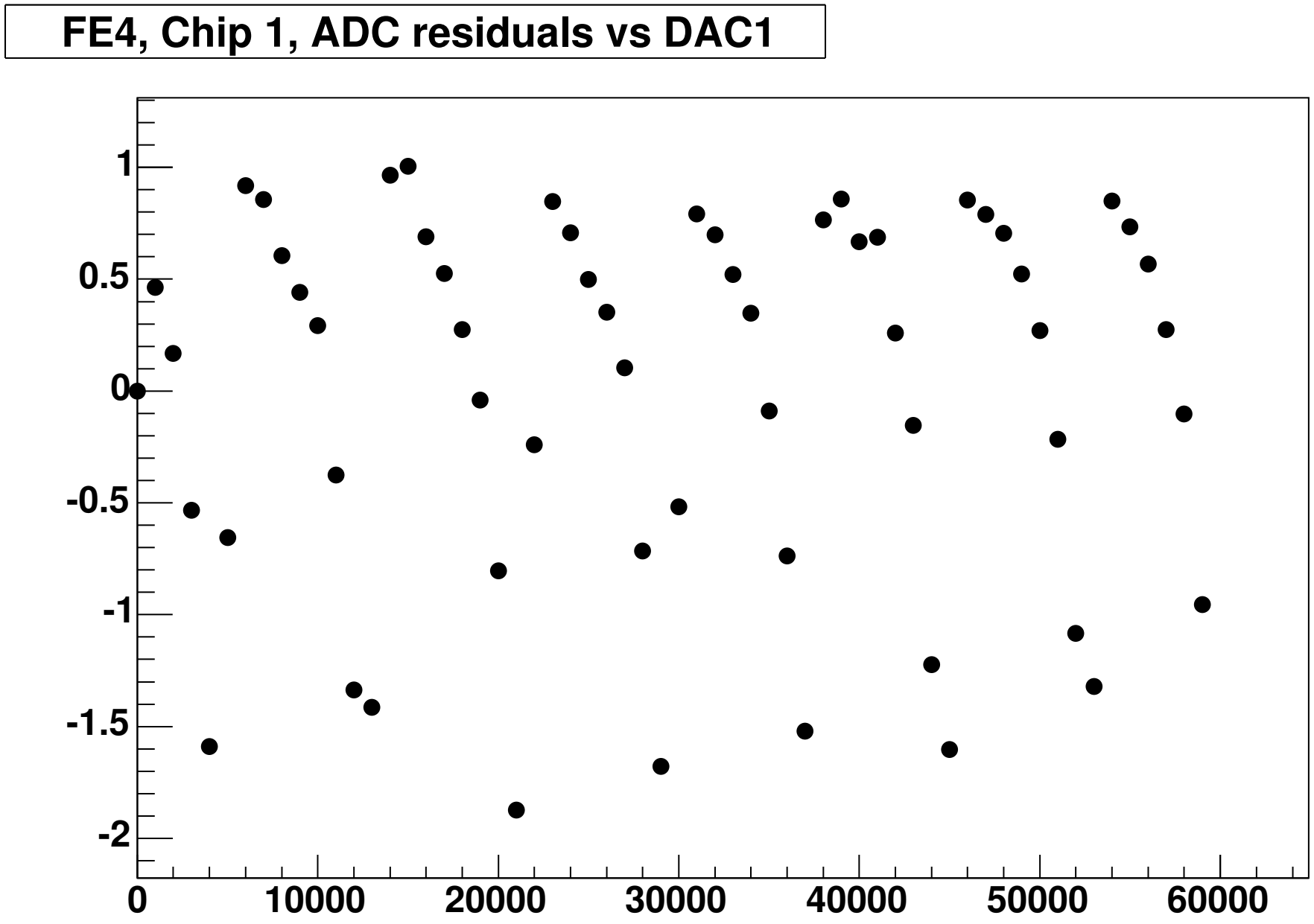

FE4, Chip 1, ADC mean vs DAC0
χ² / ndf 8.52e+04 / 57
p0 76.67 ± 0.004262
p1 0.2288 ± 1.396e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

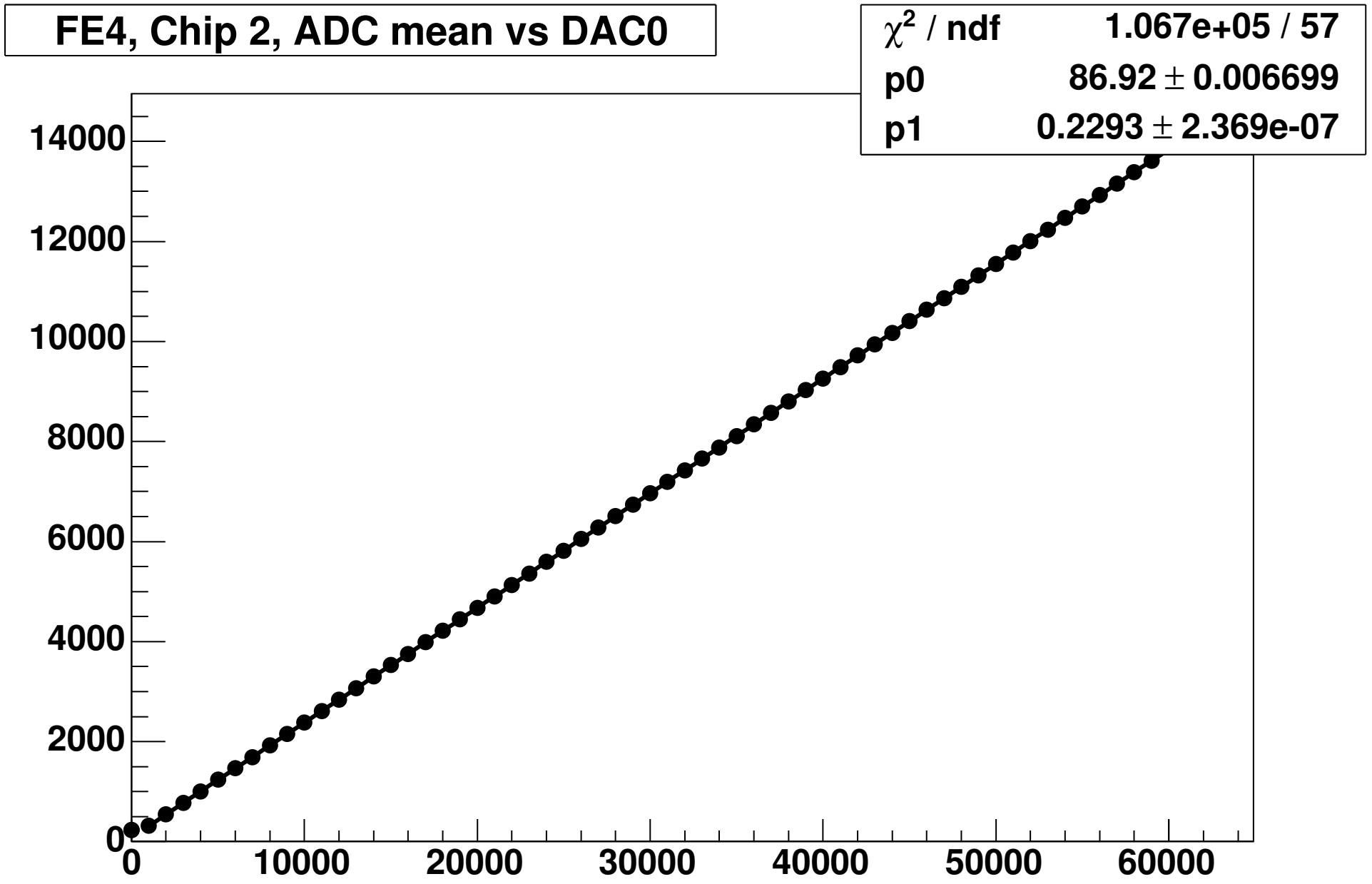

FE4, Chip 1, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

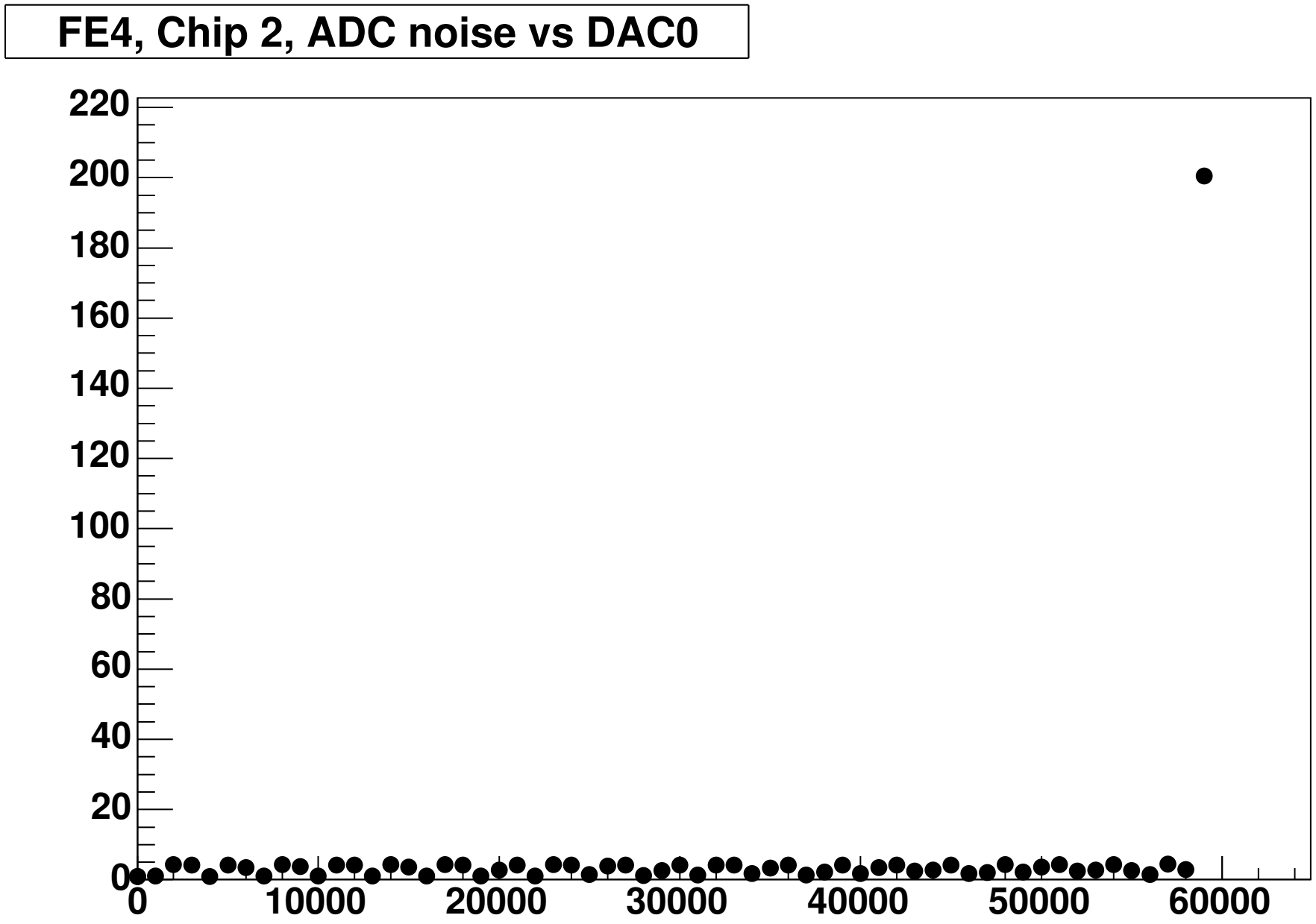

FE4, Chip 1, ADC residuals vs DAC0
2
1
0
-1
-2
-3
-4
-5
-6
0
10000
20000
30000
40000
50000
60000

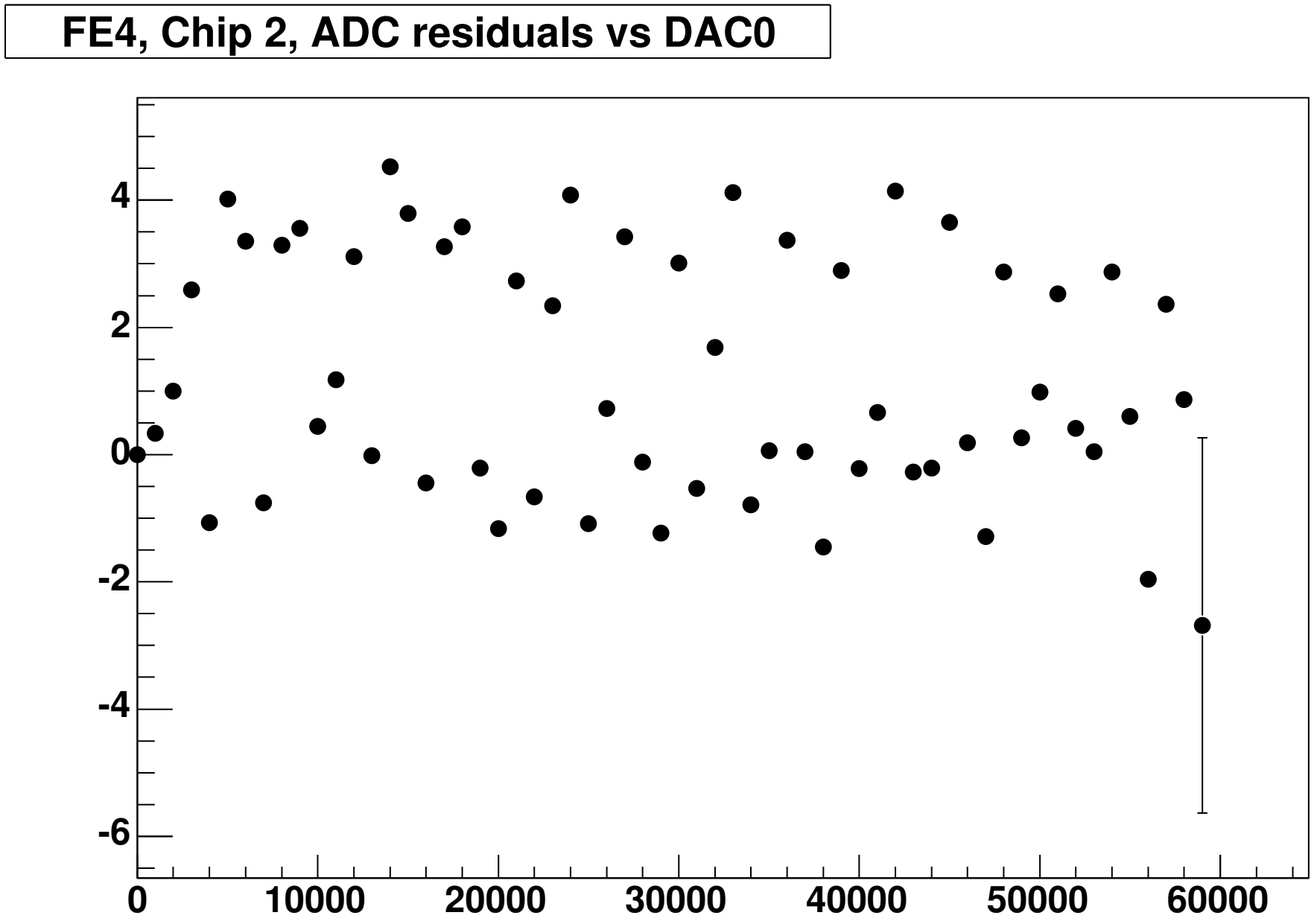

FE4, Chip 1, ADC mean vs DAC1
χ² / ndf 1.857e+05 / 57
p0 222.6 ± 0.003828
p1 2.303e-06 ± 1.108e-07
223.5
223
222.5
222
221.5
221
0
10000
20000
30000
40000
50000
60000

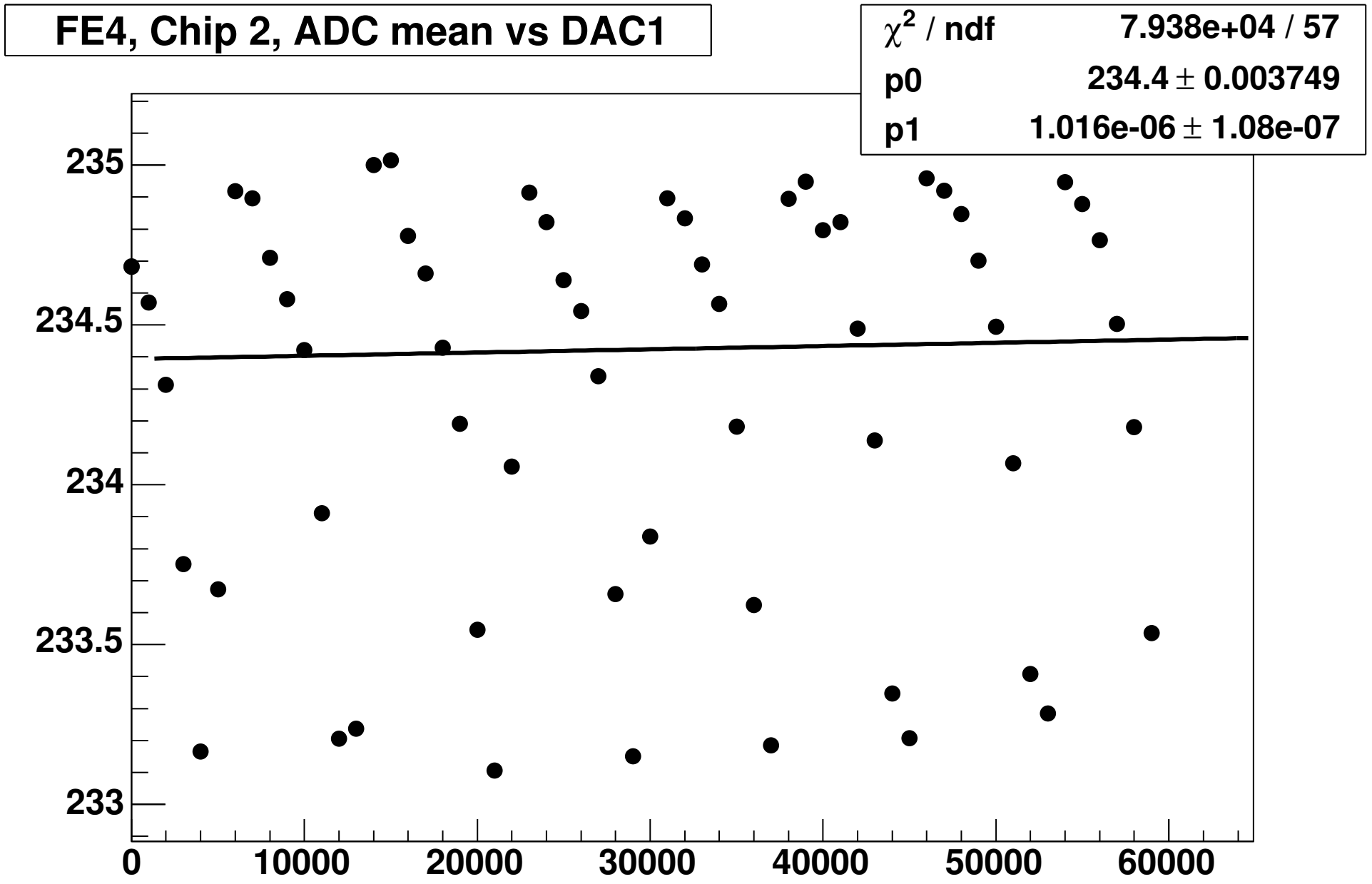

FE4, Chip 1, ADC noise vs DAC1
1.06
1.04
1.02
1
0.98
0.96
0.94
0.92
0.9
0
10000
20000
30000
40000
50000
60000

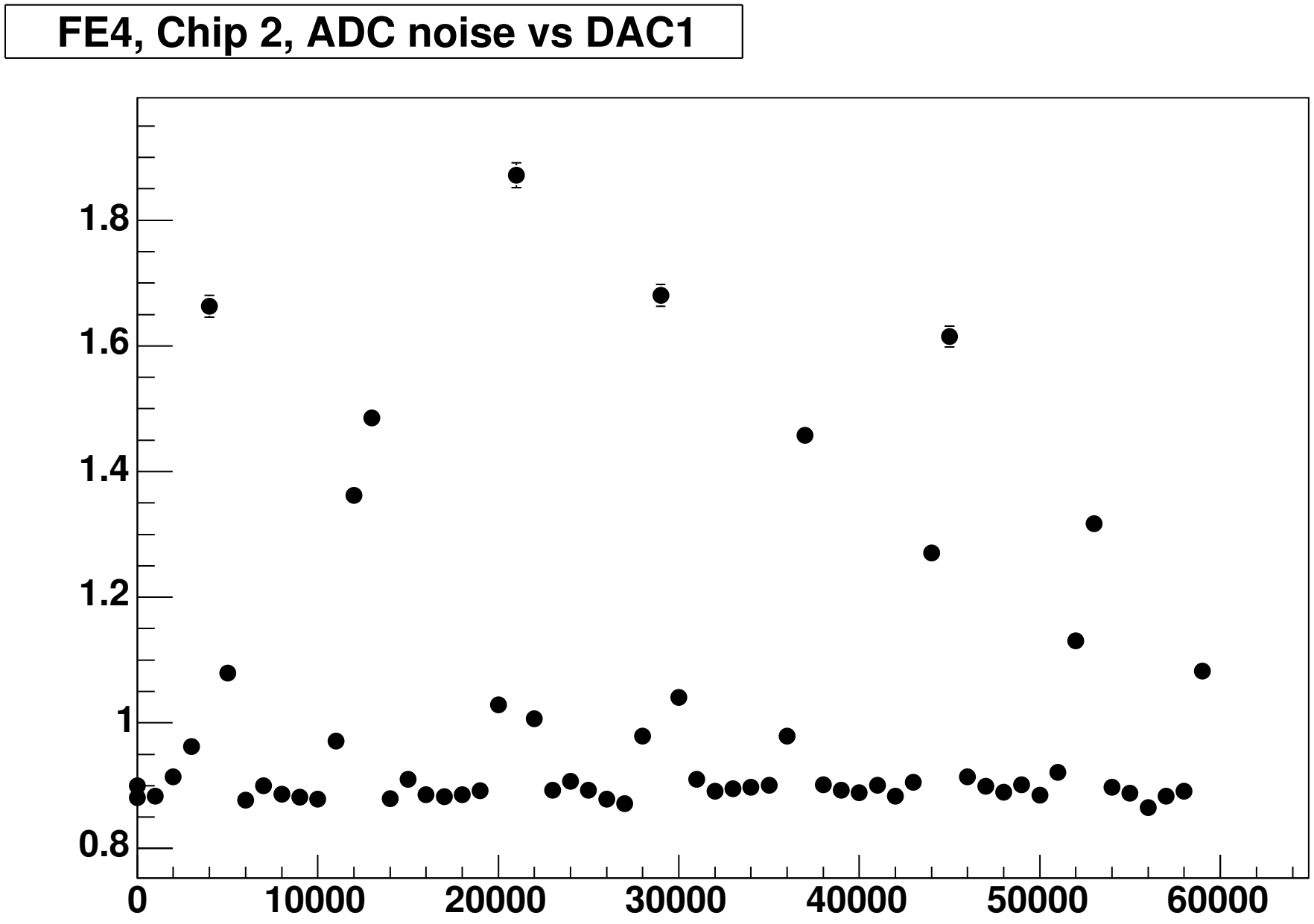

FE4, Chip 1, ADC residuals vs DAC1
1
0.5
0
-0.5
-1
-1.5
-2
0
10000
20000
30000
40000
50000
60000

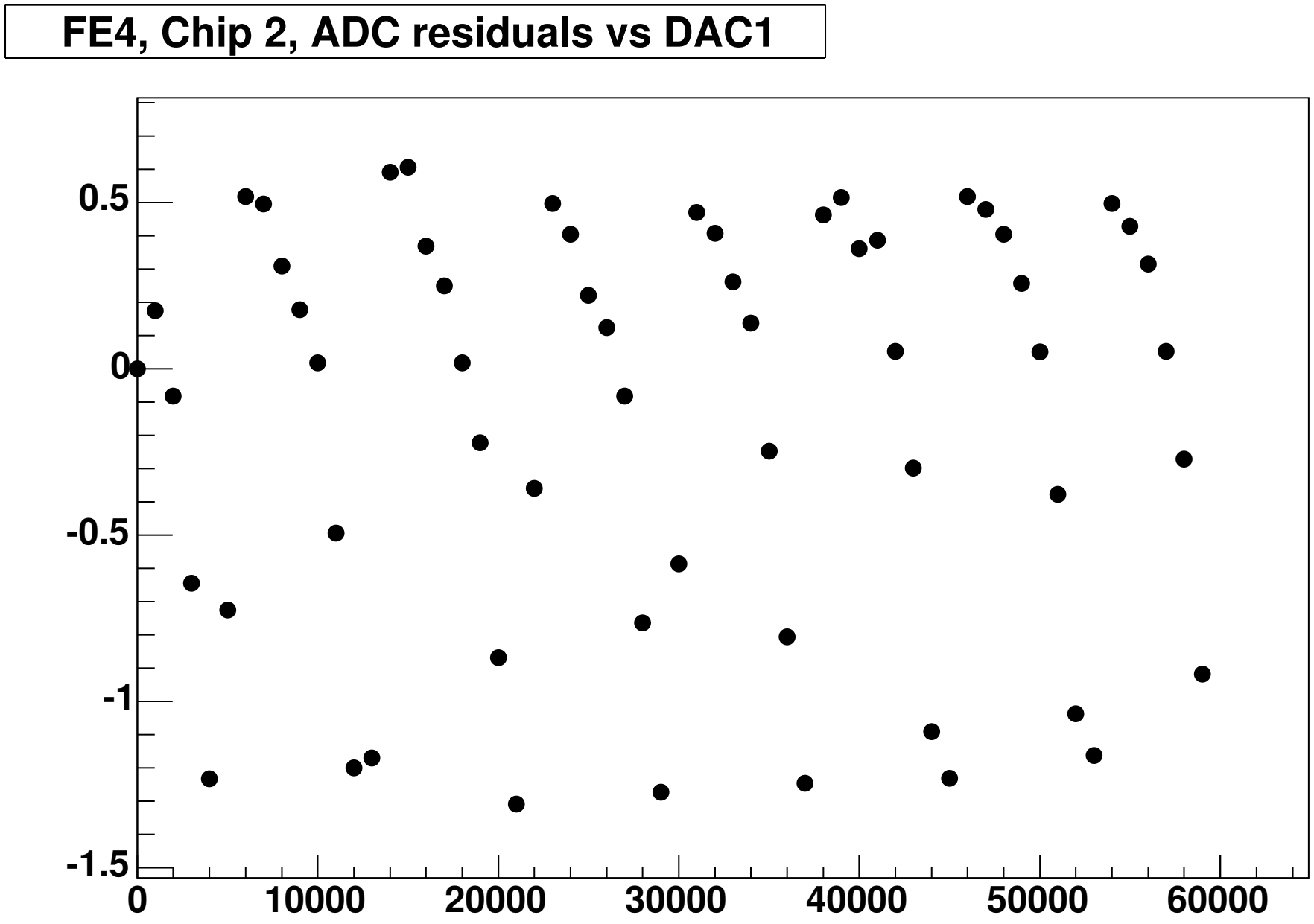

FE4, Chip 2, ADC mean vs DAC0
χ² / ndf 1.067e+05 / 57
p0 86.92 ± 0.006699
p1 0.2293 ± 2.369e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

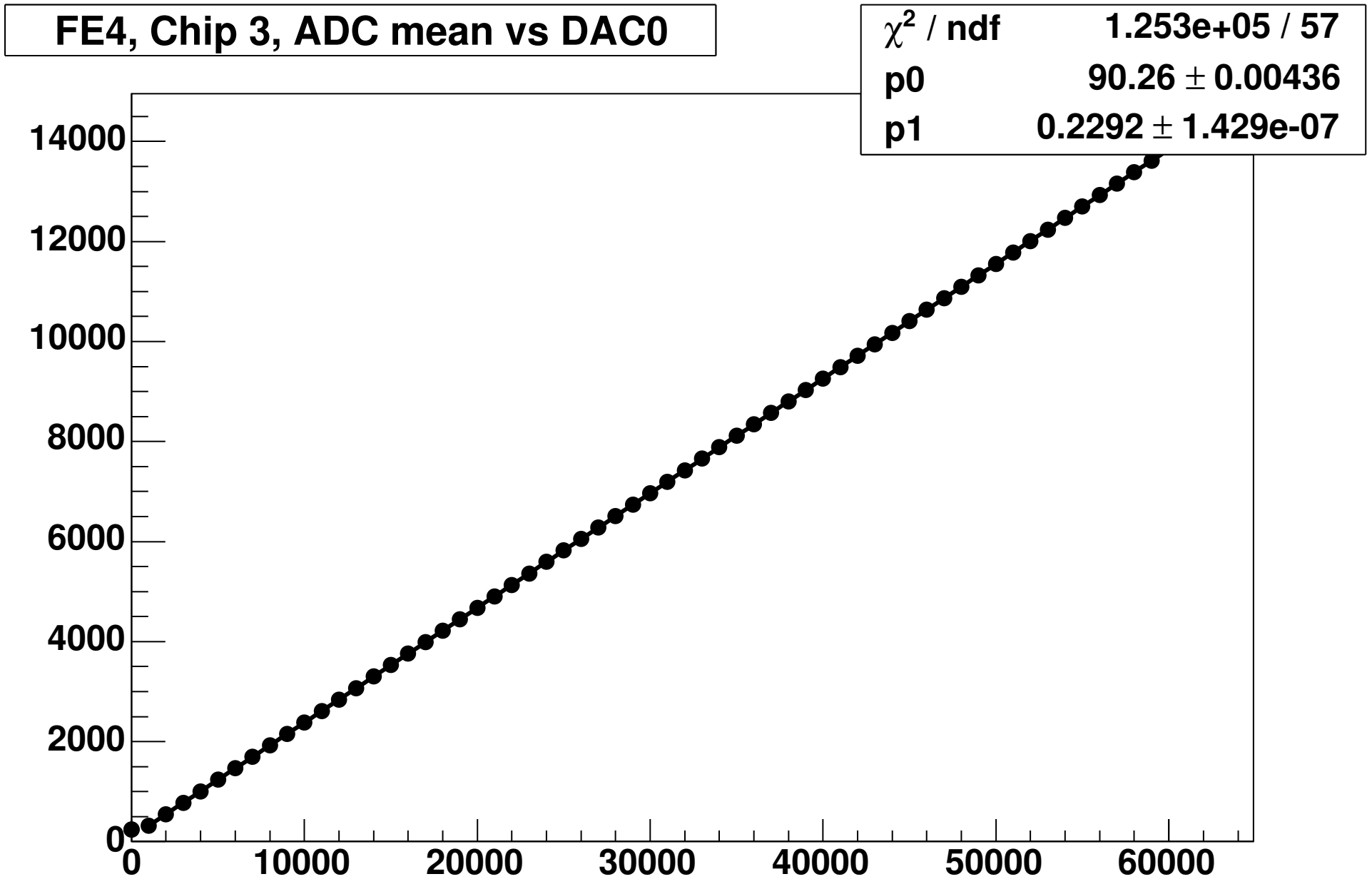

FE4, Chip 2, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

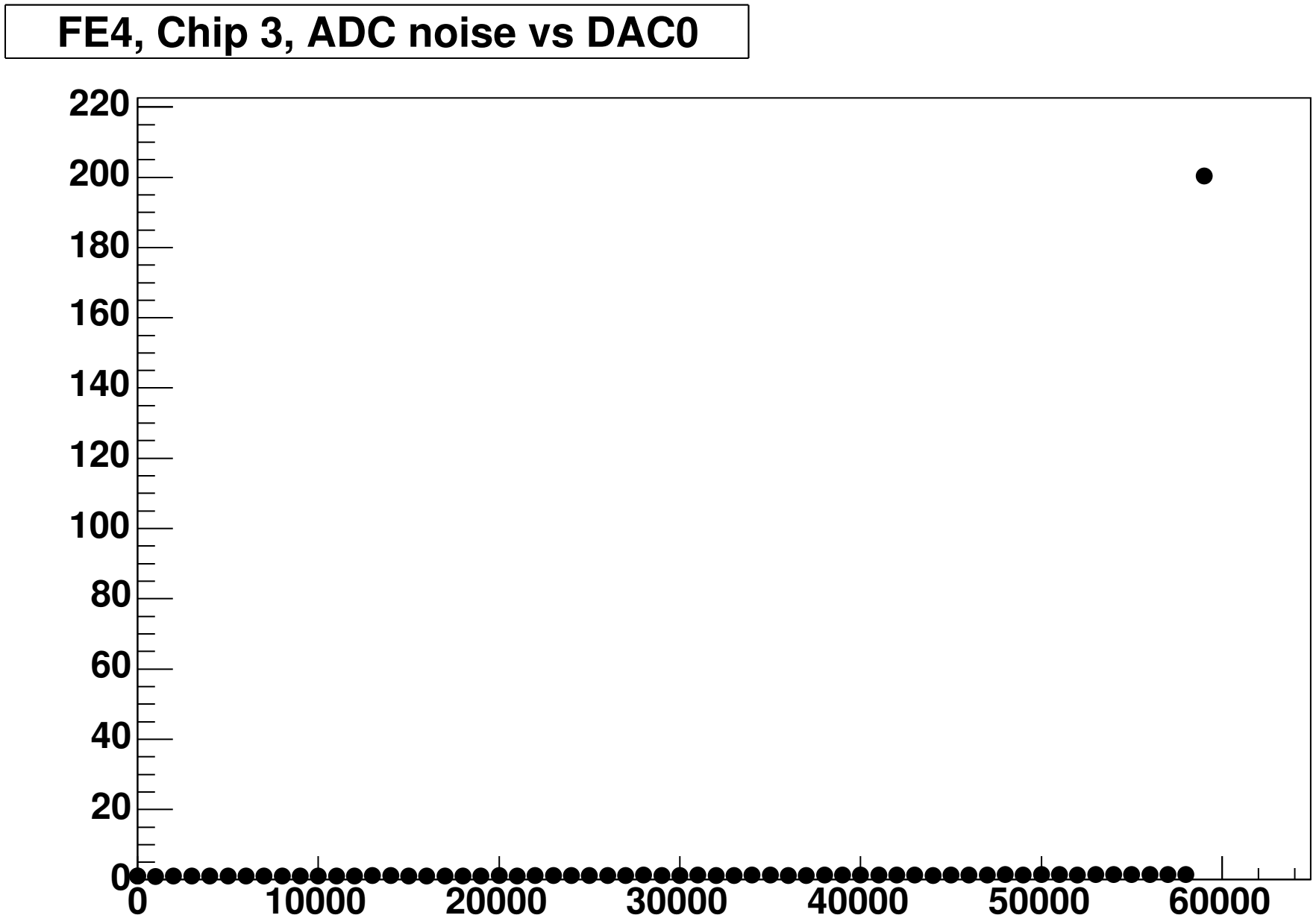

FE4, Chip 2, ADC residuals vs DAC0
4
2
0
-2
-4
-6
0
10000
20000
30000
40000
50000
60000

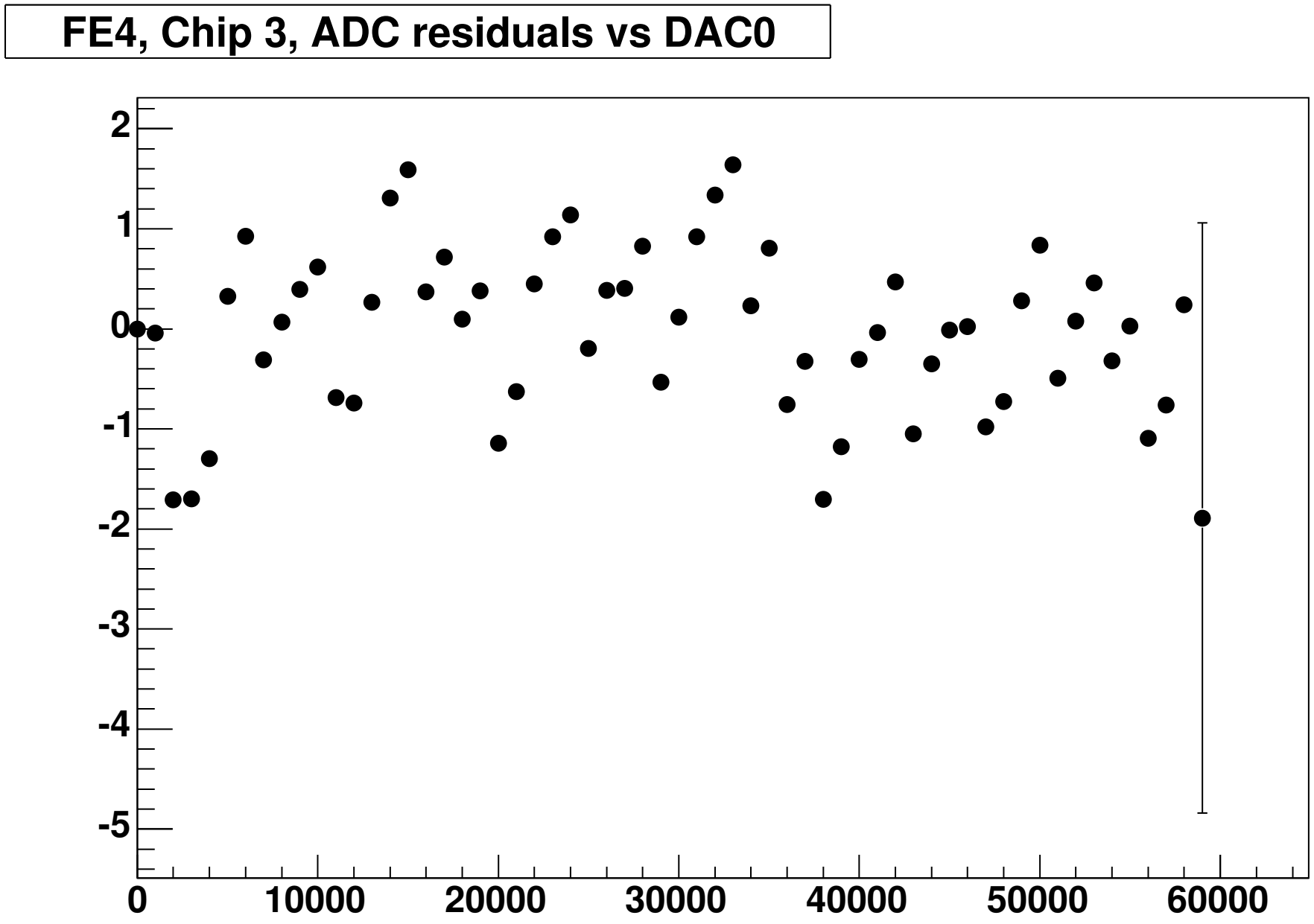

FE4, Chip 2, ADC mean vs DAC1
χ² / ndf 7.938e+04 / 57
p0 234.4 ± 0.003749
p1 1.016e-06 ± 1.08e-07
235
234.5
234
233.5
233
0
10000
20000
30000
40000
50000
60000

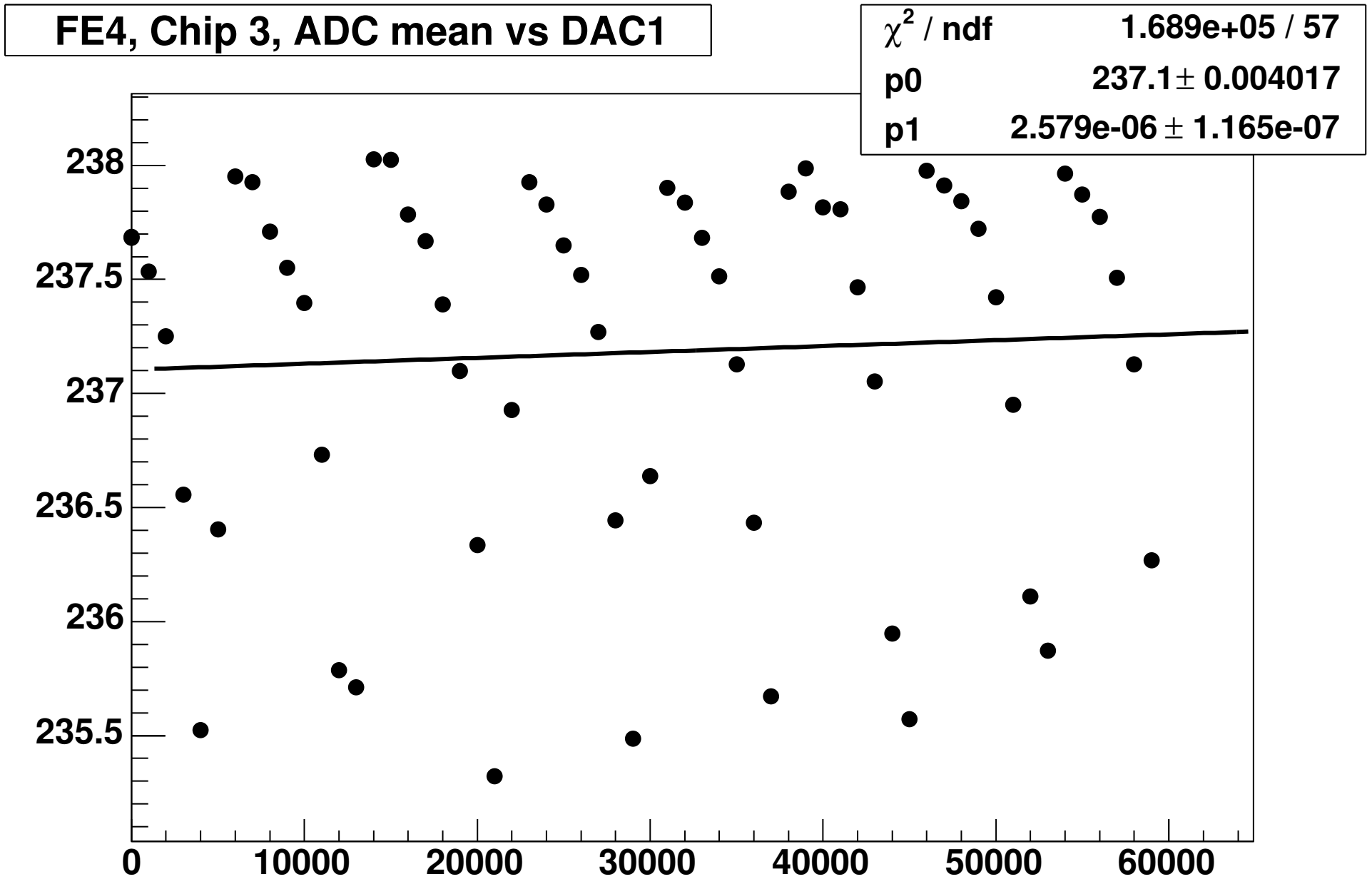

FE4, Chip 2, ADC noise vs DAC1
1.8
1.6
1.4
1.2
1
0.8
0
10000
20000
30000
40000
50000
60000

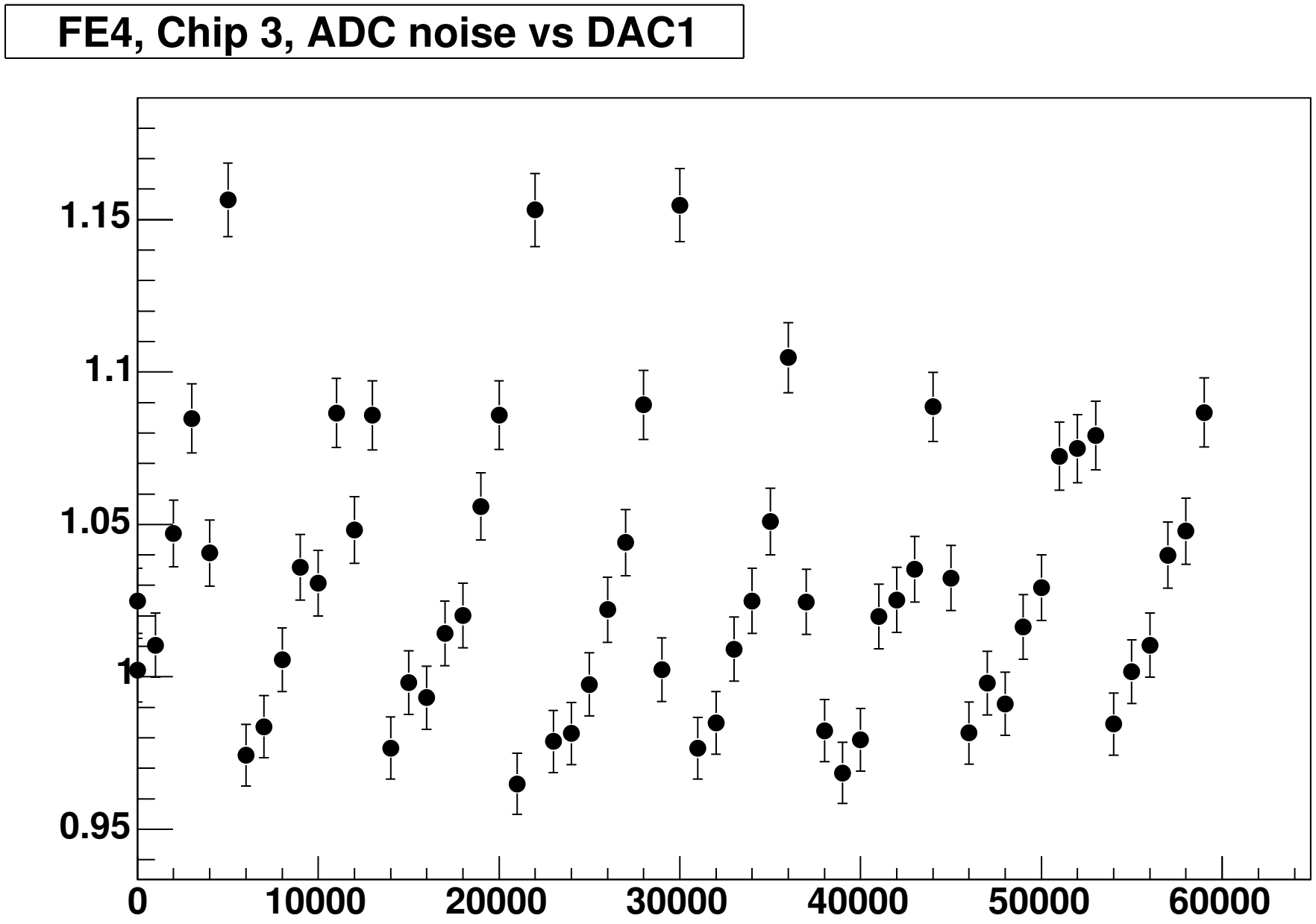

FE4, Chip 2, ADC residuals vs DAC1
0.5
0
-0.5
-1
-1.5
0
10000
20000
30000
40000
50000
60000

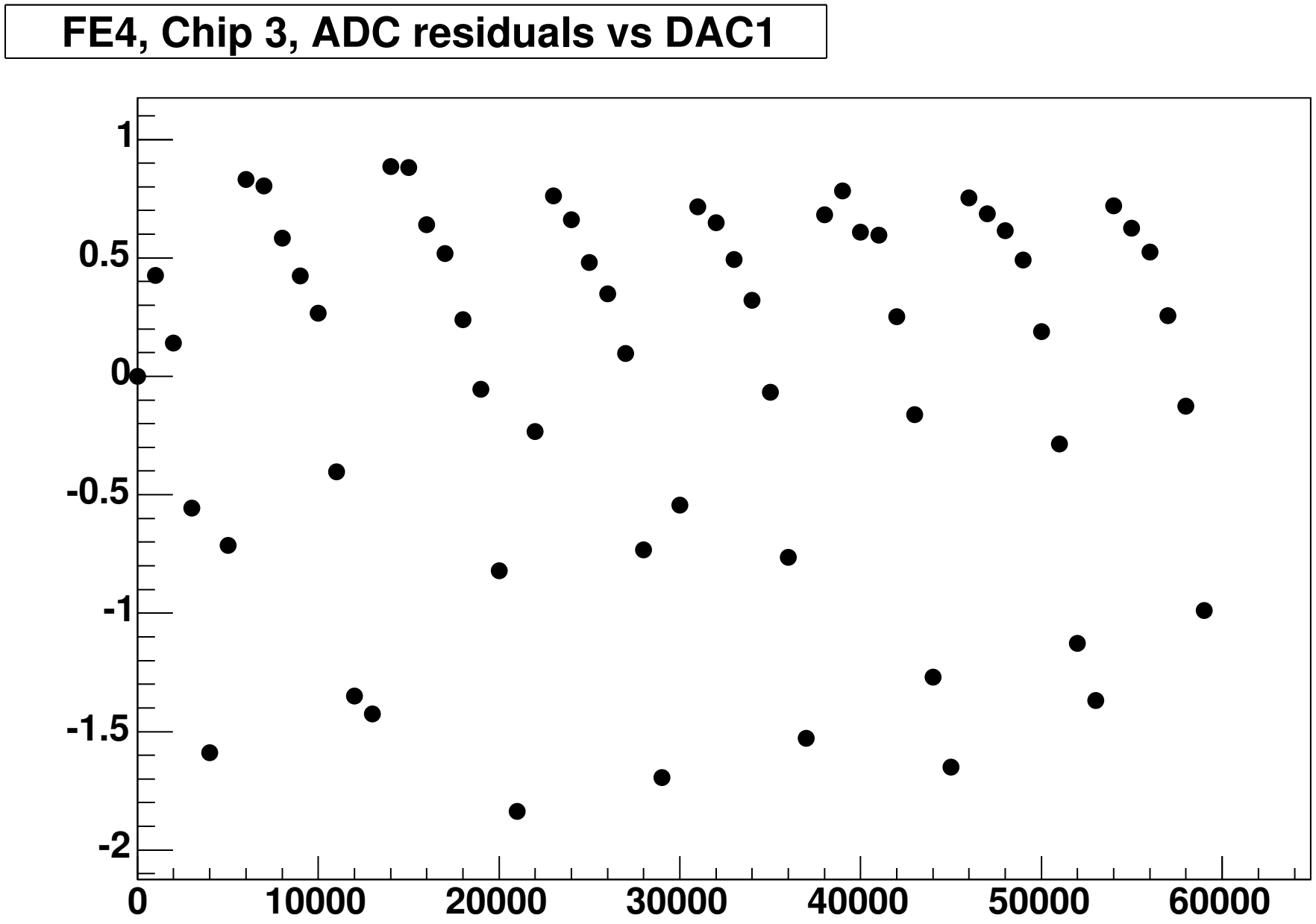

FE4, Chip 3, ADC mean vs DAC0
χ² / ndf 1.253e+05 / 57
p0 90.26 ± 0.00436
p1 0.2292 ± 1.429e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

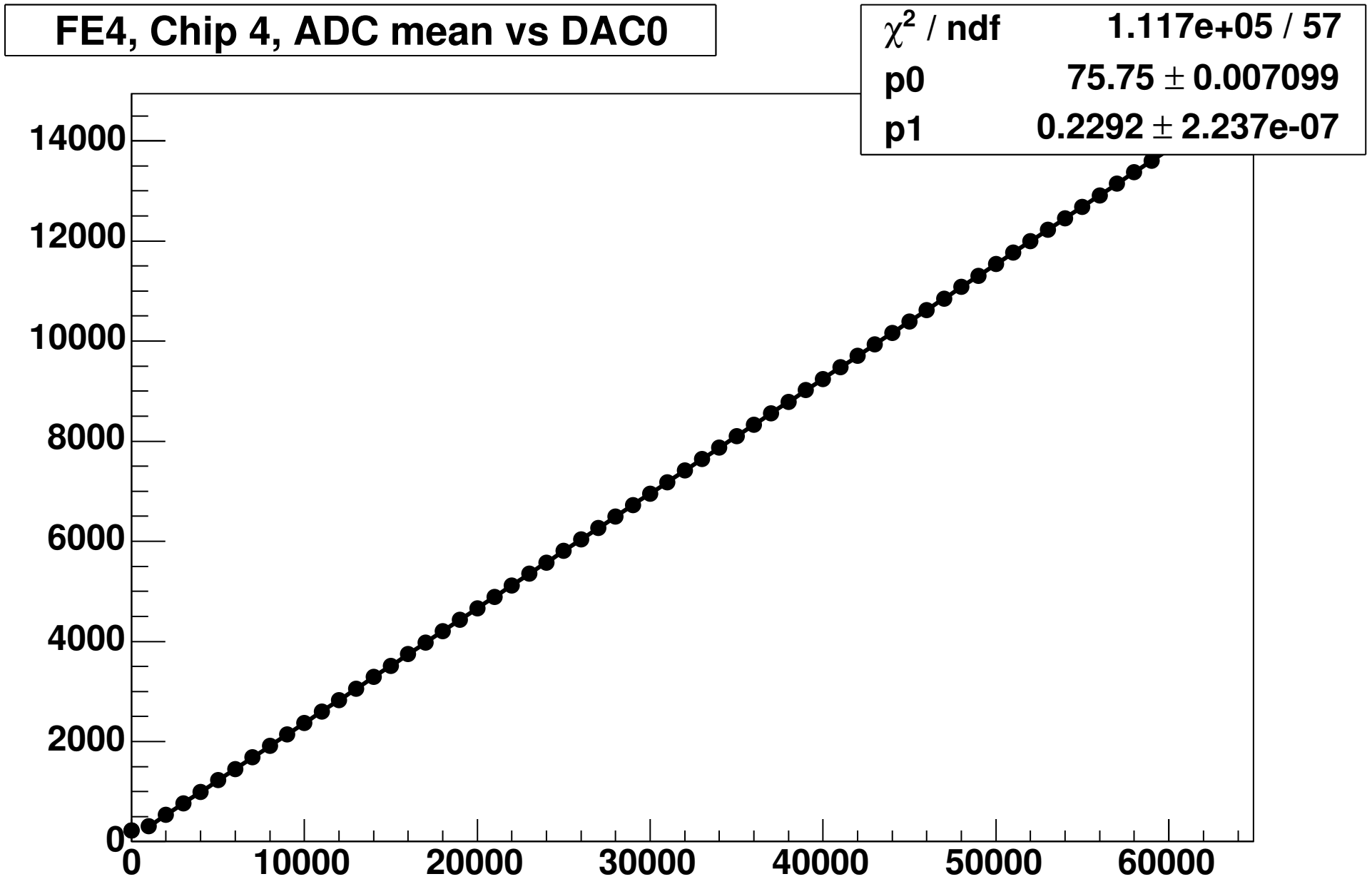

FE4, Chip 3, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

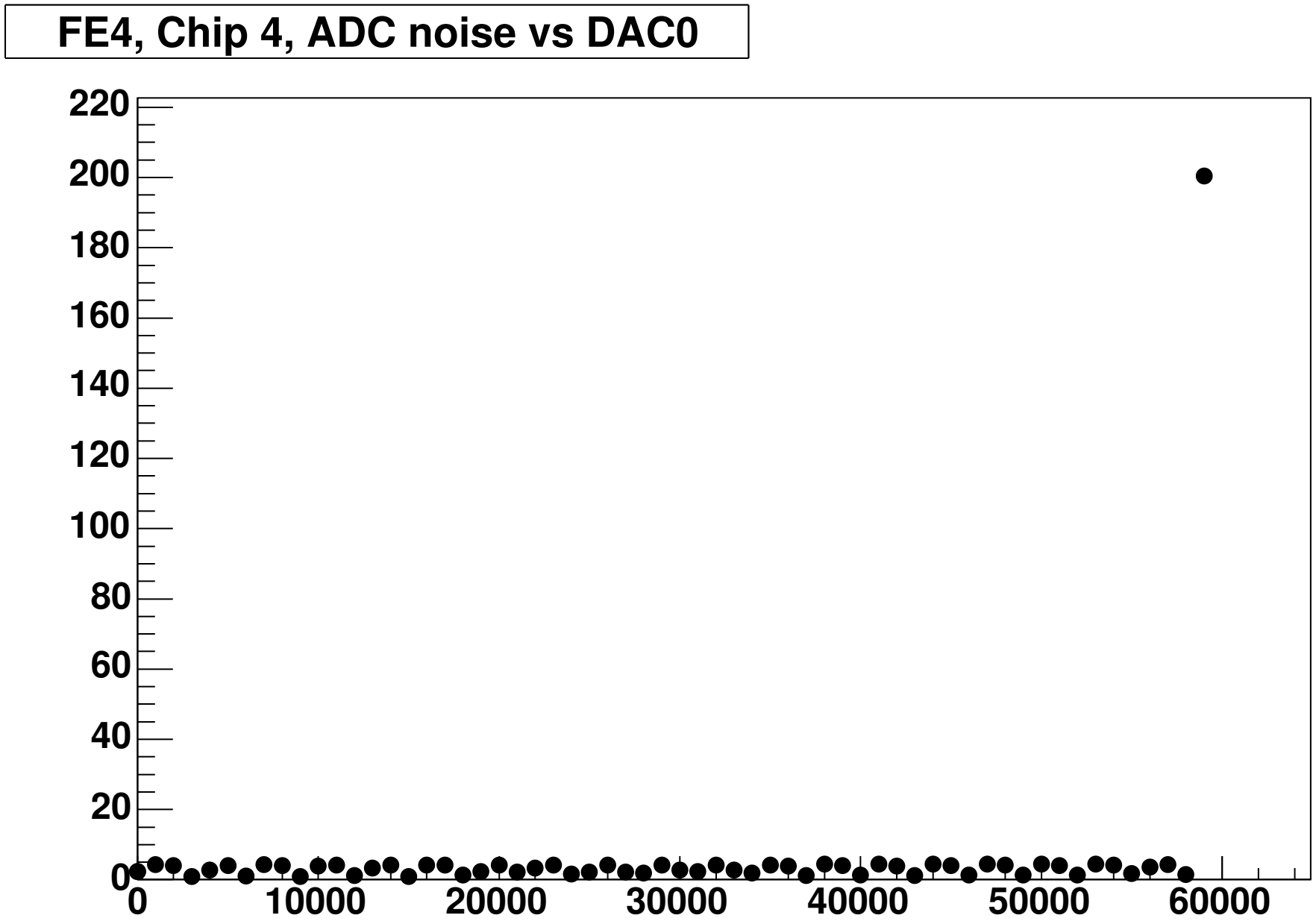

FE4, Chip 3, ADC residuals vs DAC0
2
1
0
-1
-2
-3
-4
-5
0
10000
20000
30000
40000
50000
60000

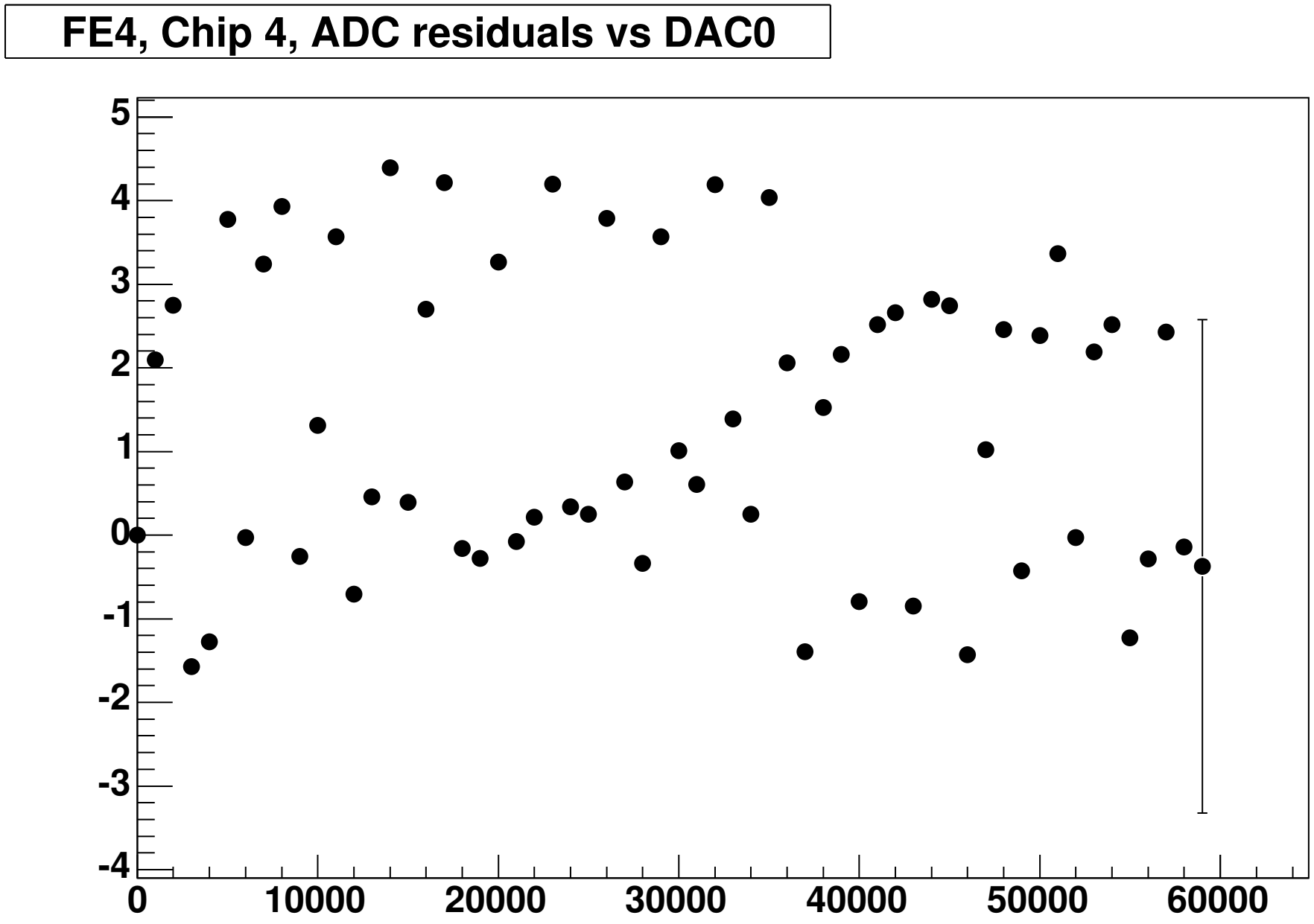

FE4, Chip 3, ADC mean vs DAC1
χ² / ndf 1.689e+05 / 57
p0 237.1 ± 0.004017
p1 2.579e-06 ± 1.165e-07
238
237.5
237
236.5
236
235.5
0
10000
20000
30000
40000
50000
60000

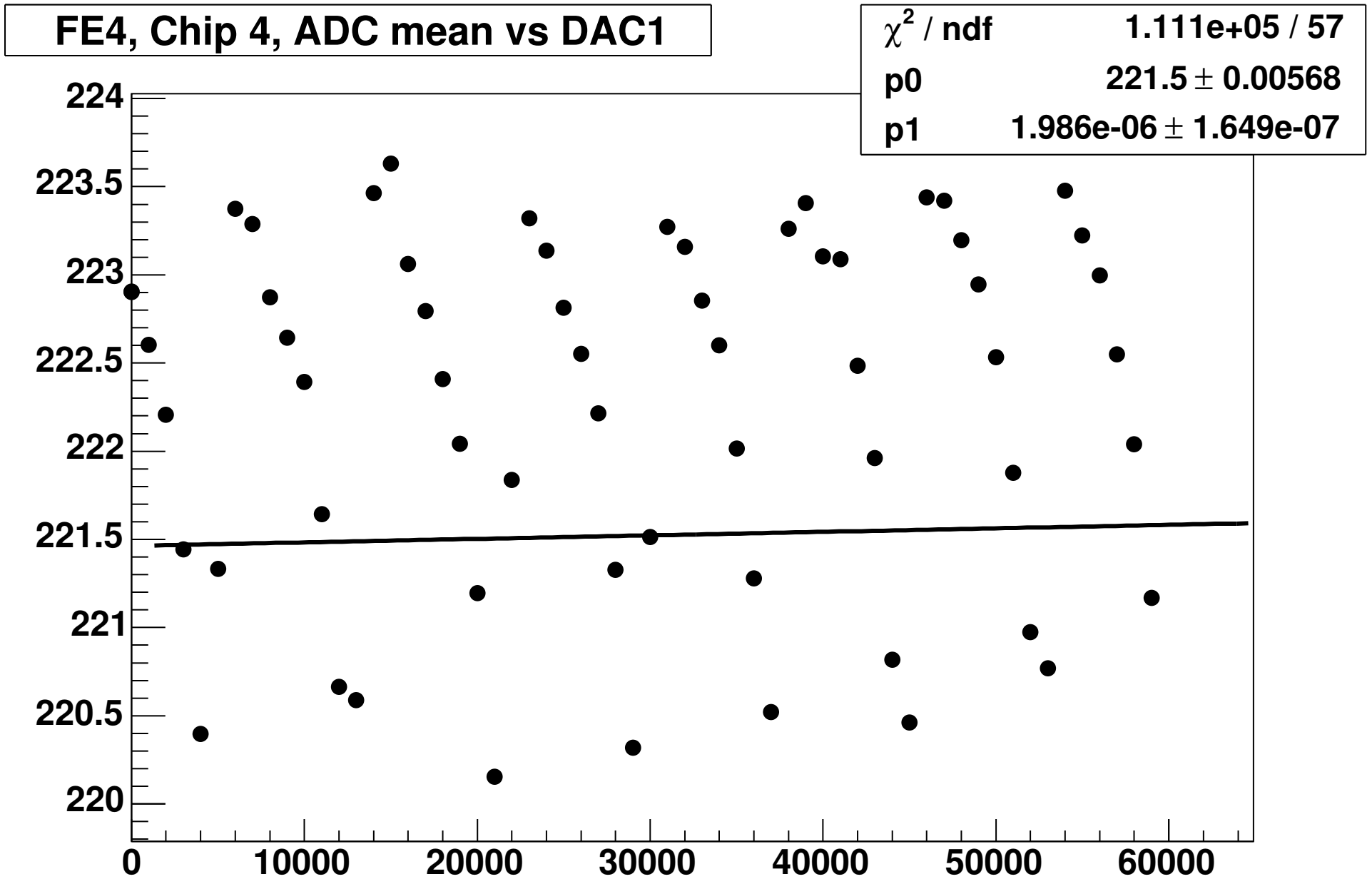

FE4, Chip 3, ADC noise vs DAC1
1.15
1.1
1.05
1
0.95
0
10000
20000
30000
40000
50000
60000

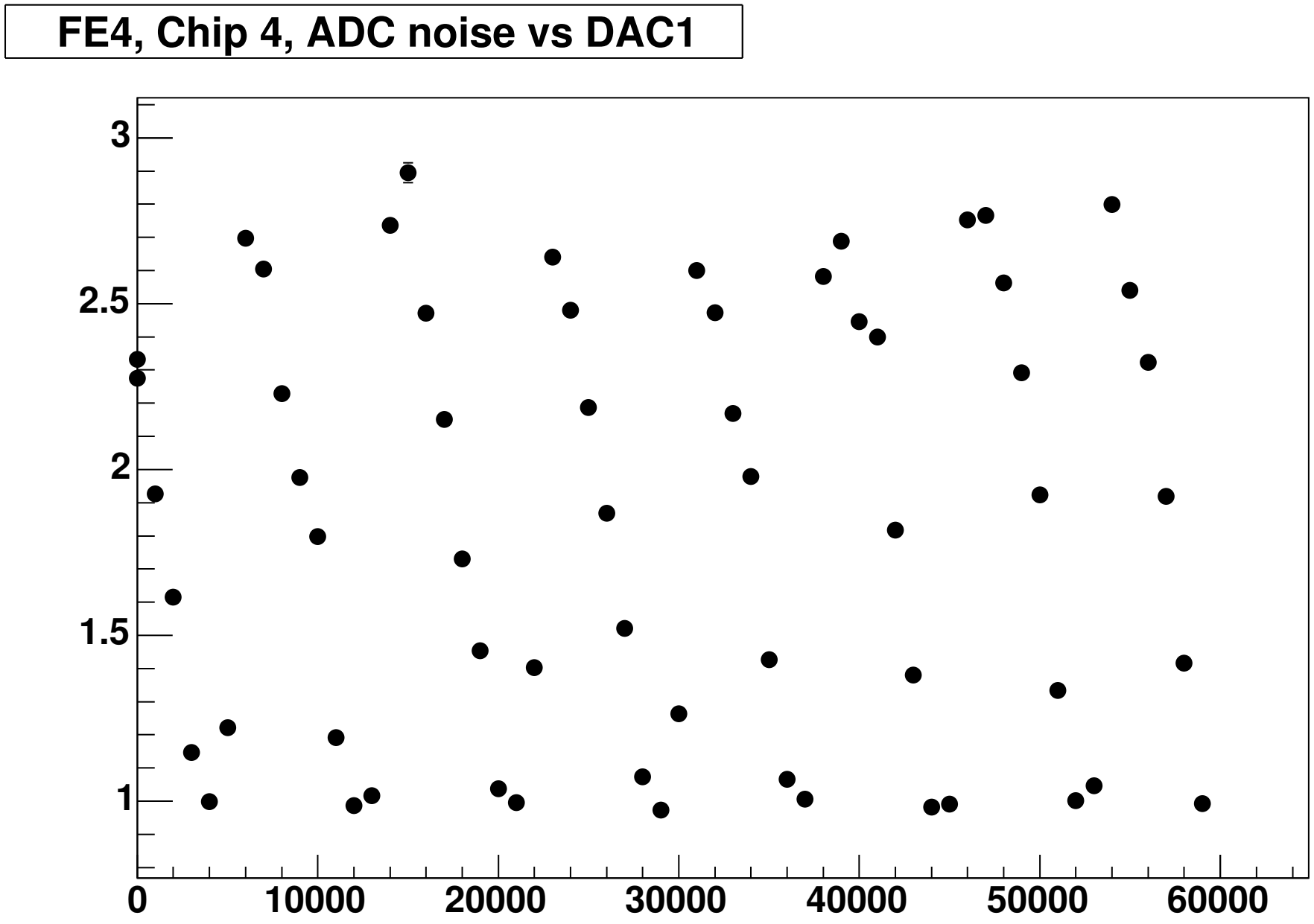

FE4, Chip 3, ADC residuals vs DAC1
1
0.5
0
-0.5
-1
-1.5
-2
0
10000
20000
30000
40000
50000
60000

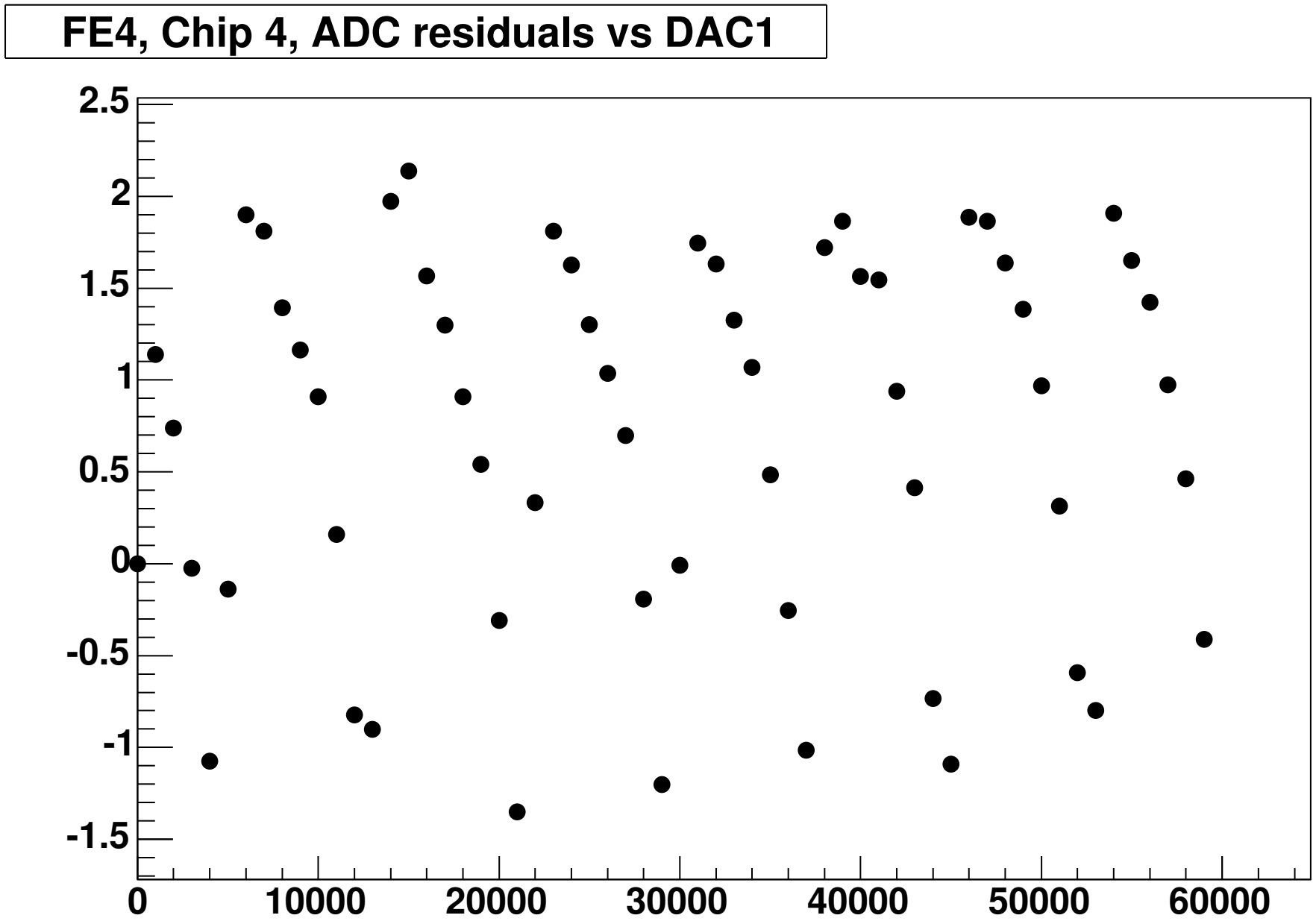

FE4, Chip 4, ADC mean vs DAC0
χ² / ndf 1.117e+05 / 57
p0 75.75 ± 0.007099
p1 0.2292 ± 2.237e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

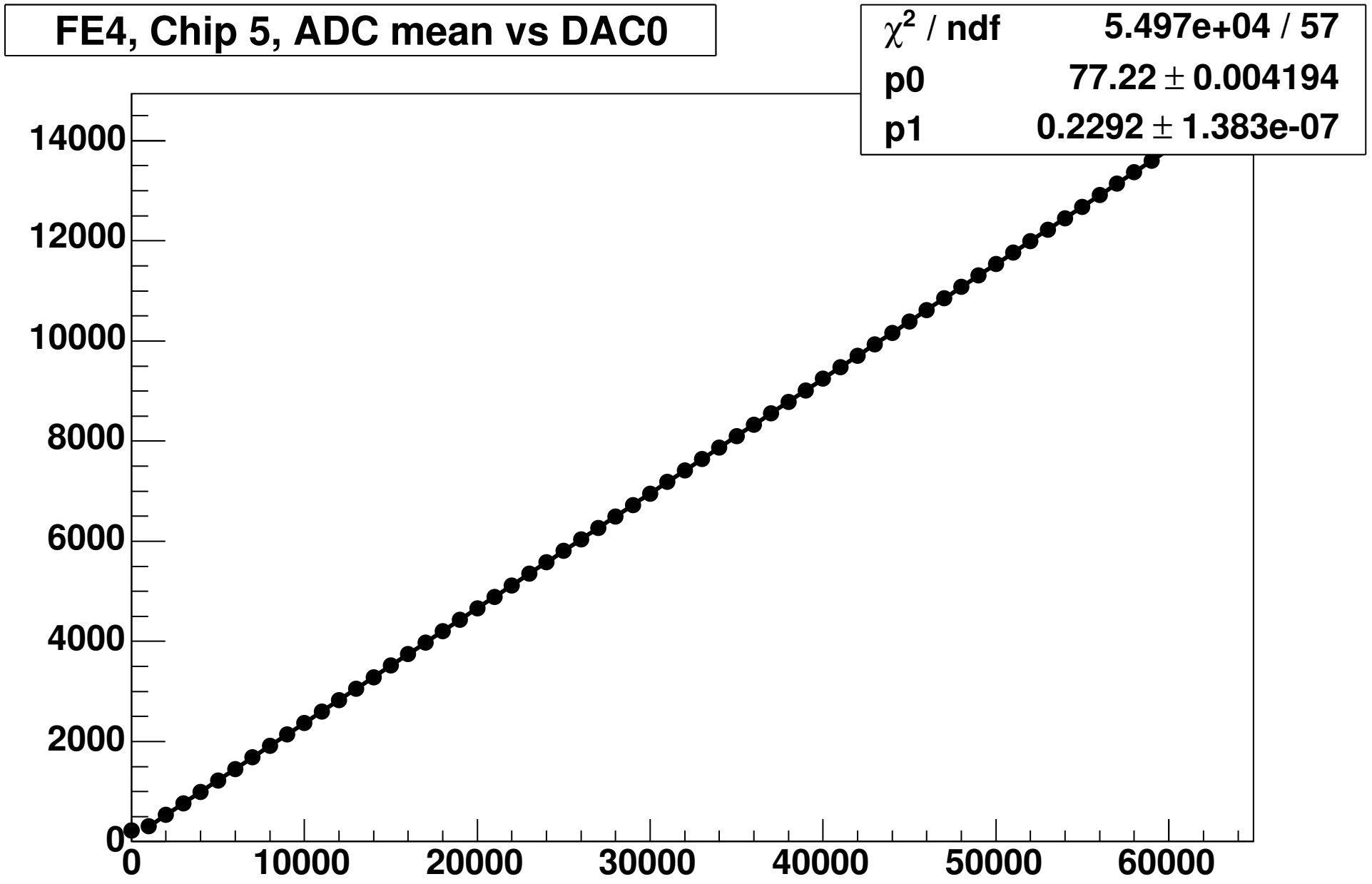

FE4, Chip 4, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

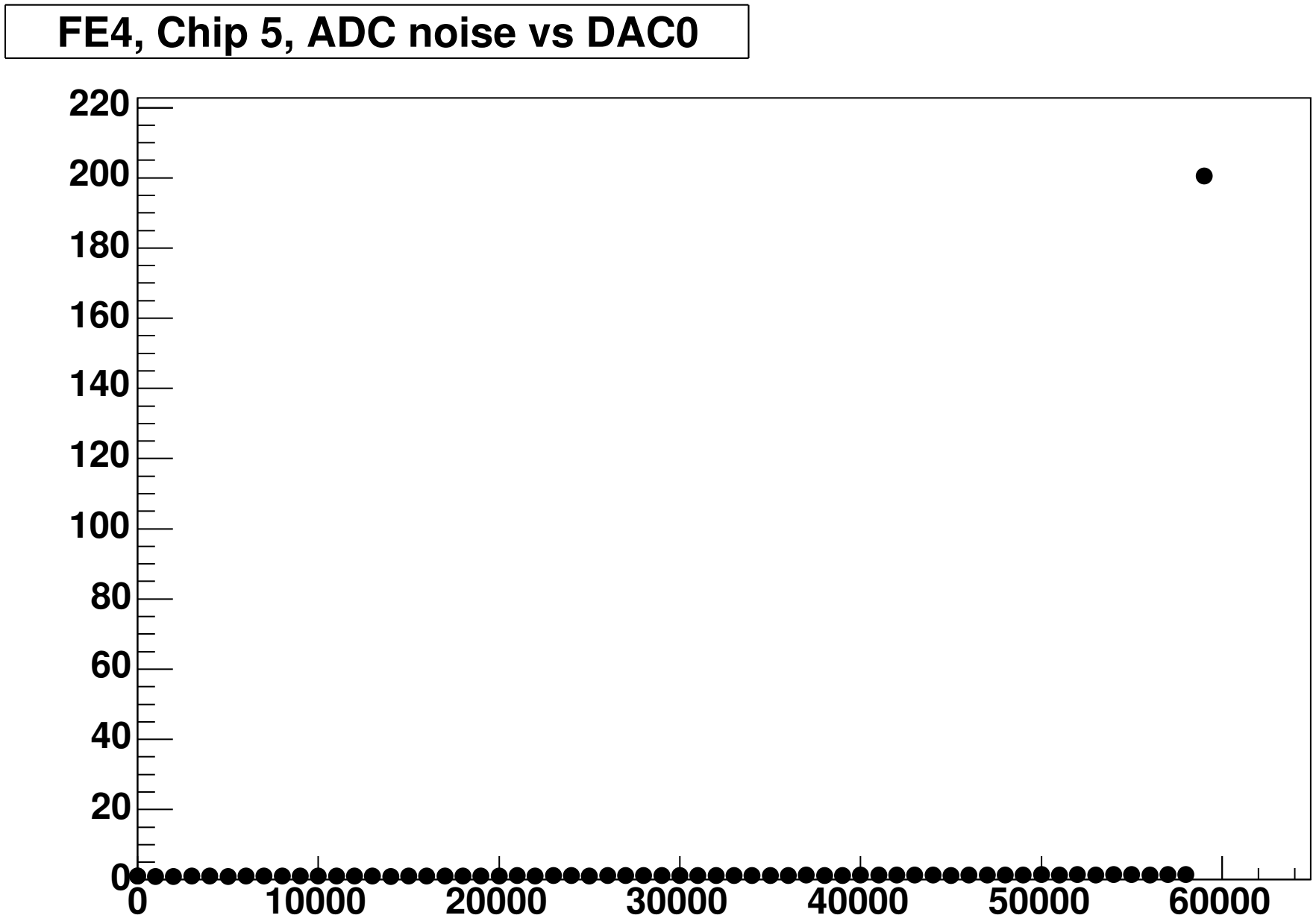

FE4, Chip 4, ADC residuals vs DAC0
5
4
3
2
1
0
-1
-2
-3
-4
0
10000
20000
30000
40000
50000
60000

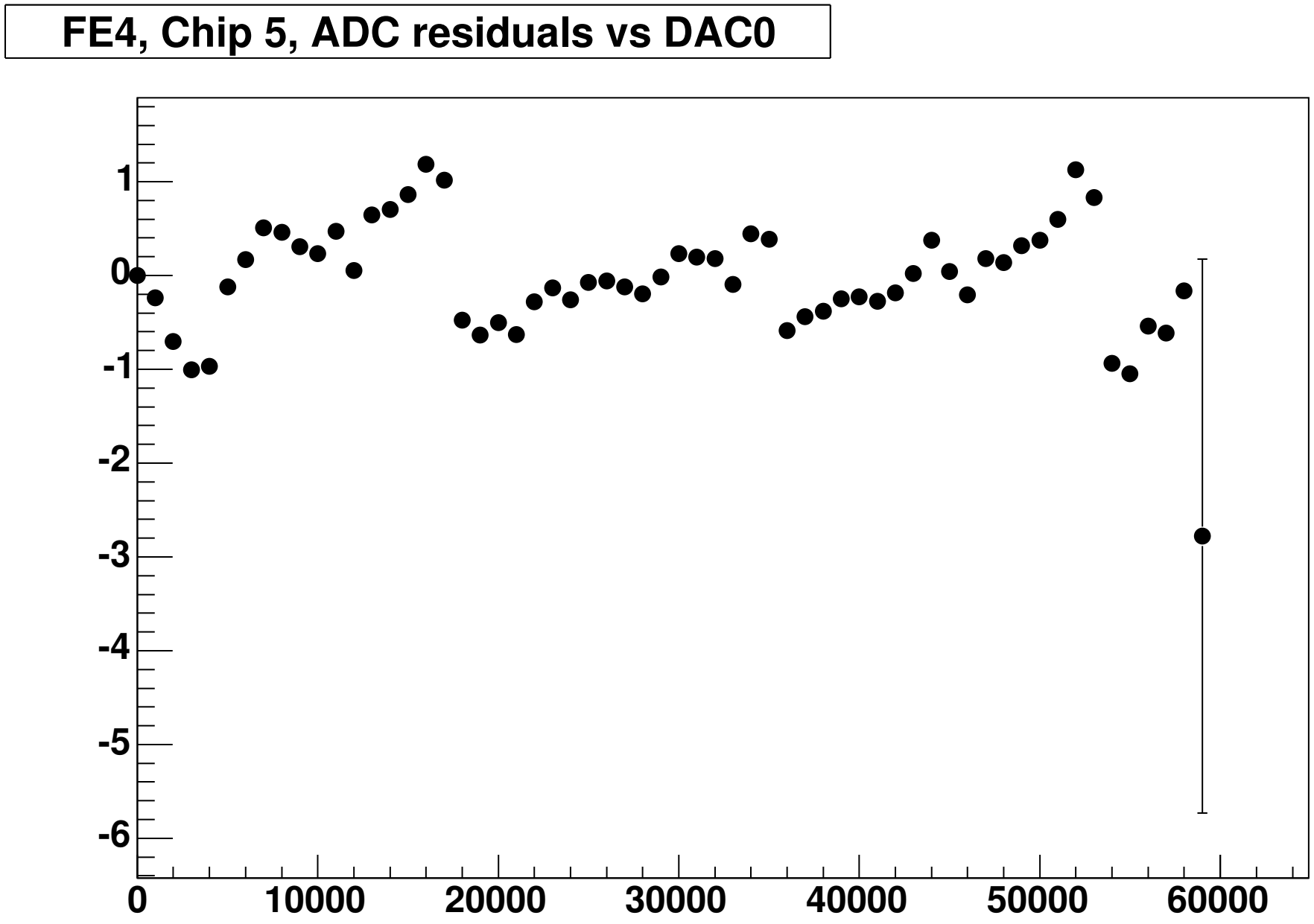

FE4, Chip 4, ADC mean vs DAC1
χ² / ndf 1.111e+05 / 57
p0 221.5 ± 0.00568
p1 1.986e-06 ± 1.649e-07
224
223.5
223
222.5
222
221.5
221
220.5
220
0
10000
20000
30000
40000
50000
60000

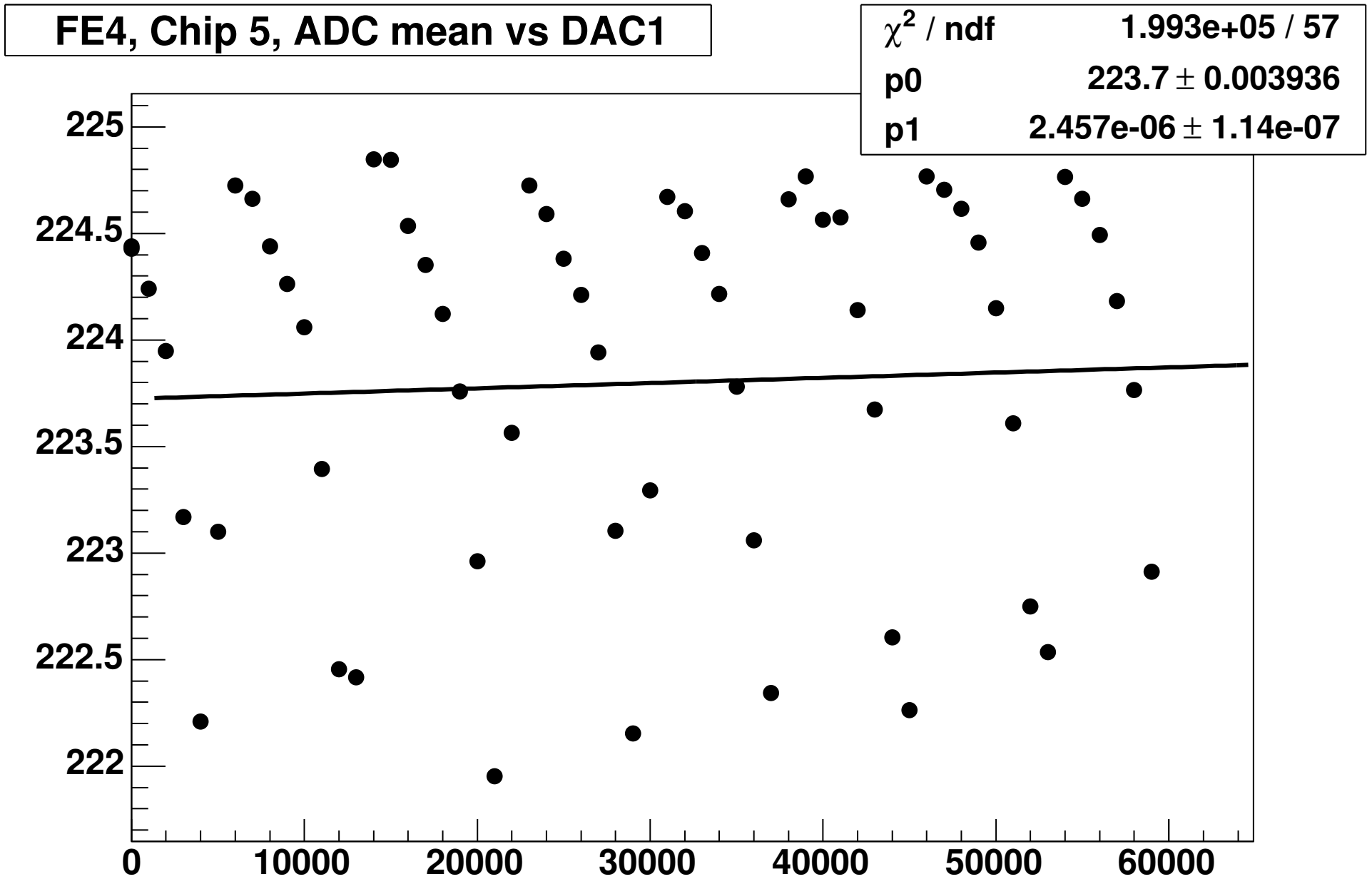

FE4, Chip 4, ADC noise vs DAC1
3
2.5
2
1.5
1
0
10000
20000
30000
40000
50000
60000

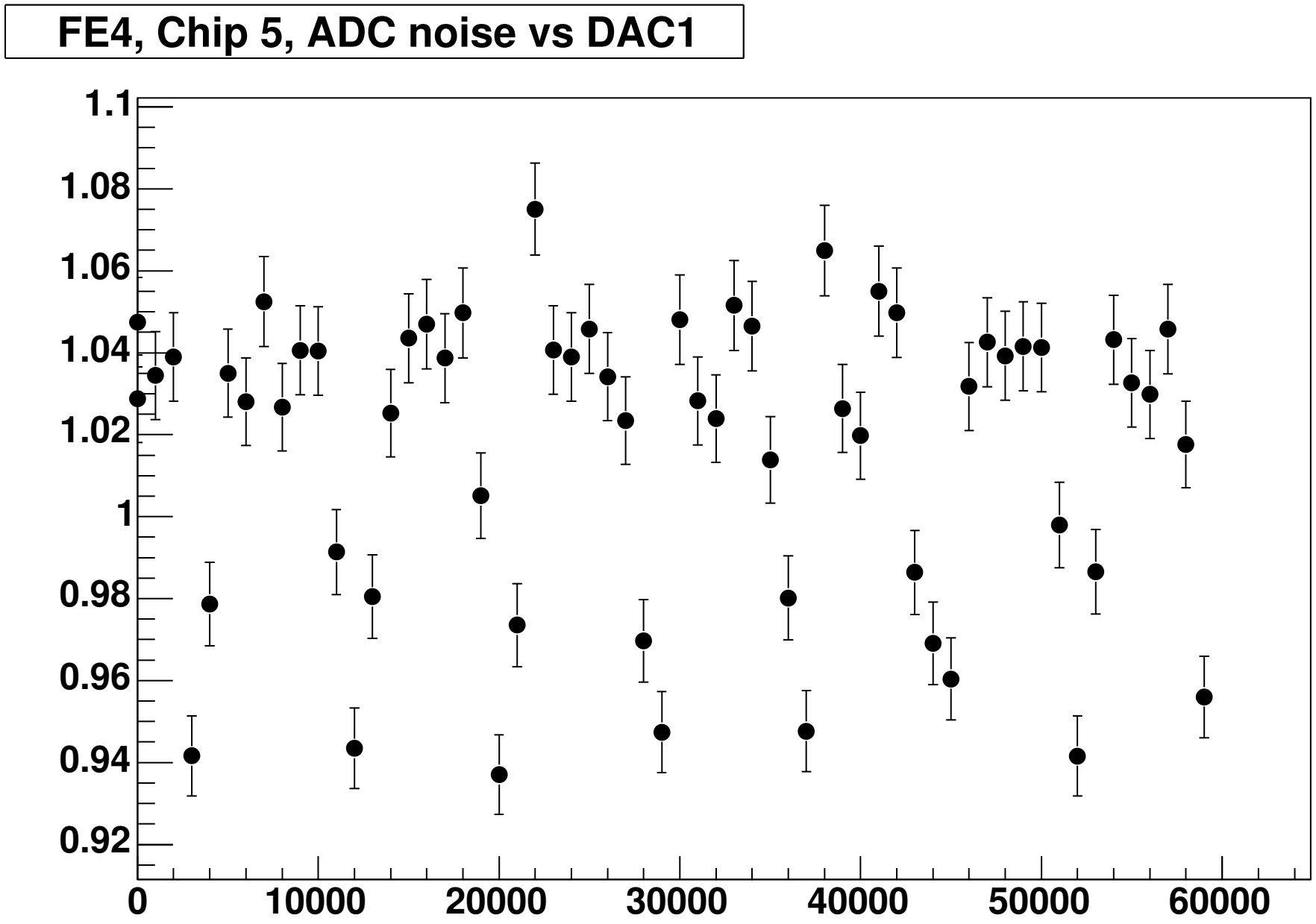

FE4, Chip 4, ADC residuals vs DAC1
2.5
2
1.5
1
0.5
0
-0.5
-1
-1.5
0
10000
20000
30000
40000
50000
60000

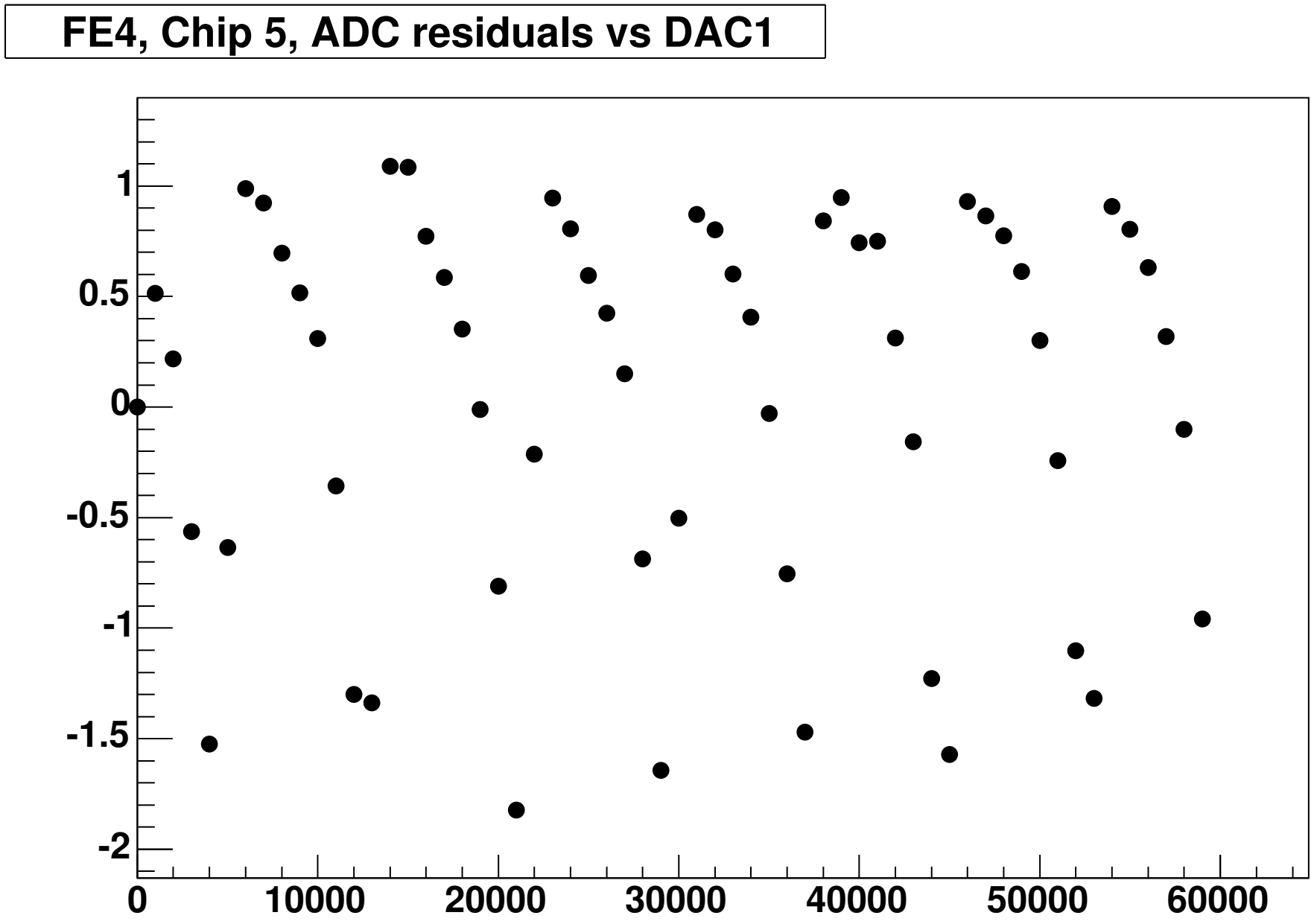

FE4, Chip 5, ADC mean vs DAC0
χ² / ndf 5.497e+04 / 57
p0 77.22 ± 0.004194
p1 0.2292 ± 1.383e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

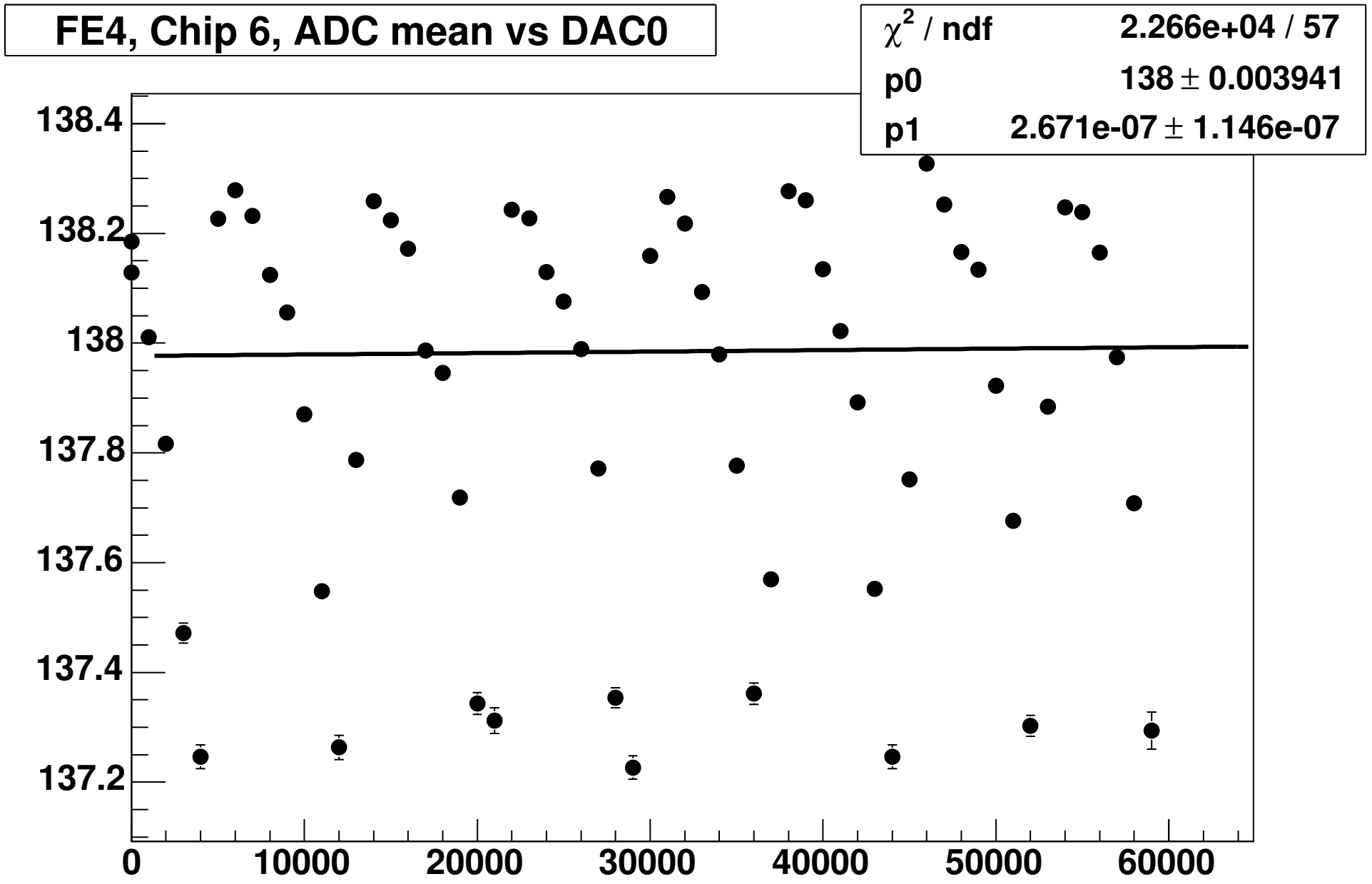

FE4, Chip 5, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

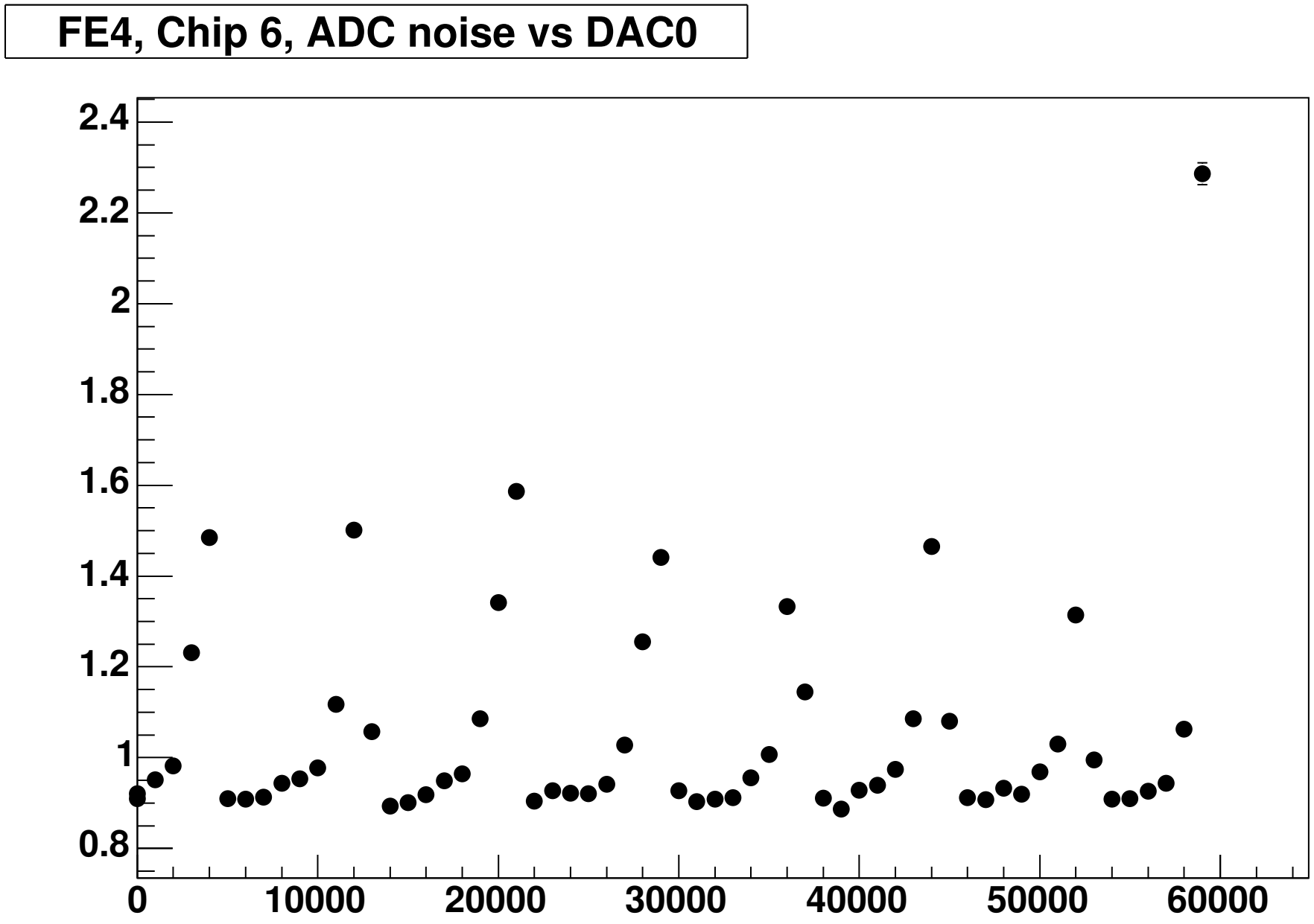

FE4, Chip 5, ADC residuals vs DAC0
1
0
-1
-2
-3
-4
-5
-6
0
10000
20000
30000
40000
50000
60000

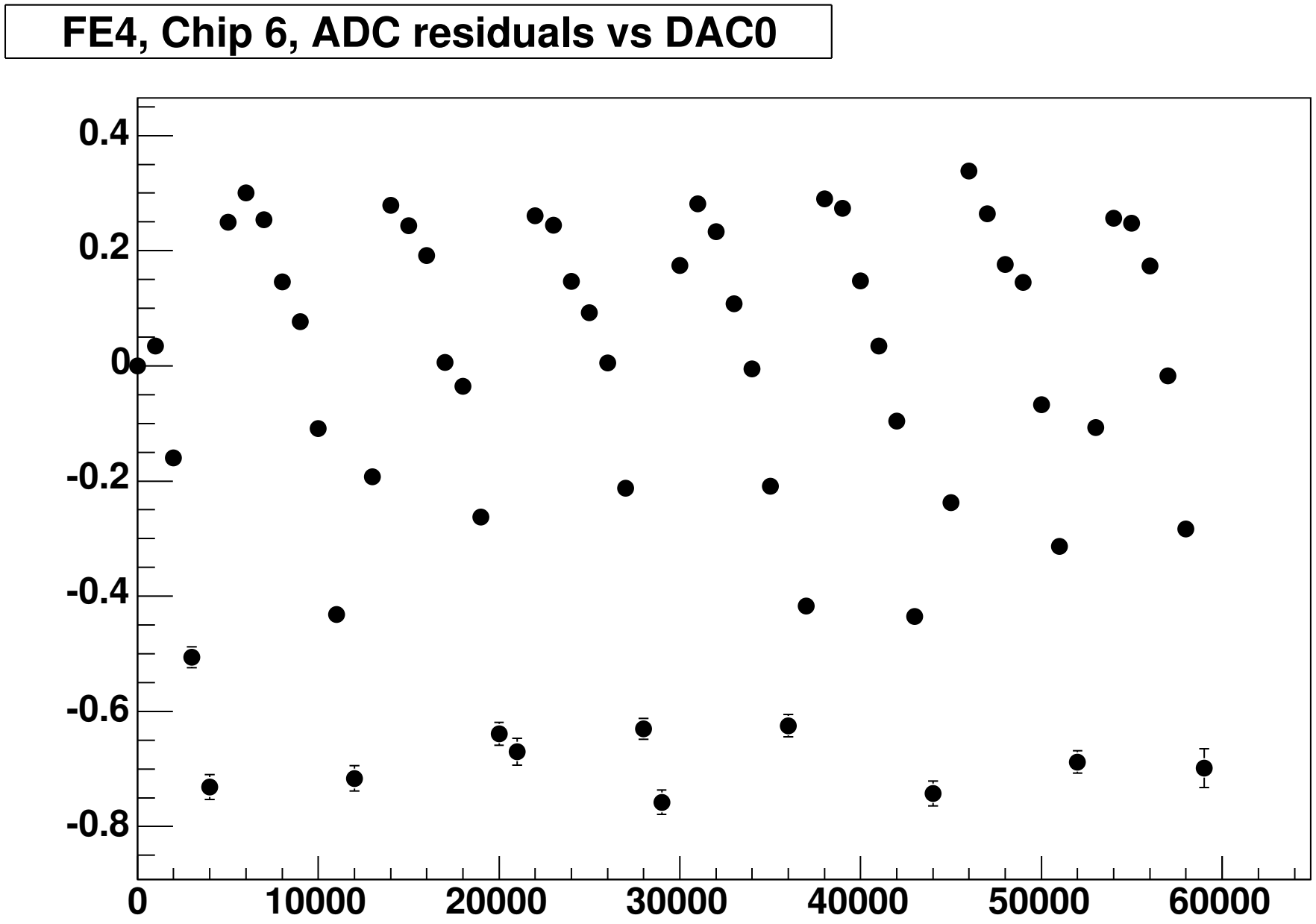

FE4, Chip 5, ADC mean vs DAC1
χ² / ndf 1.993e+05 / 57
p0 223.7 ± 0.003936
p1 2.457e-06 ± 1.14e-07
225
224.5
224
223.5
223
222.5
222
0
10000
20000
30000
40000
50000
60000

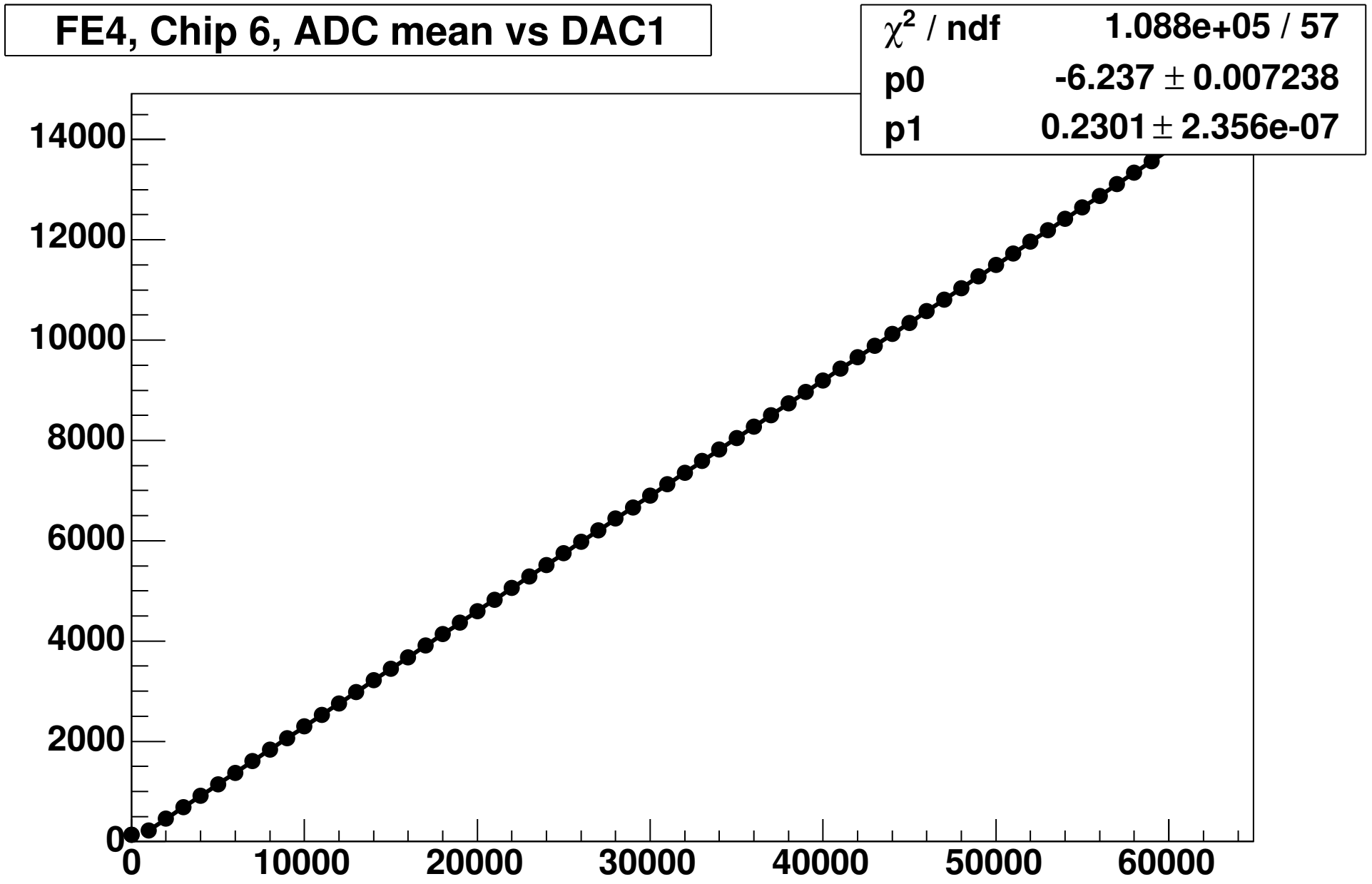

FE4, Chip 5, ADC noise vs DAC1
1.1
1.08
1.06
1.04
1.02
1
0.98
0.96
0.94
0.92
0
10000
20000
30000
40000
50000
60000

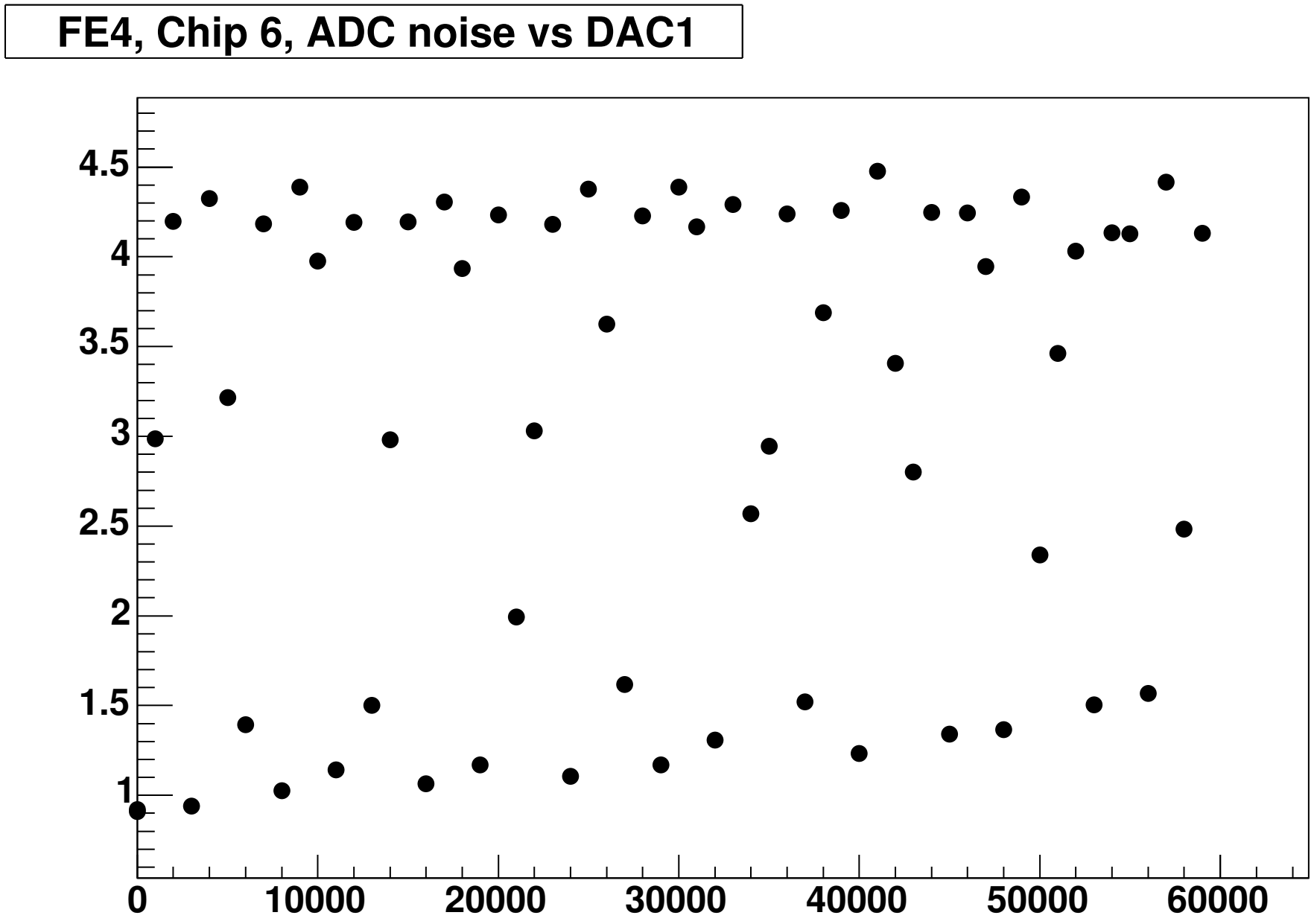

FE4, Chip 5, ADC residuals vs DAC1
1
0.5
0
-0.5
-1
-1.5
-2
0
10000
20000
30000
40000
50000
60000

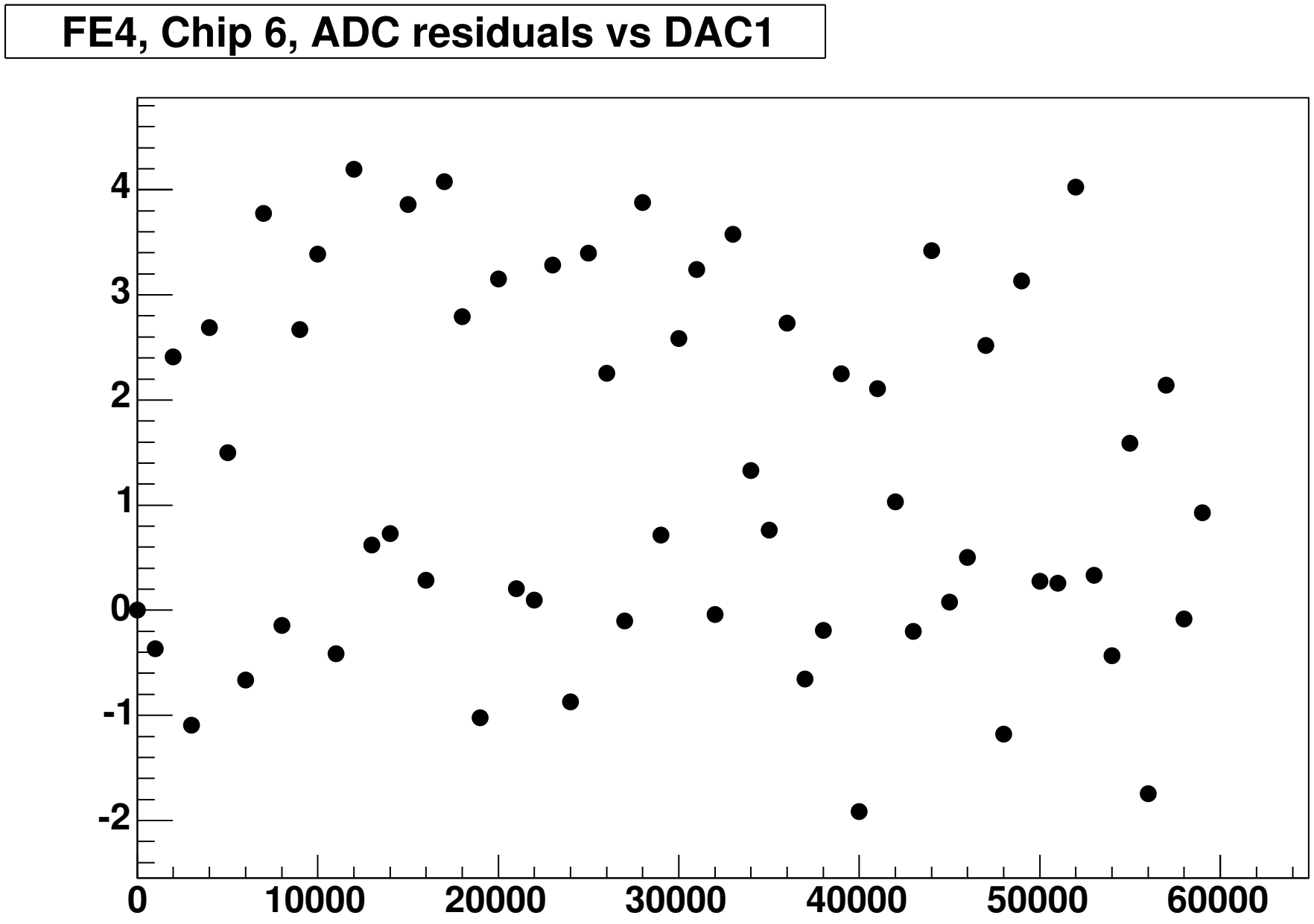

FE4, Chip 6, ADC mean vs DAC0
χ² / ndf 2.266e+04 / 57
p0 138 ± 0.003941
p1 2.671e-07 ± 1.146e-07
138.4
138.2
138
137.8
137.6
137.4
137.2
0
10000
20000
30000
40000
50000
60000

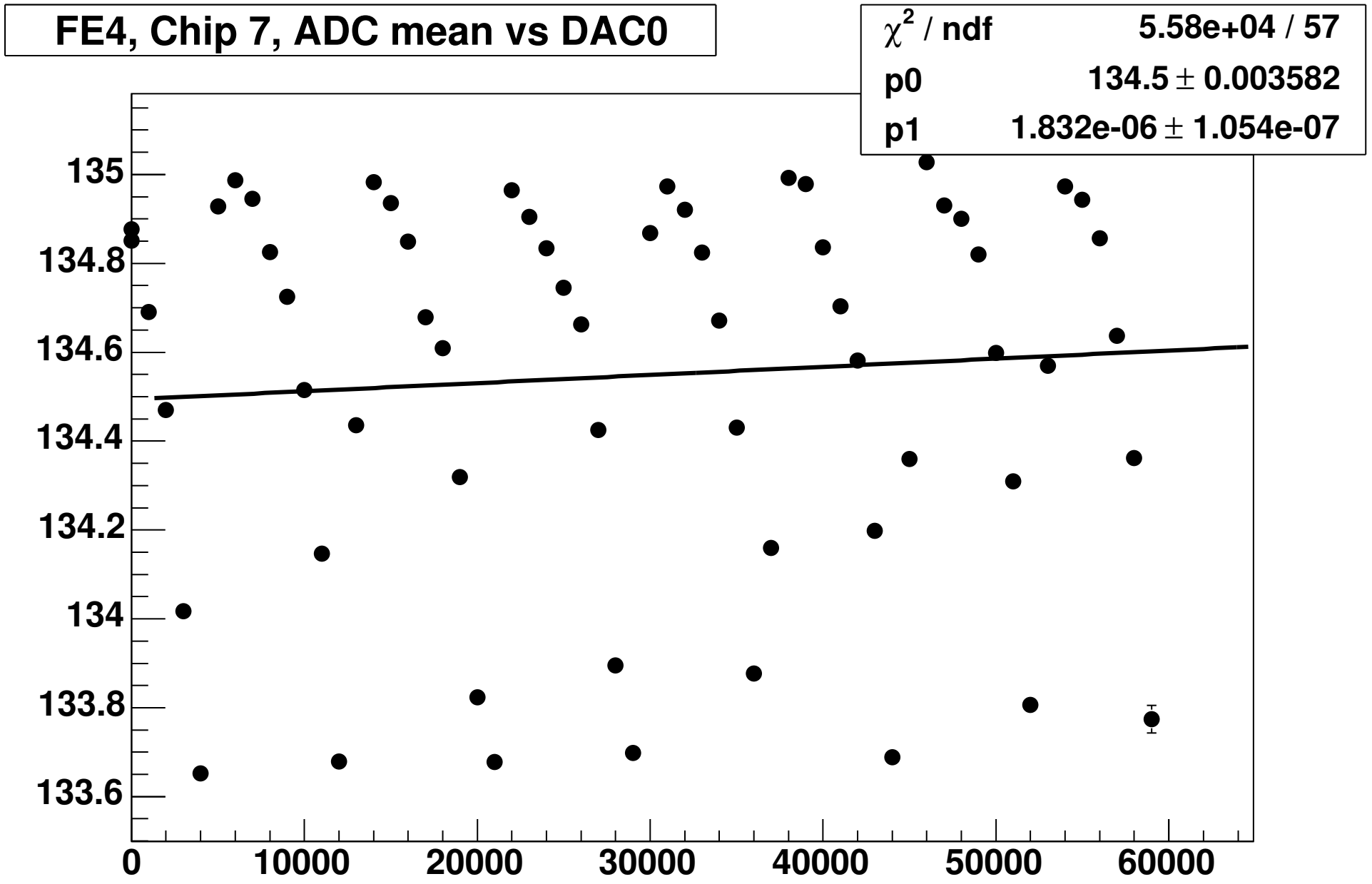

FE4, Chip 6, ADC noise vs DAC0
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0
10000
20000
30000
40000
50000
60000

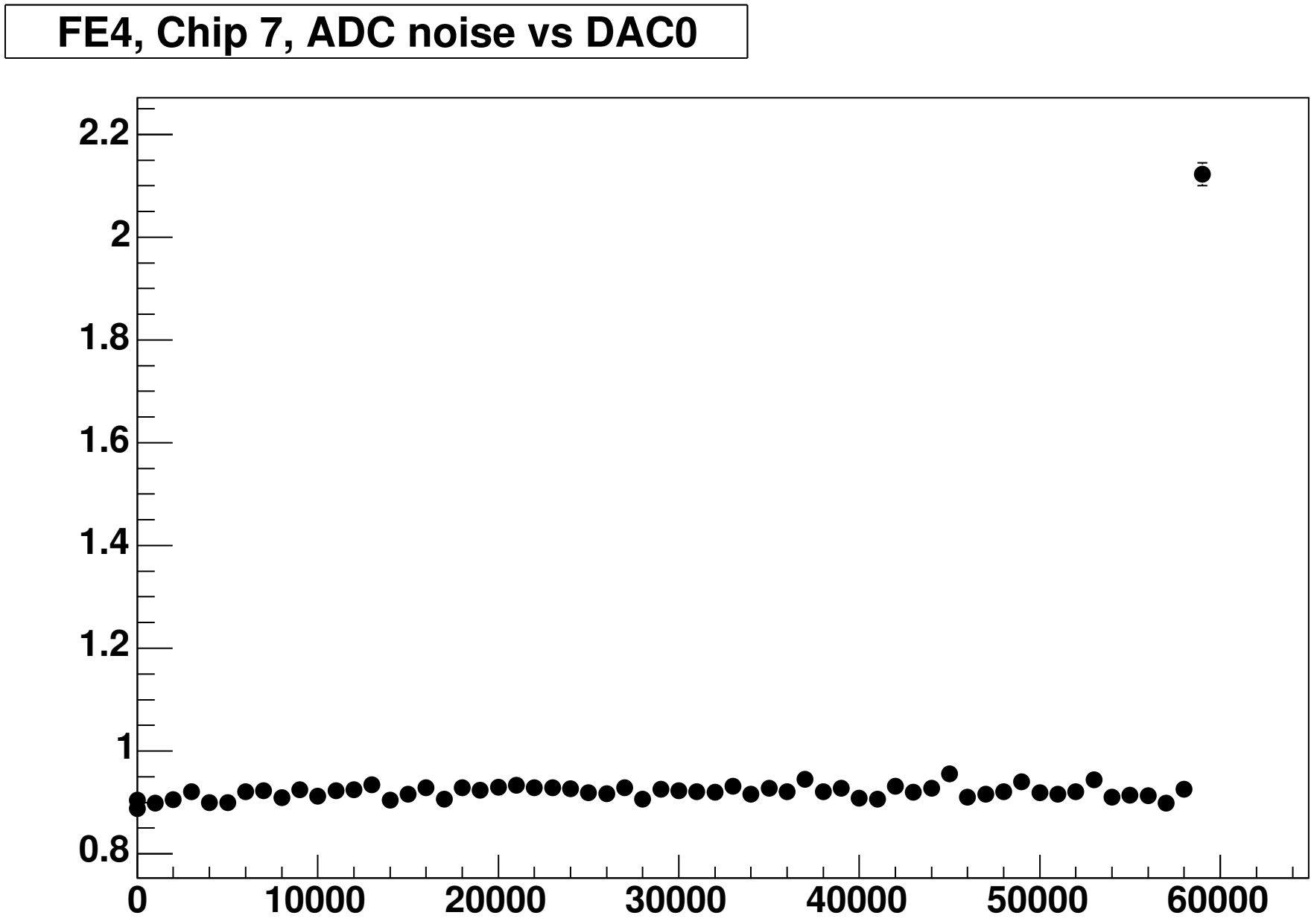

FE4, Chip 6, ADC residuals vs DAC0
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
0
10000
20000
30000
40000
50000
60000

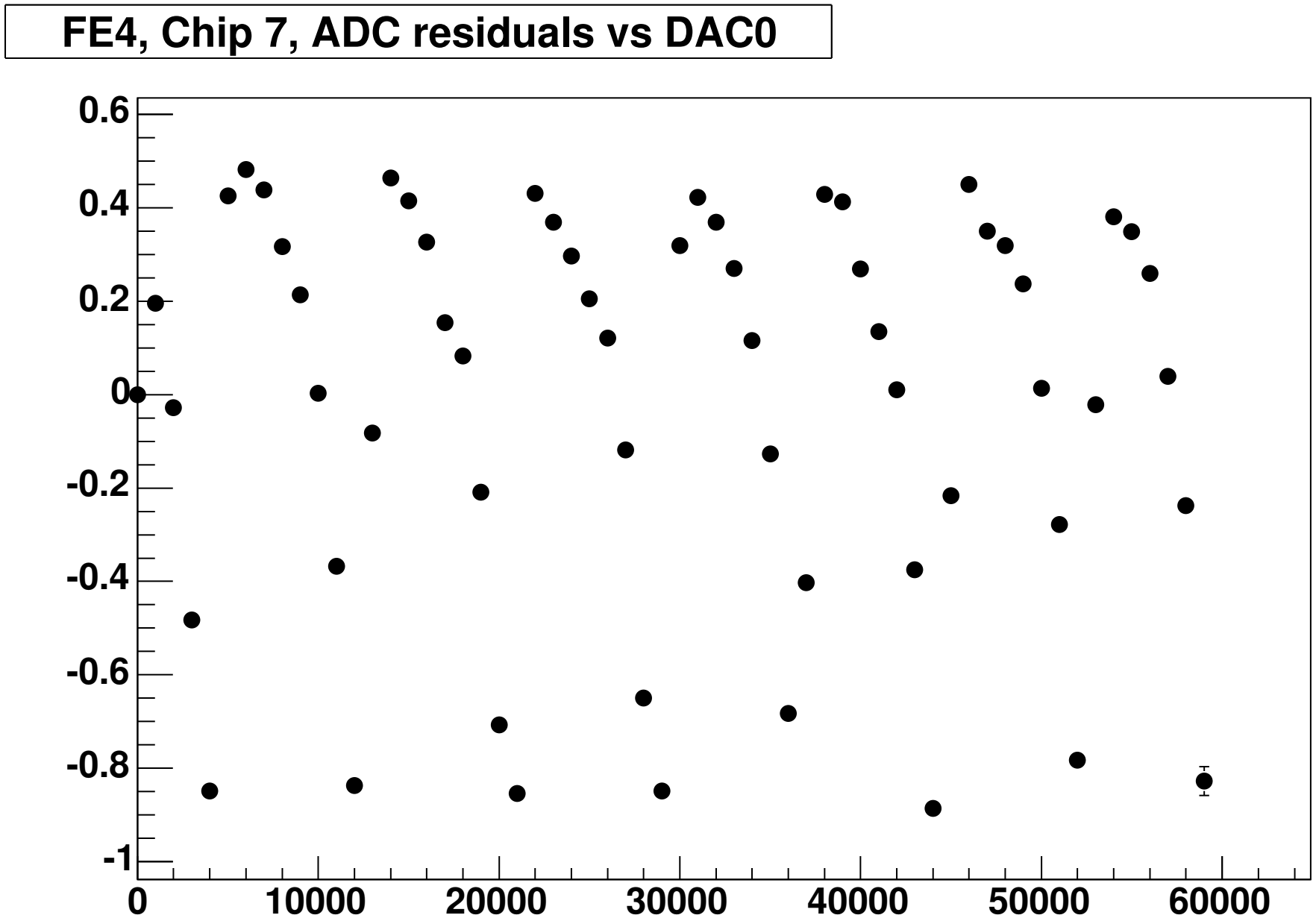

FE4, Chip 6, ADC mean vs DAC1
χ² / ndf 1.088e+05 / 57
p0 -6.237 ± 0.007238
p1 0.2301 ± 2.356e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

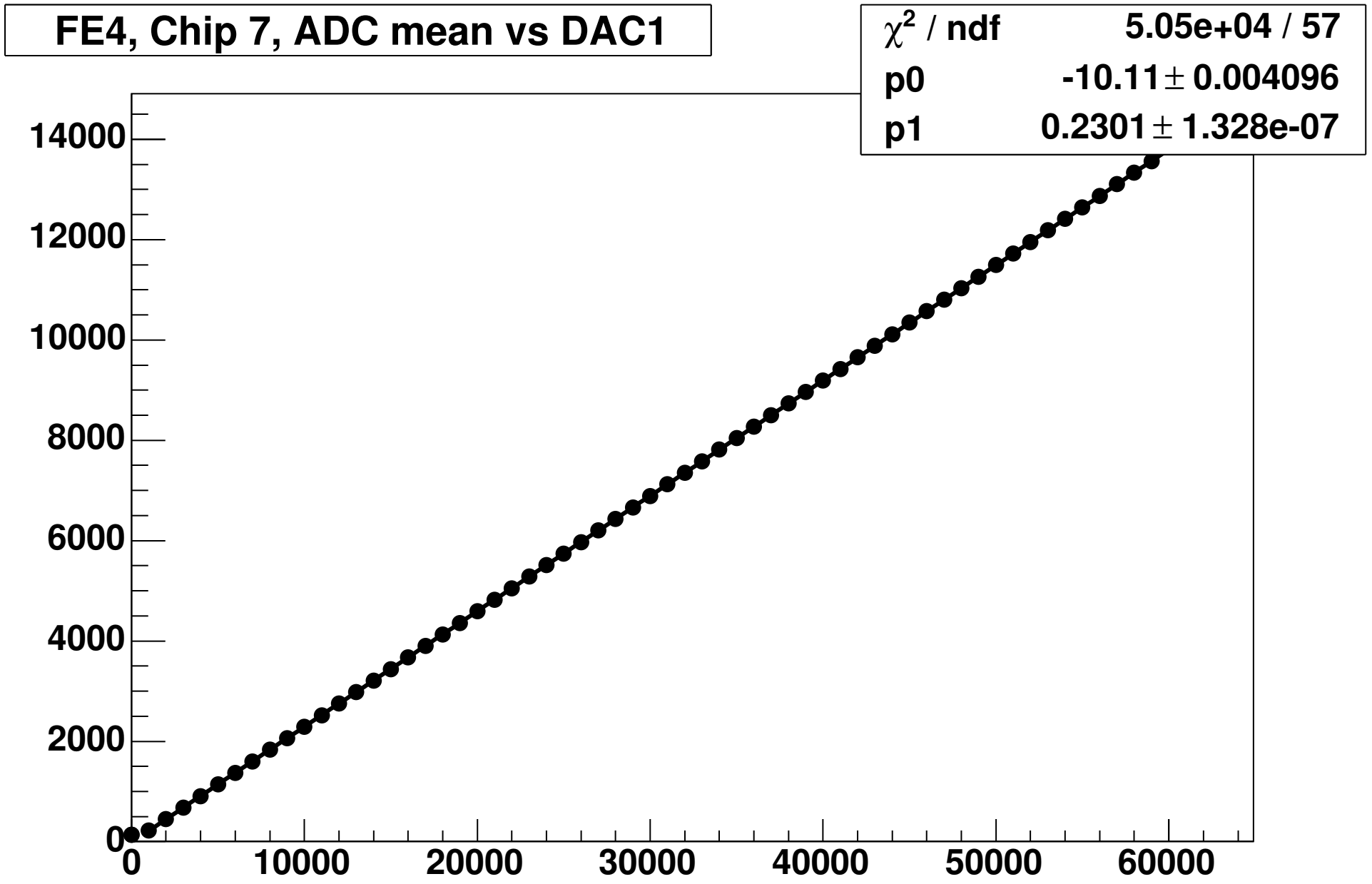

FE4, Chip 6, ADC noise vs DAC1
4.5
4
3.5
3
2.5
2
1.5
1
0
10000
20000
30000
40000
50000
60000

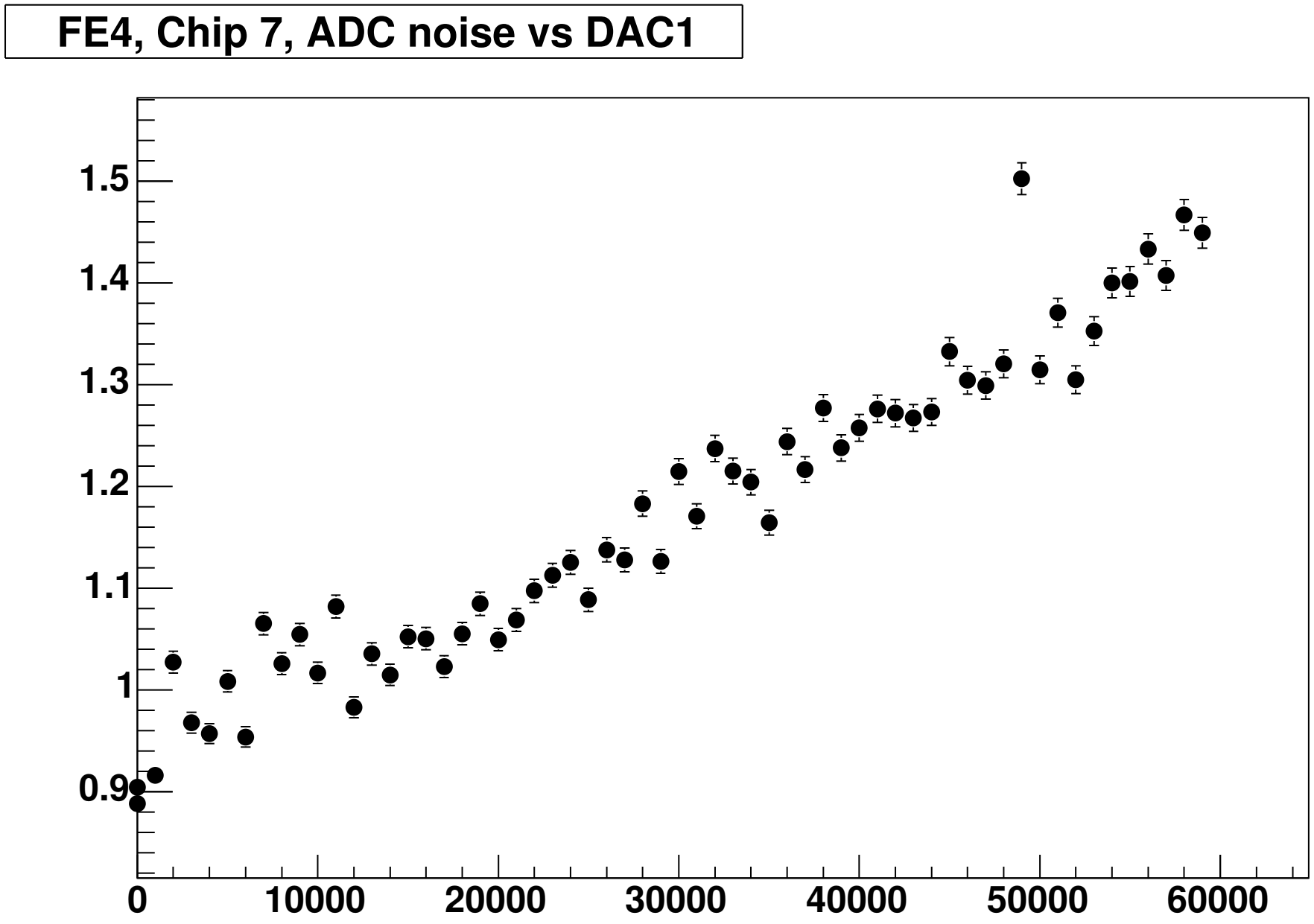

FE4, Chip 6, ADC residuals vs DAC1
4
3
2
1
0
-1
-2
0
10000
20000
30000
40000
50000
60000

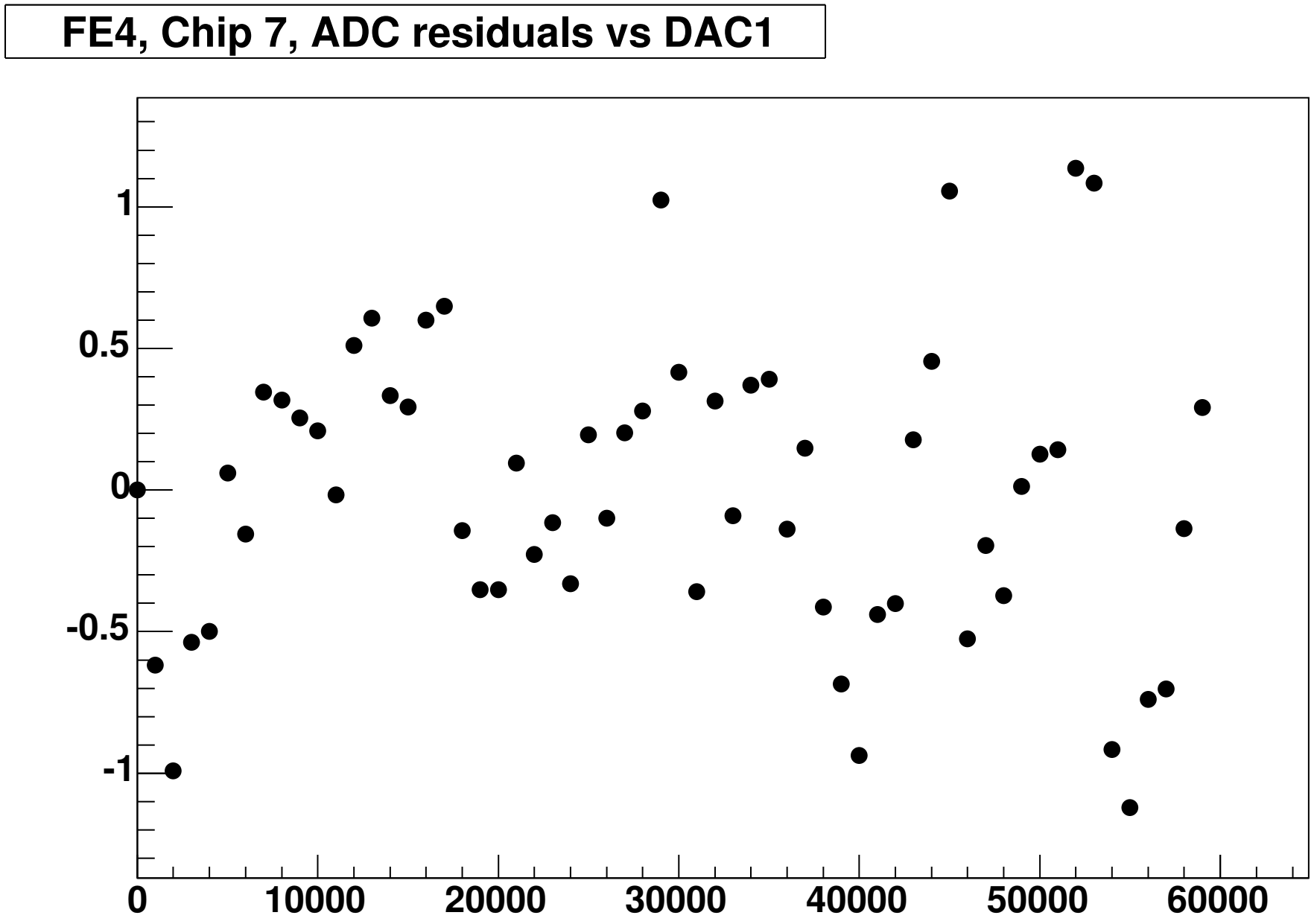

FE4, Chip 7, ADC mean vs DAC0
χ² / ndf 5.58e+04 / 57
p0 134.5 ± 0.003582
p1 1.832e-06 ± 1.054e-07
135
134.8
134.6
134.4
134.2
134
133.8
133.6
0
10000
20000
30000
40000
50000
60000

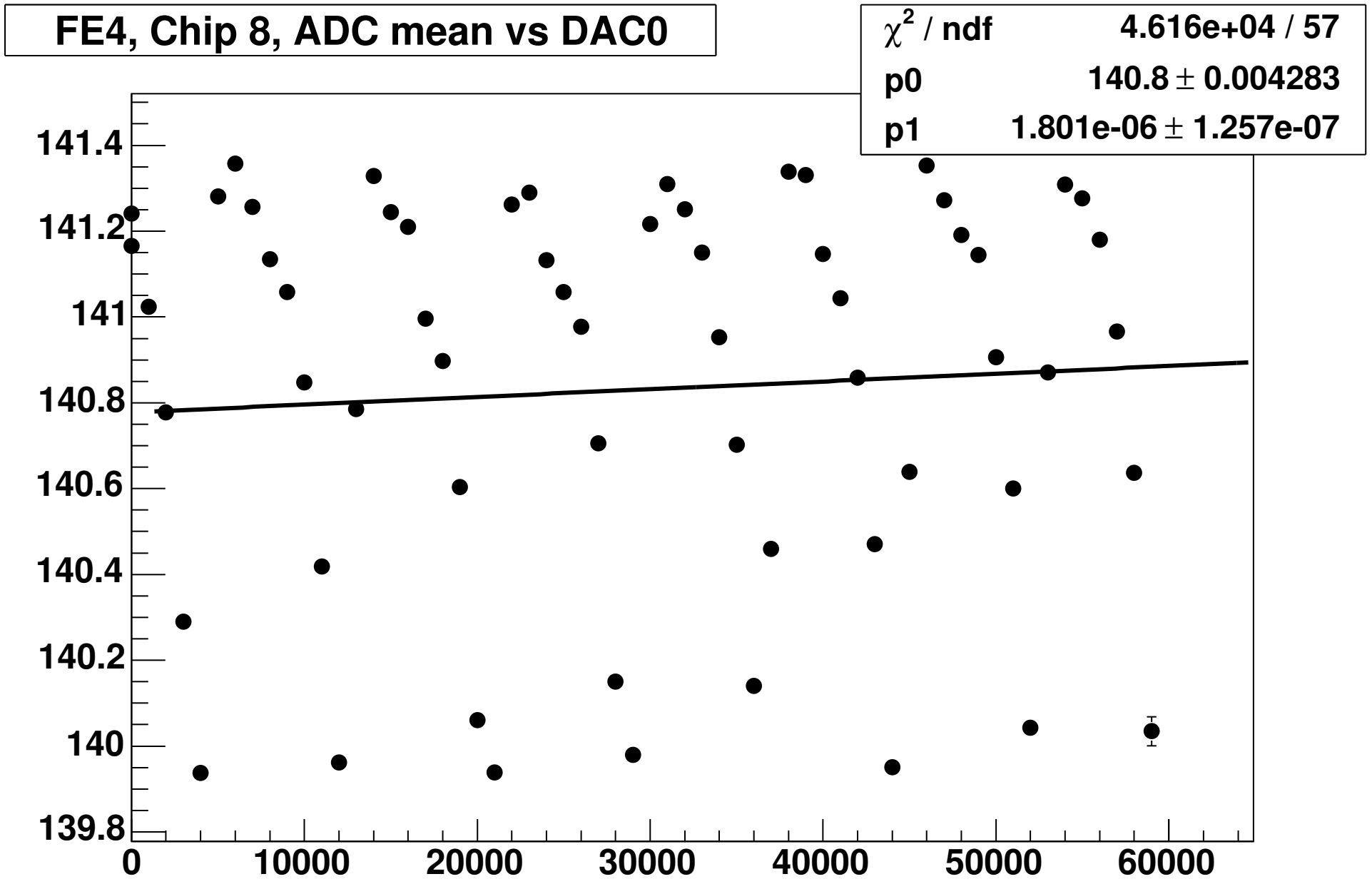

FE4, Chip 7, ADC noise vs DAC0
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0
10000
20000
30000
40000
50000
60000

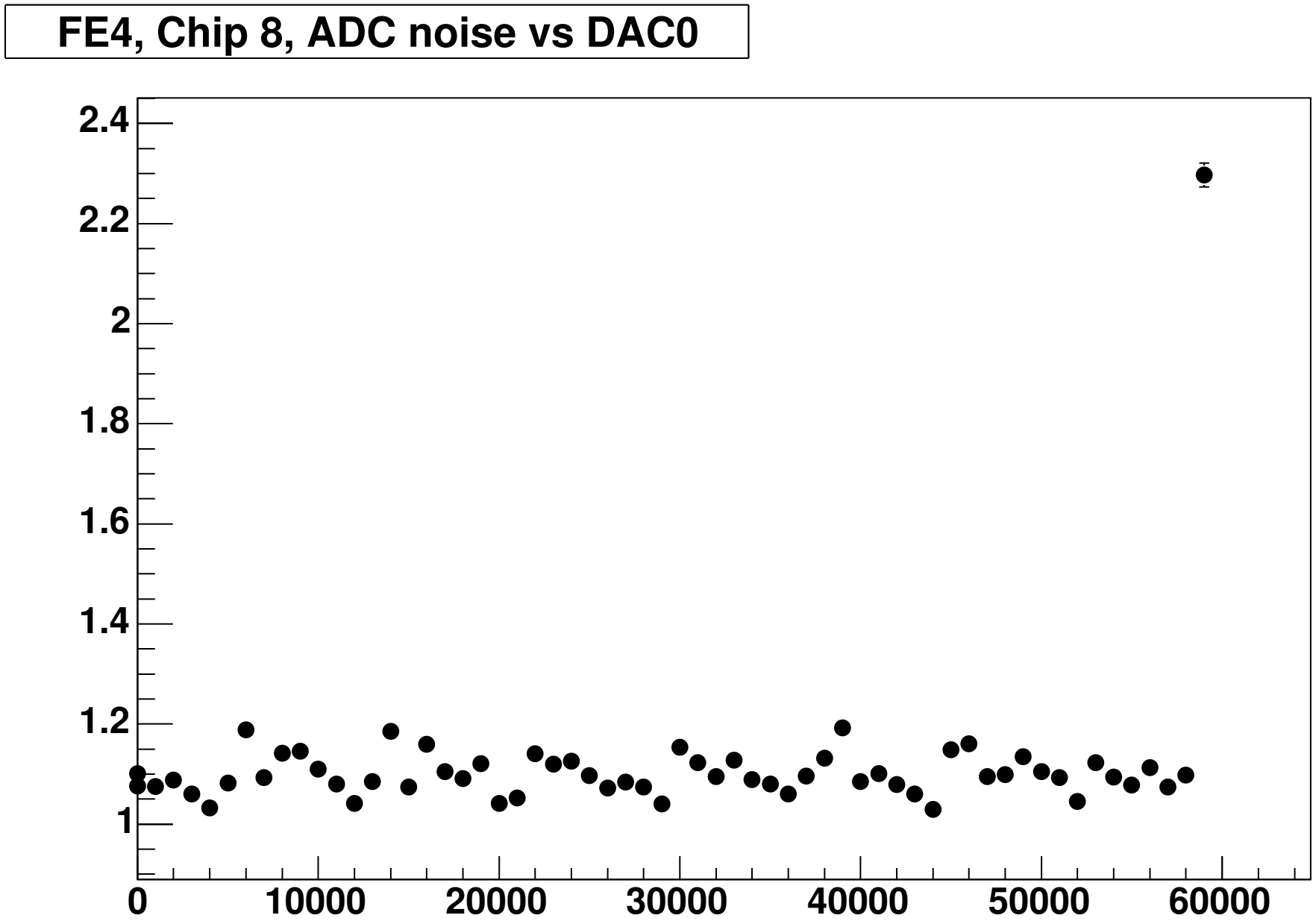

FE4, Chip 7, ADC residuals vs DAC0
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
0
10000
20000
30000
40000
50000
60000

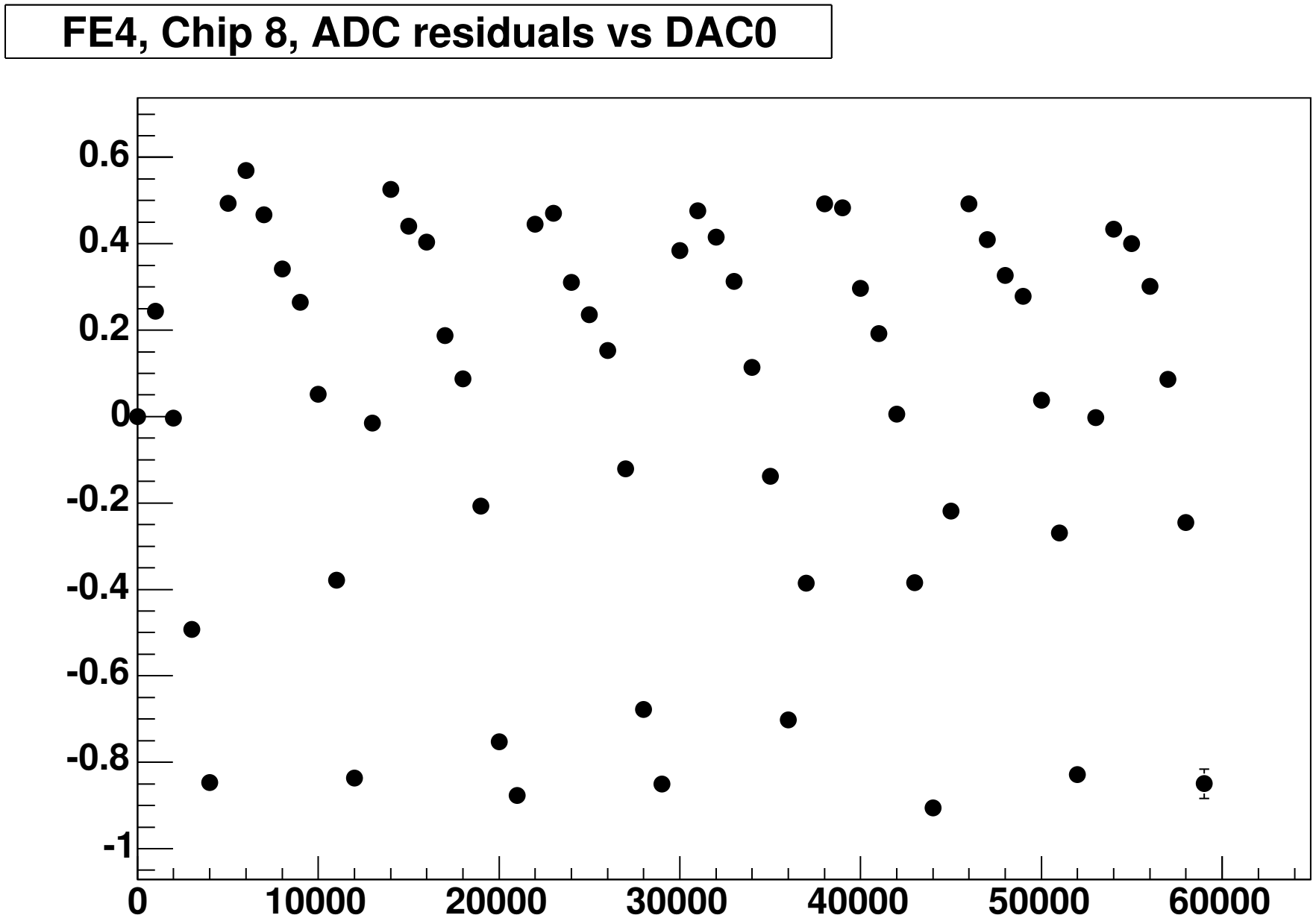

FE4, Chip 7, ADC mean vs DAC1
χ² / ndf 5.05e+04 / 57
p0 -10.11 ± 0.004096
p1 0.2301 ± 1.328e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

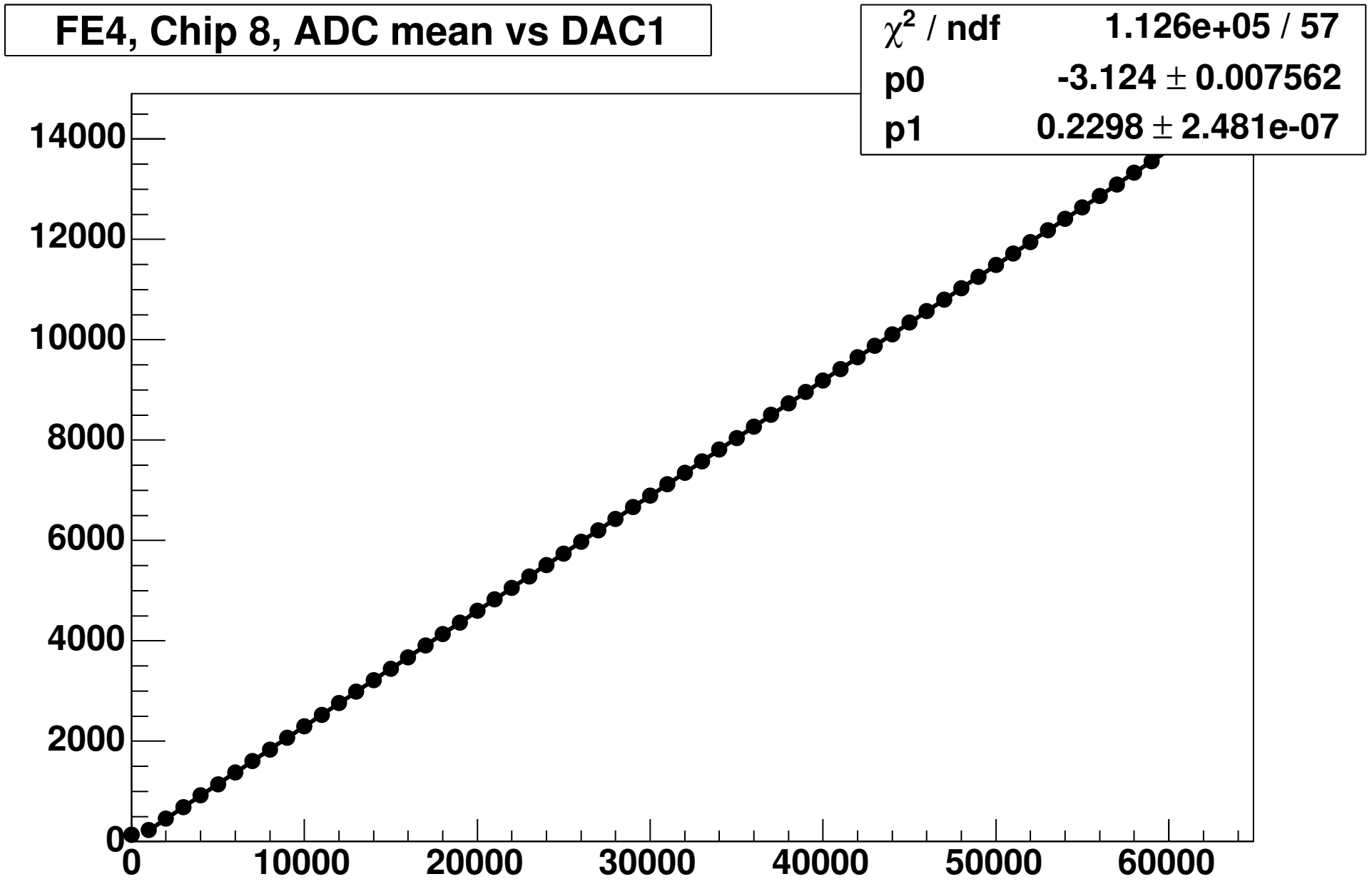

FE4, Chip 7, ADC noise vs DAC1
1.5
1.4
1.3
1.2
1.1
1
0.9
0
10000
20000
30000
40000
50000
60000

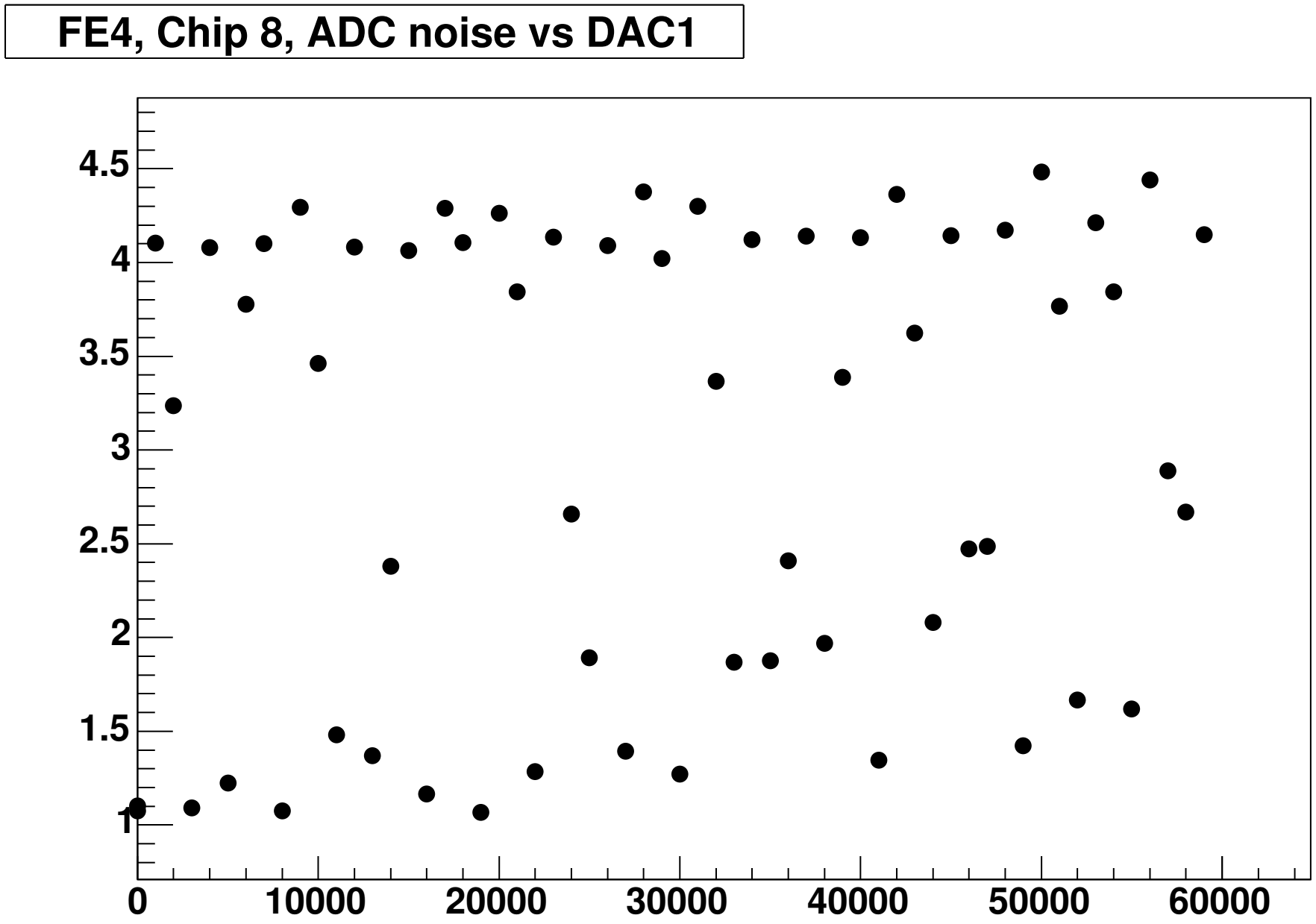

FE4, Chip 7, ADC residuals vs DAC1
1
0.5
0
-0.5
-1
0
10000
20000
30000
40000
50000
60000

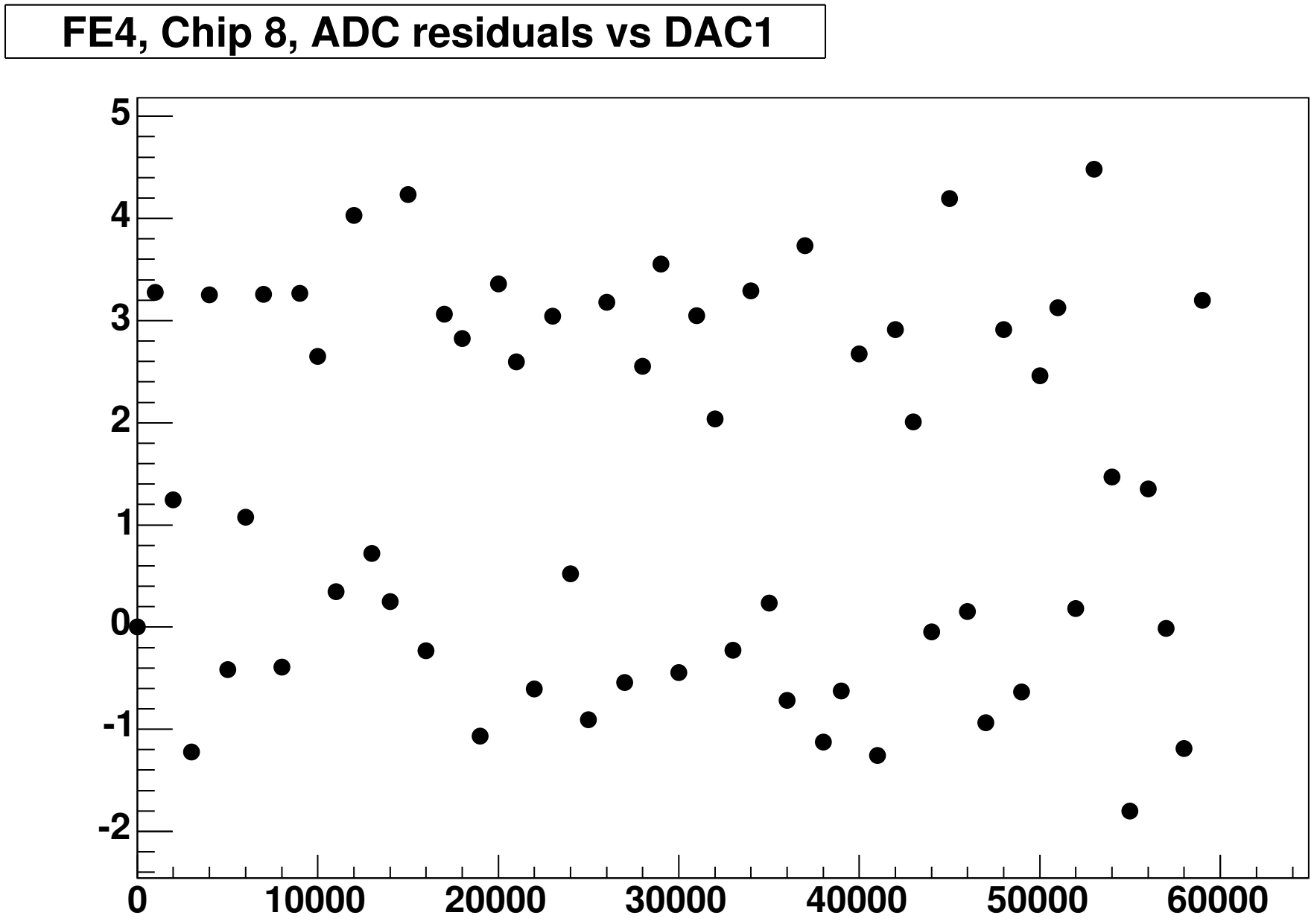

FE4, Chip 8, ADC mean vs DAC0
χ² / ndf 4.616e+04 / 57
p0 140.8 ± 0.004283
p1 1.801e-06 ± 1.257e-07
141.4
141.2
141
140.8
140.6
140.4
140.2
140
139.8
0
10000
20000
30000
40000
50000
60000

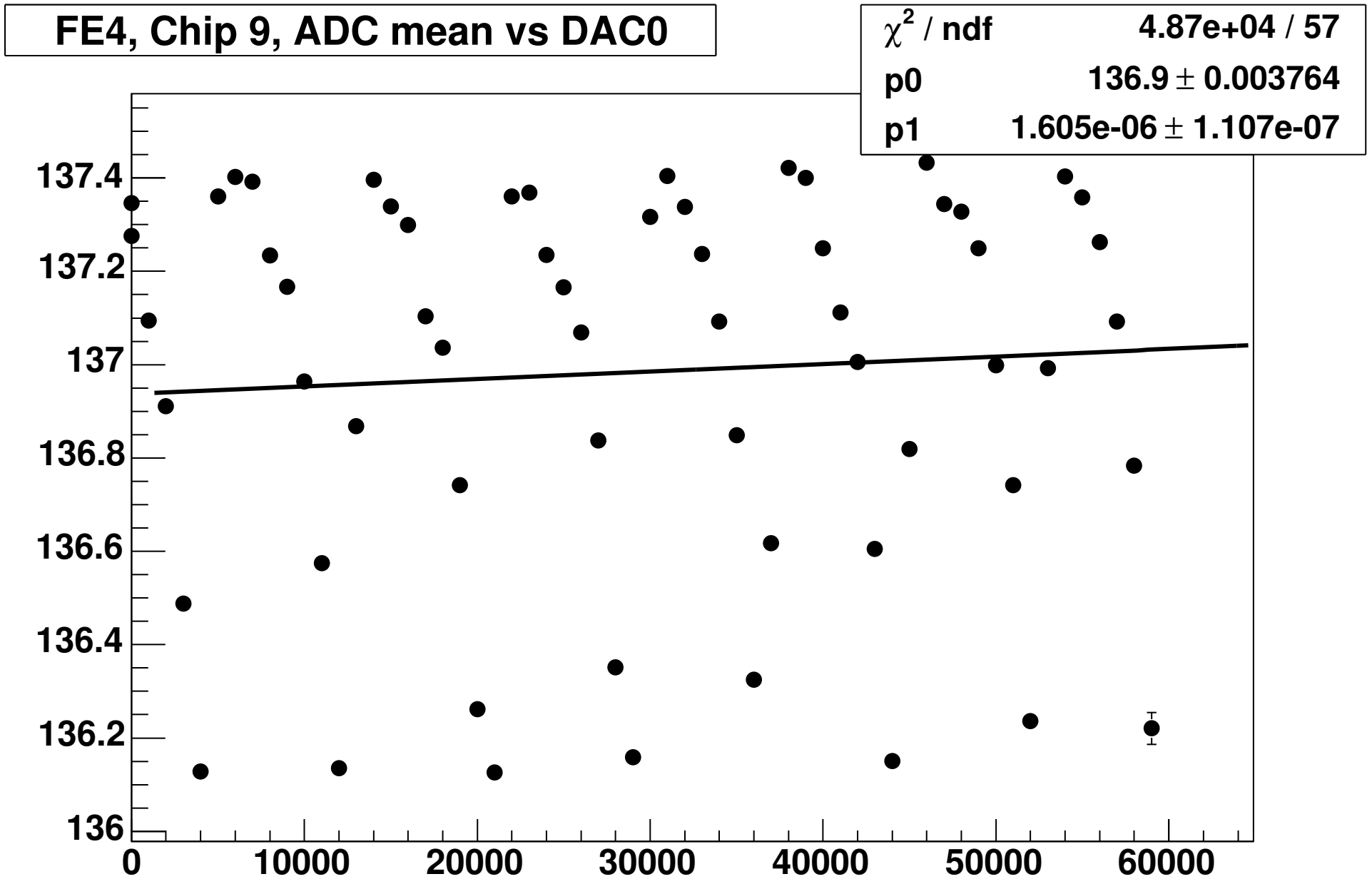

FE4, Chip 8, ADC noise vs DAC0
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0
10000
20000
30000
40000
50000
60000

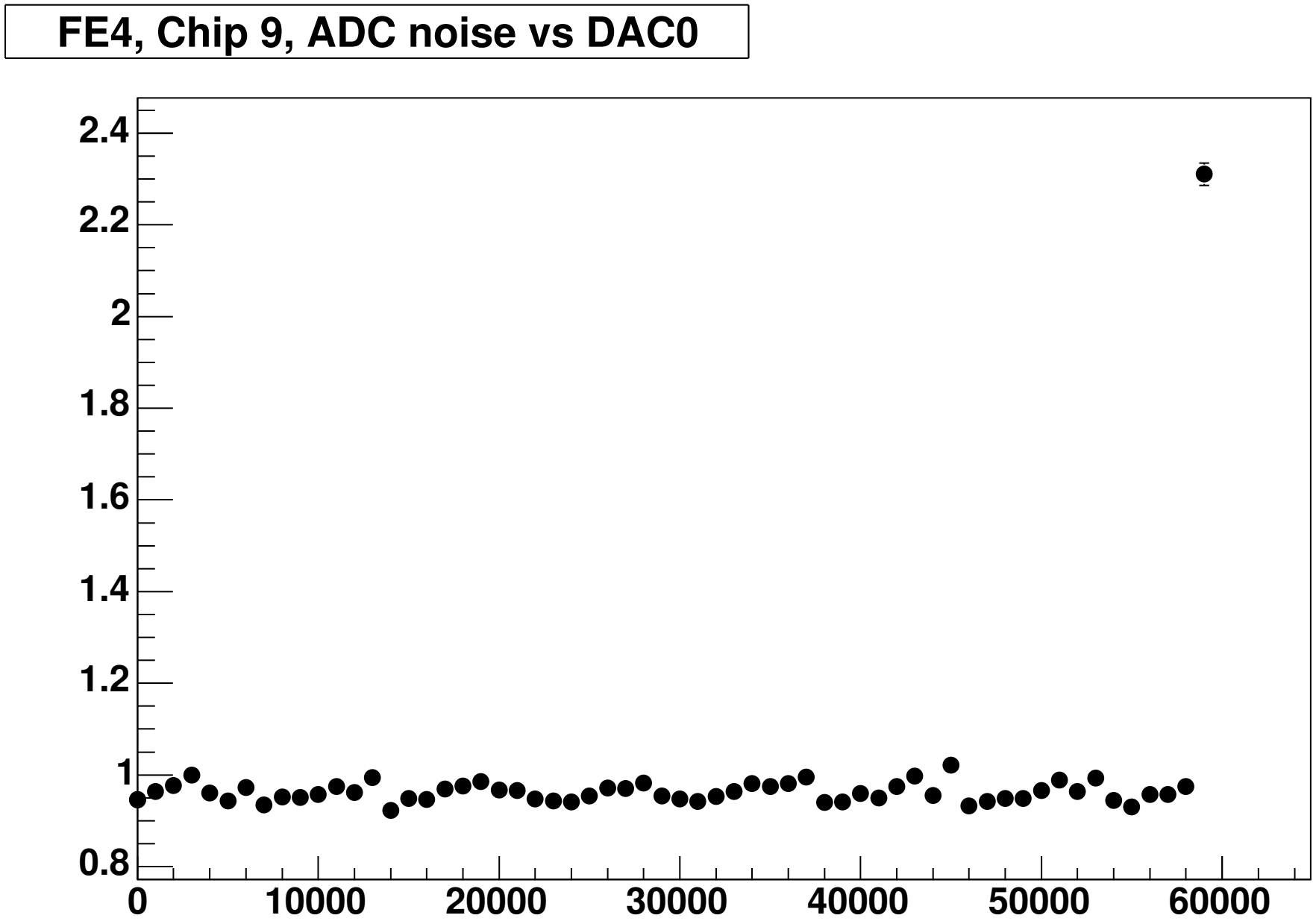

FE4, Chip 8, ADC residuals vs DAC0
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
0
10000
20000
30000
40000
50000
60000

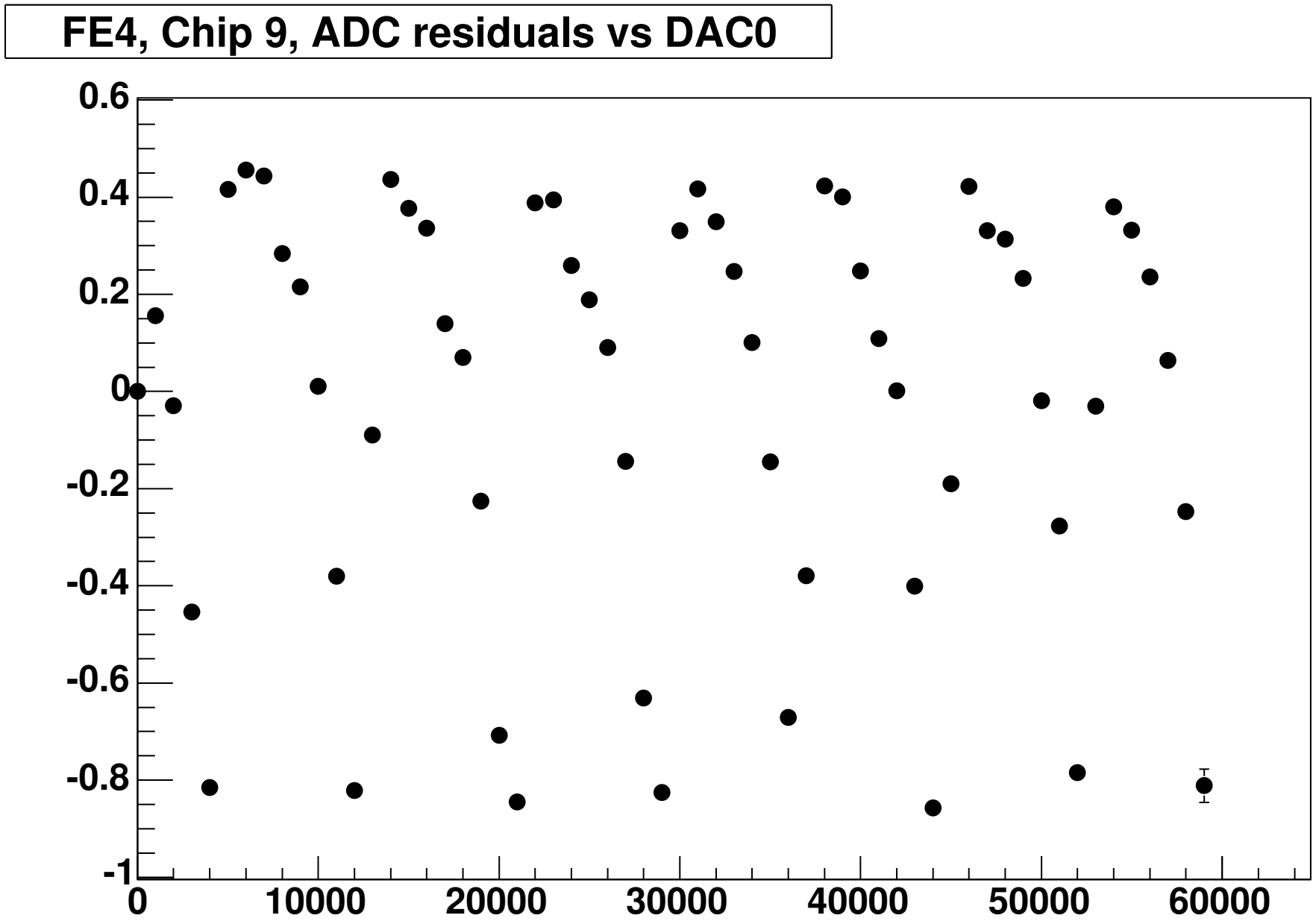

FE4, Chip 8, ADC mean vs DAC1
χ² / ndf 1.126e+05 / 57
p0 -3.124 ± 0.007562
p1 0.2298 ± 2.481e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

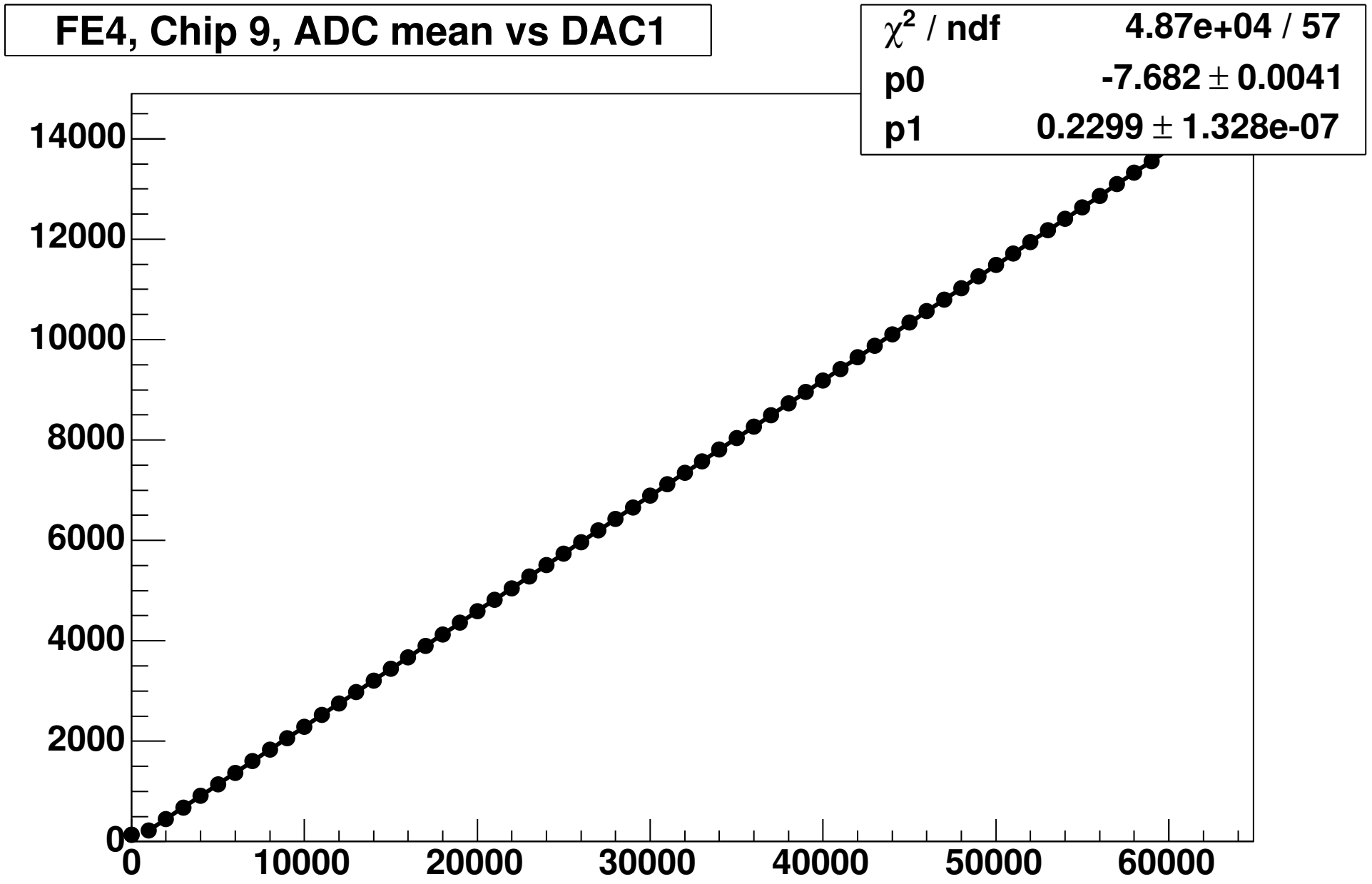

FE4, Chip 8, ADC noise vs DAC1
4.5
4
3.5
3
2.5
2
1.5
1
0
10000
20000
30000
40000
50000
60000

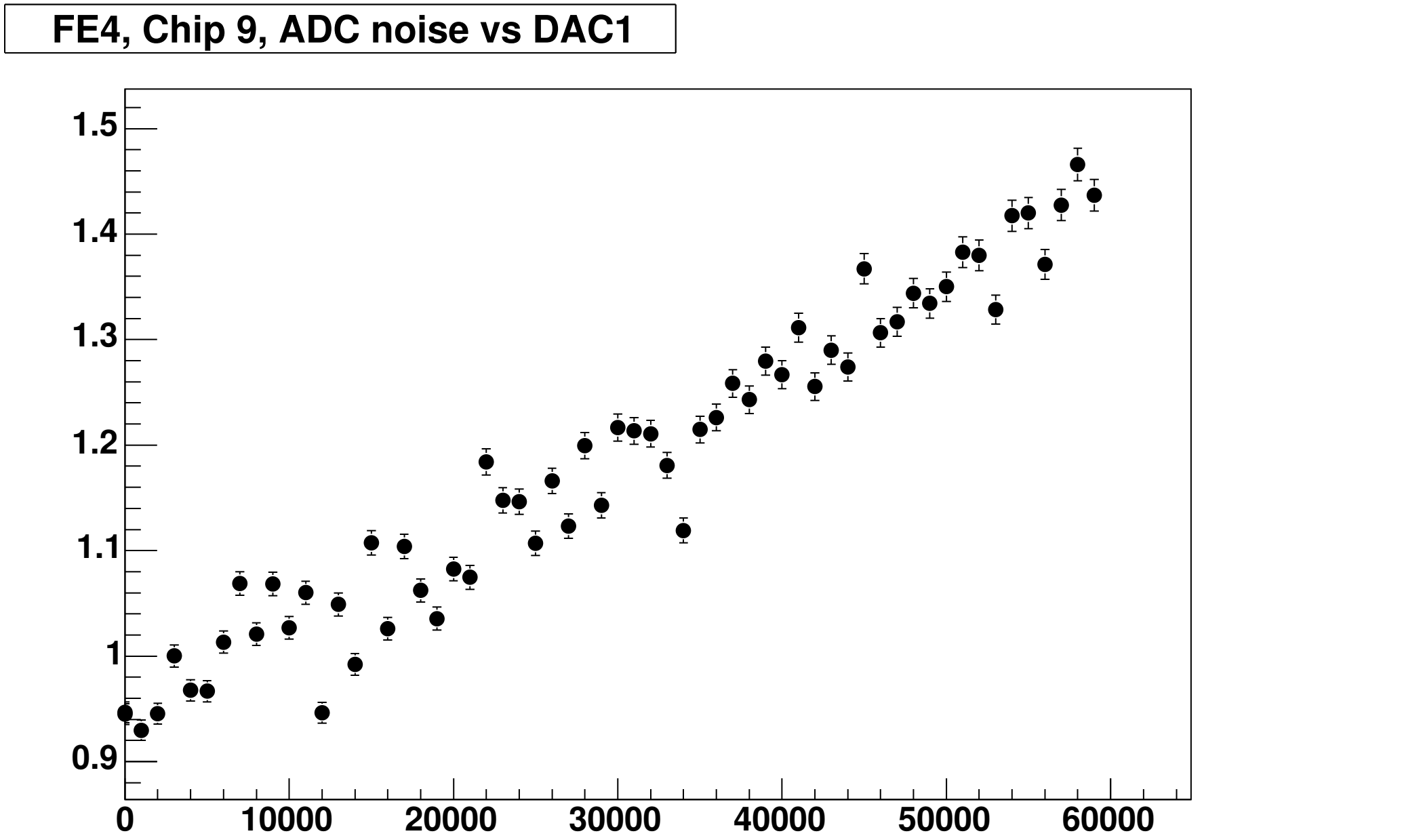

FE4, Chip 8, ADC residuals vs DAC1
5
4
3
2
1
0
-1
-2
0
10000
20000
30000
40000
50000
60000

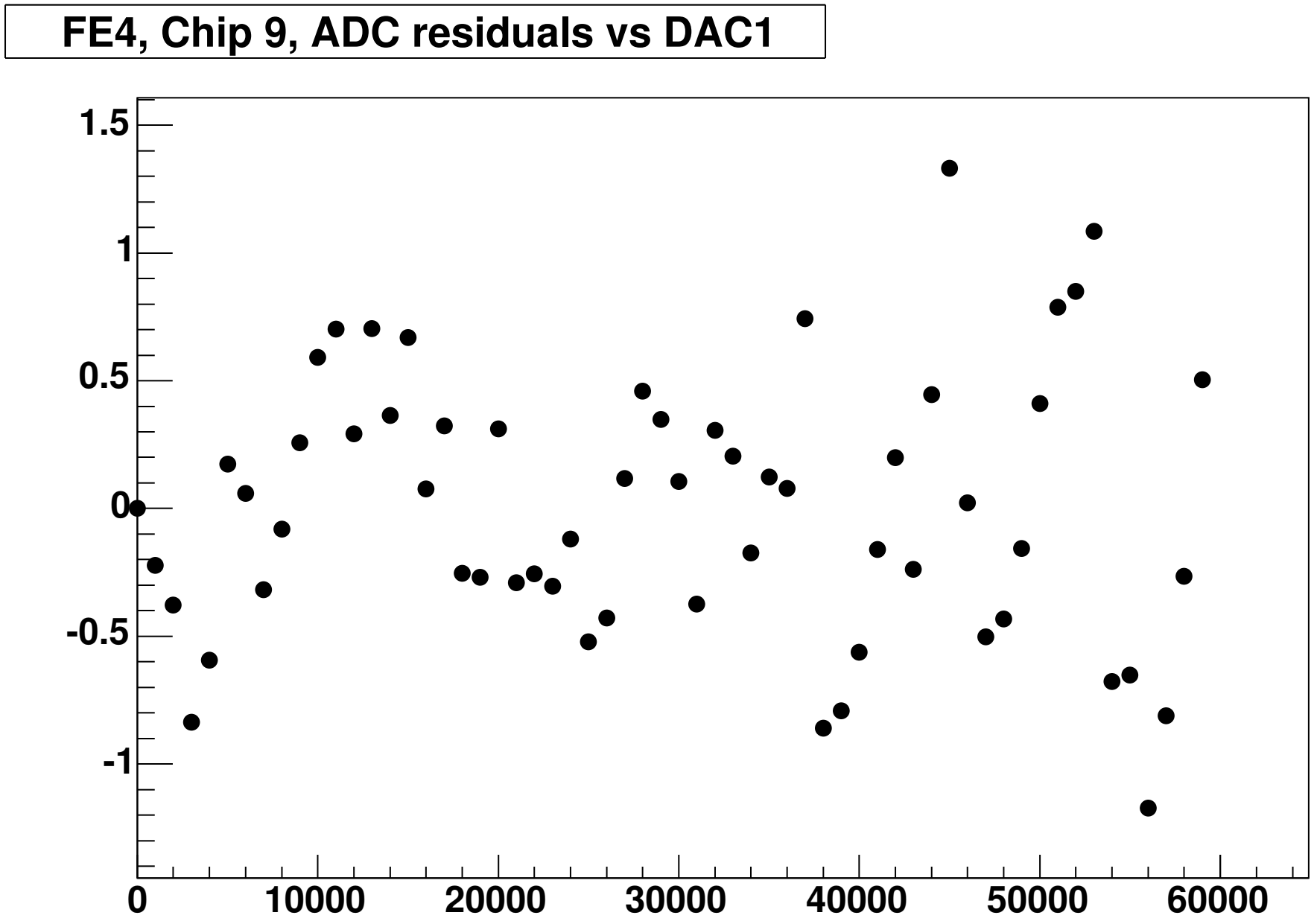

FE4, Chip 9, ADC mean vs DAC0
χ² / ndf 4.87e+04 / 57
p0 136.9 ± 0.003764
p1 1.605e-06 ± 1.107e-07
137.4
137.2
137
136.8
136.6
136.4
136.2
136
0
10000
20000
30000
40000
50000
60000

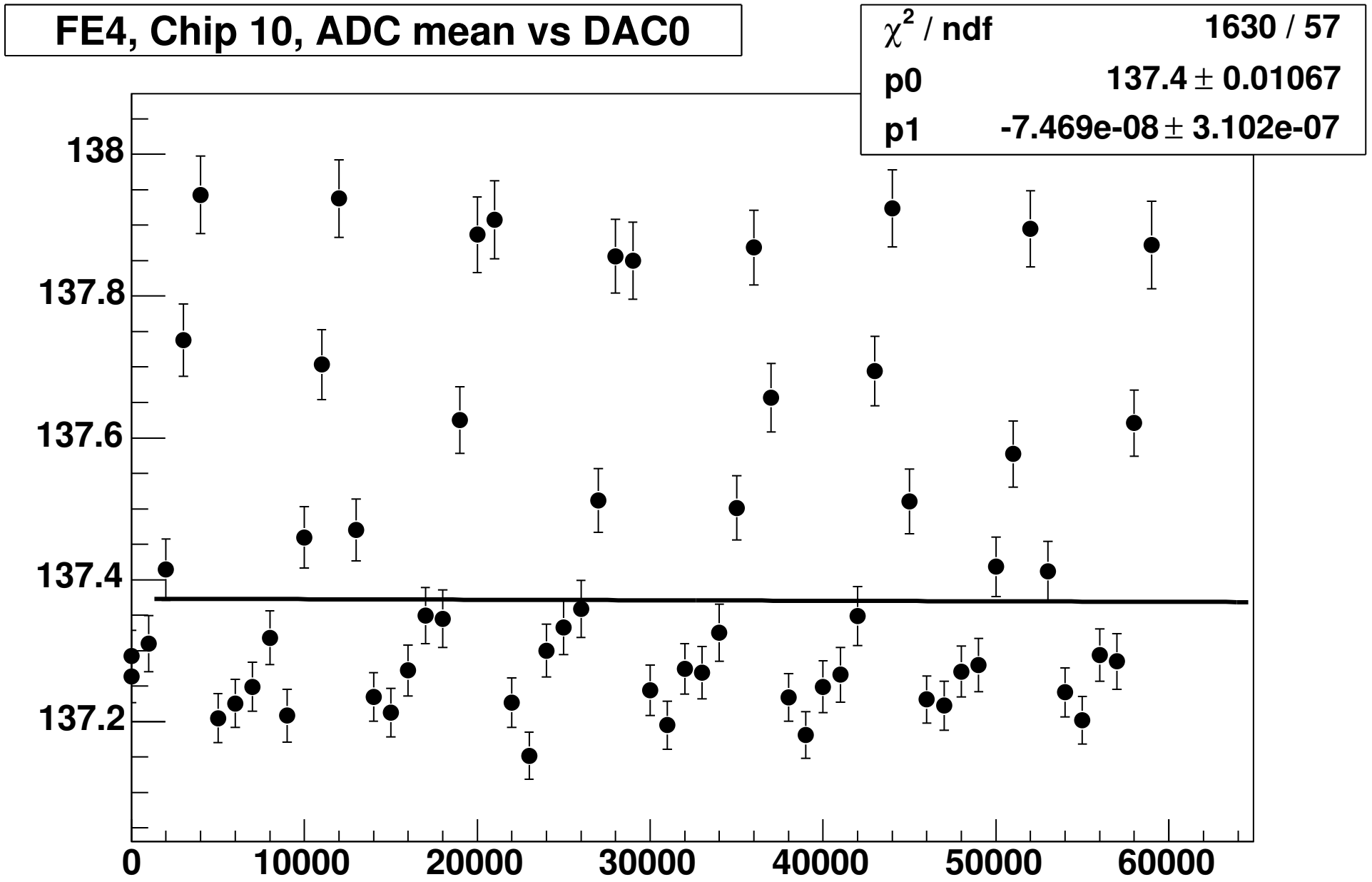

FE4, Chip 9, ADC noise vs DAC0
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0
10000
20000
30000
40000
50000
60000

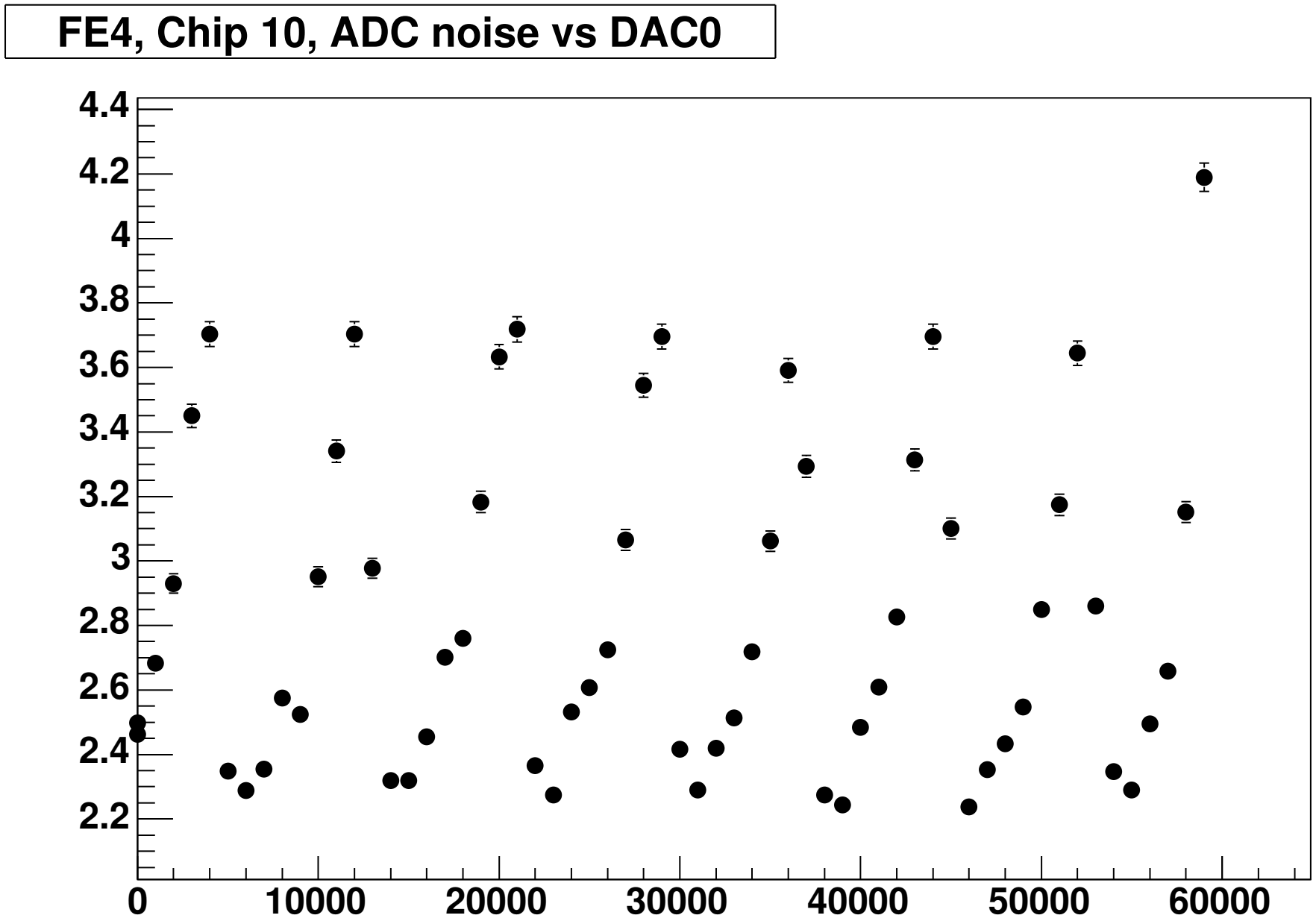

FE4, Chip 9, ADC residuals vs DAC0
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
0
10000
20000
30000
40000
50000
60000

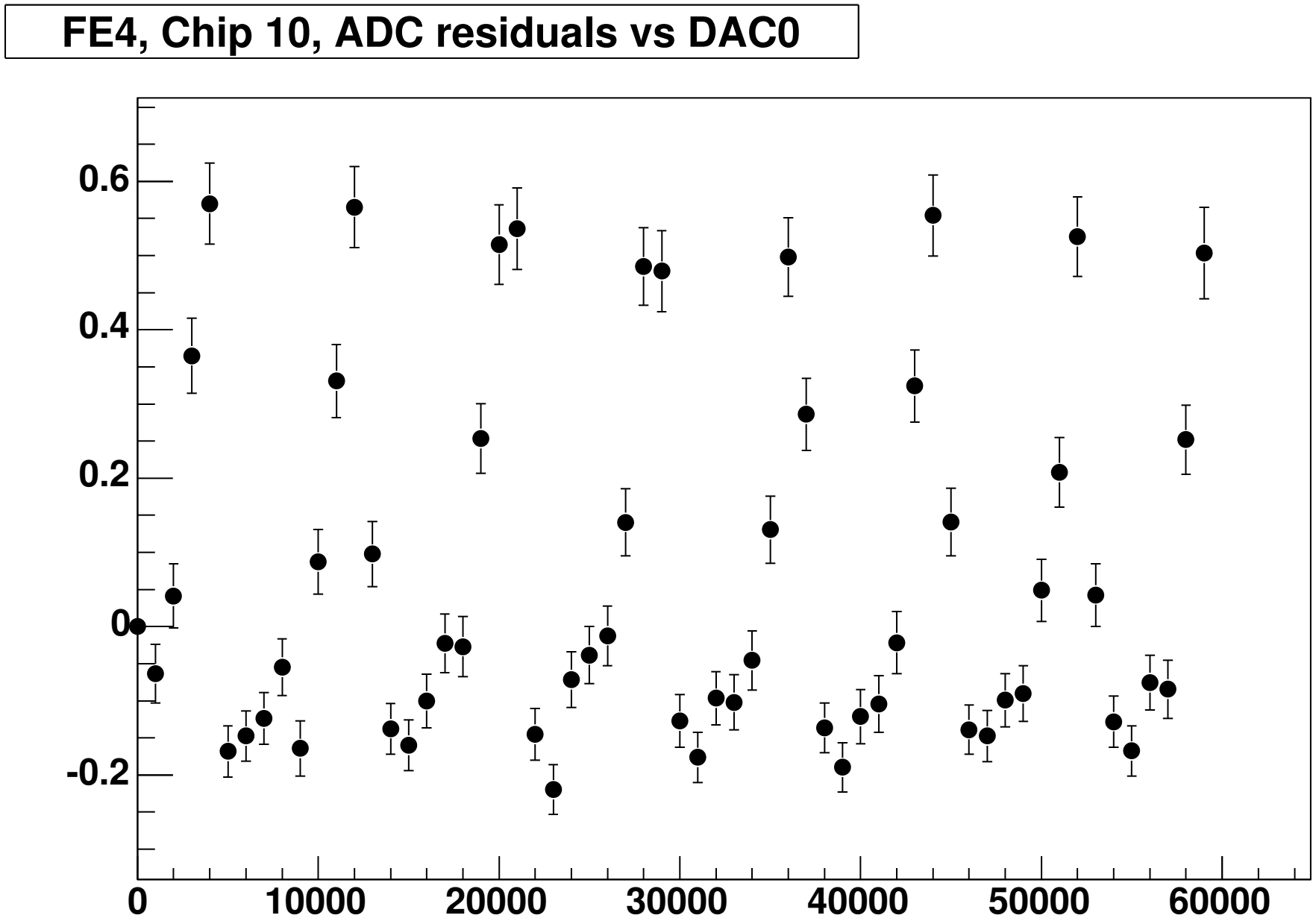

FE4, Chip 9, ADC mean vs DAC1
χ² / ndf 4.87e+04 / 57
p0 -7.682 ± 0.0041
p1 0.2299 ± 1.328e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

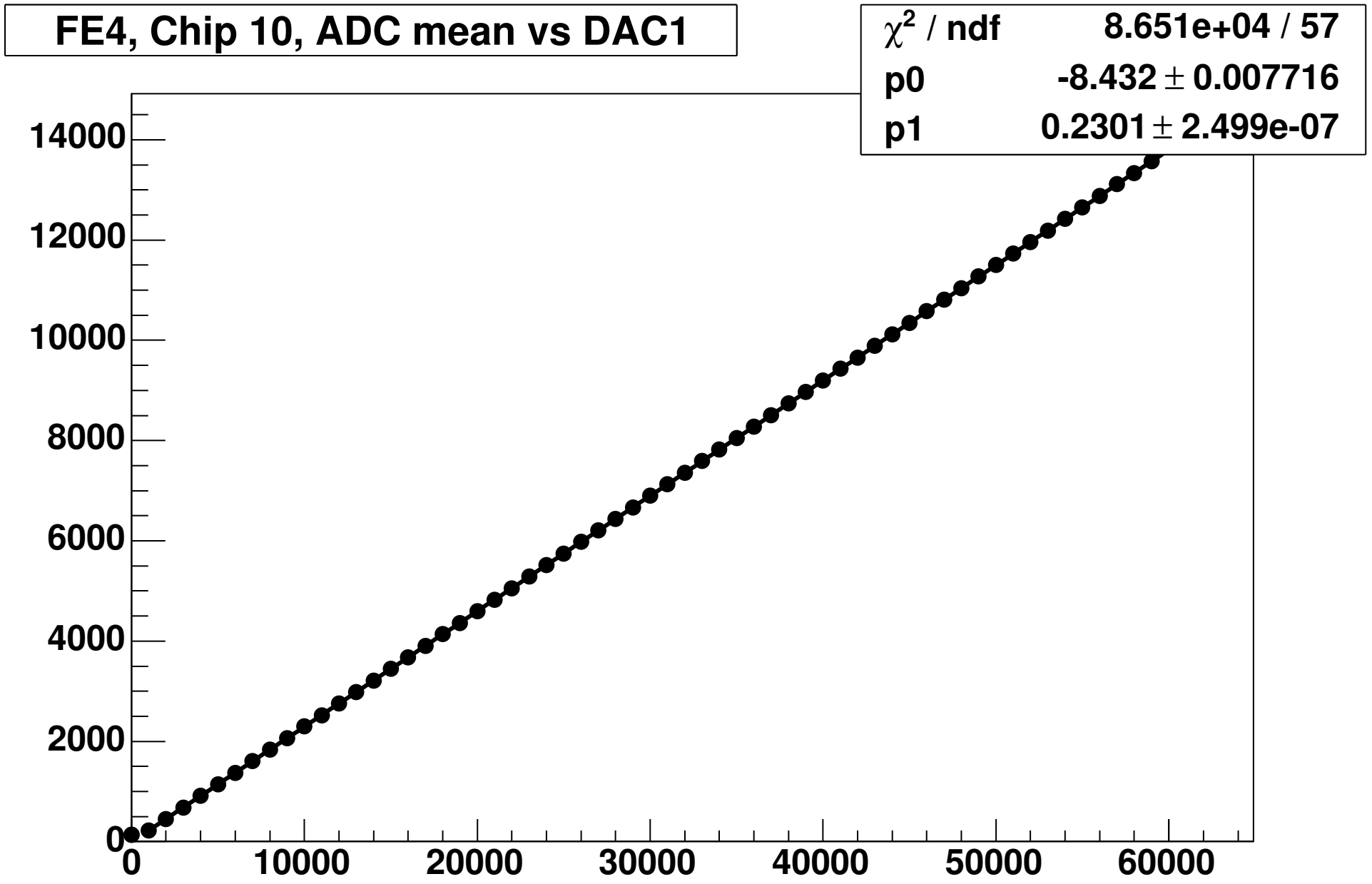

FE4, Chip 9, ADC noise vs DAC1
1.5
1.4
1.3
1.2
1.1
1
0.9
0
10000
20000
30000
40000
50000
60000

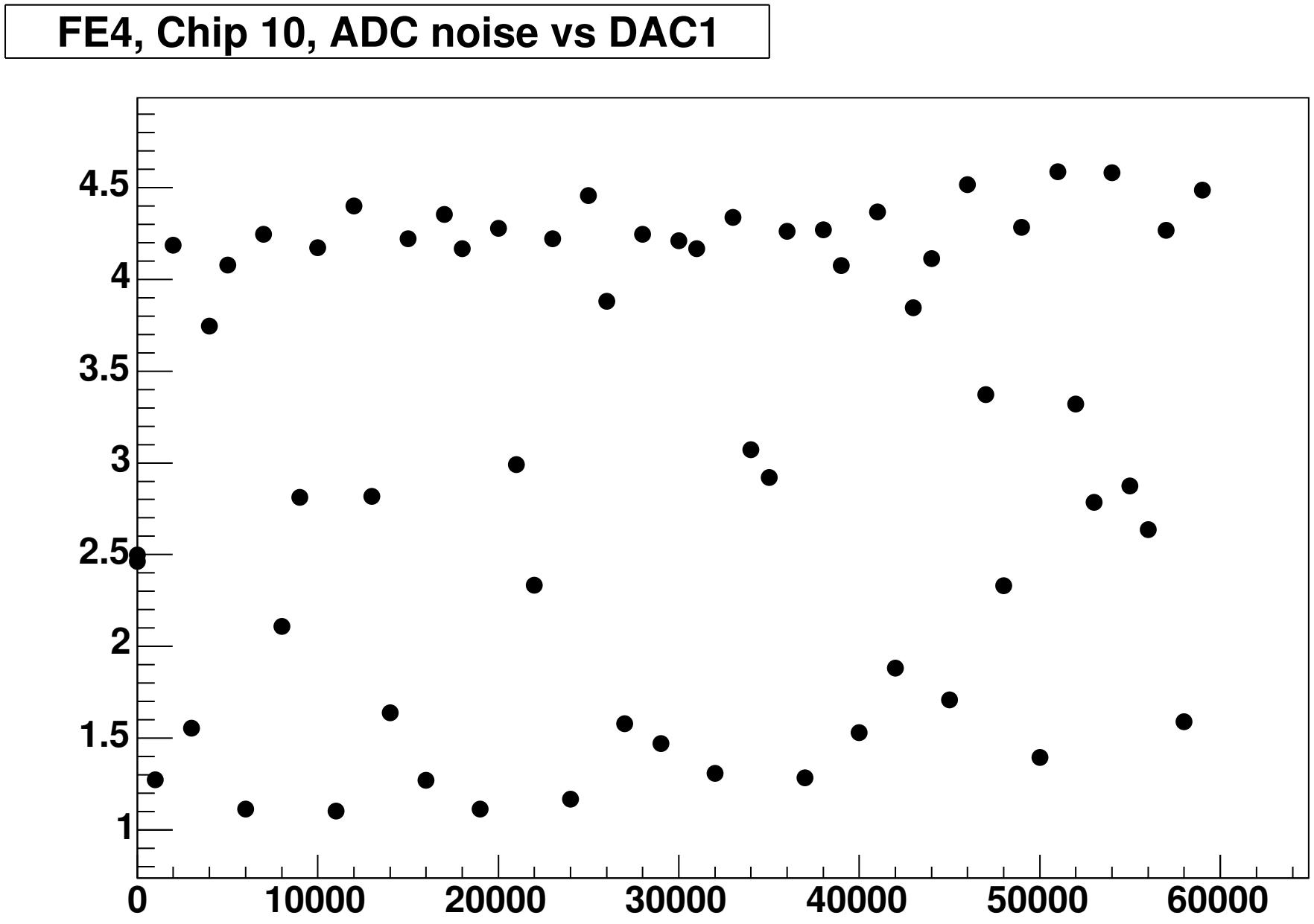

FE4, Chip 9, ADC residuals vs DAC1
1.5
1
0.5
0
-0.5
-1
0
10000
20000
30000
40000
50000
60000

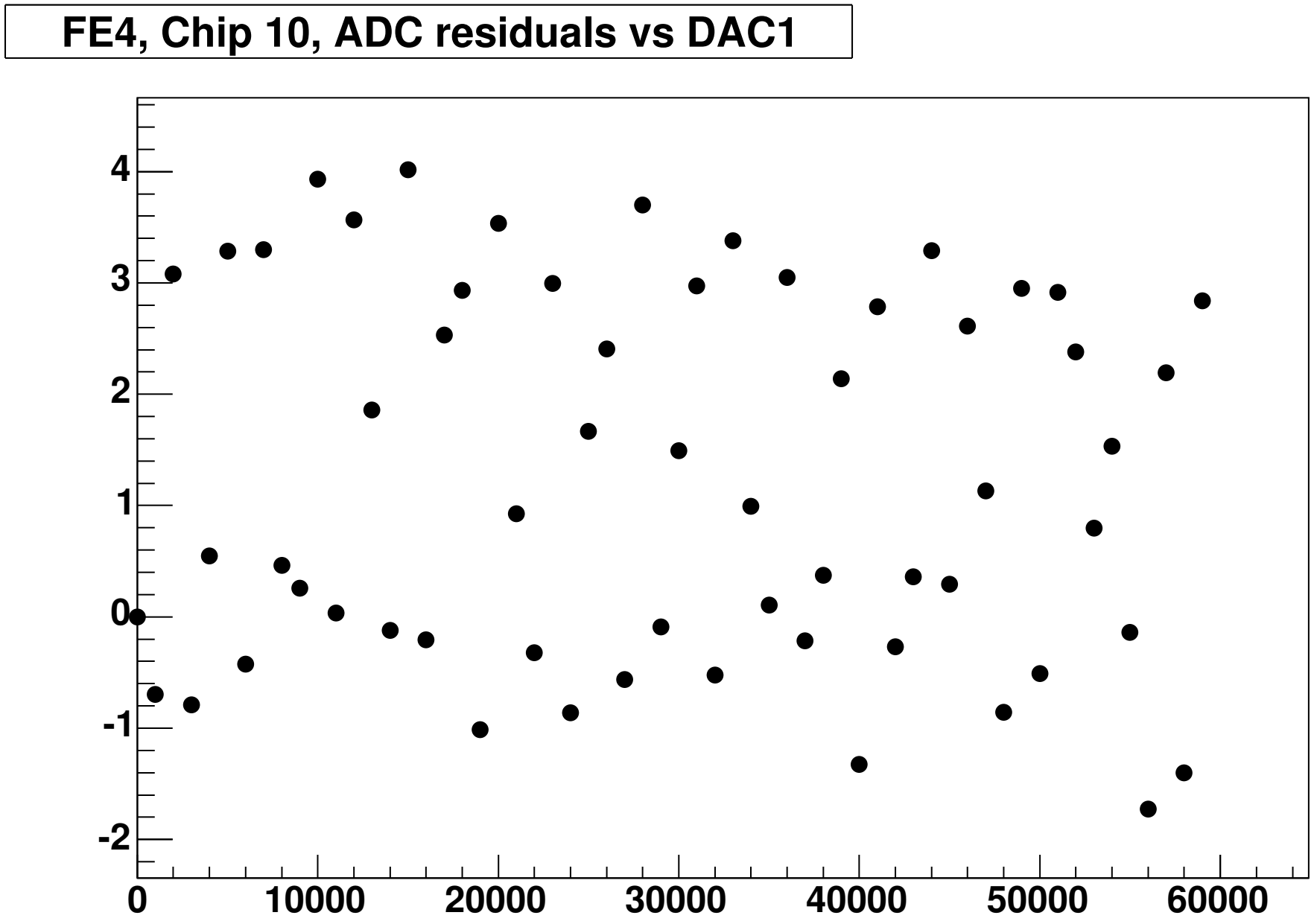

FE4, Chip 10, ADC mean vs DAC0
χ² / ndf 1630 / 57
p0 137.4 ± 0.01067
p1 -7.469e-08 ± 3.102e-07
138
137.8
137.6
137.4
137.2
0
10000
20000
30000
40000
50000
60000

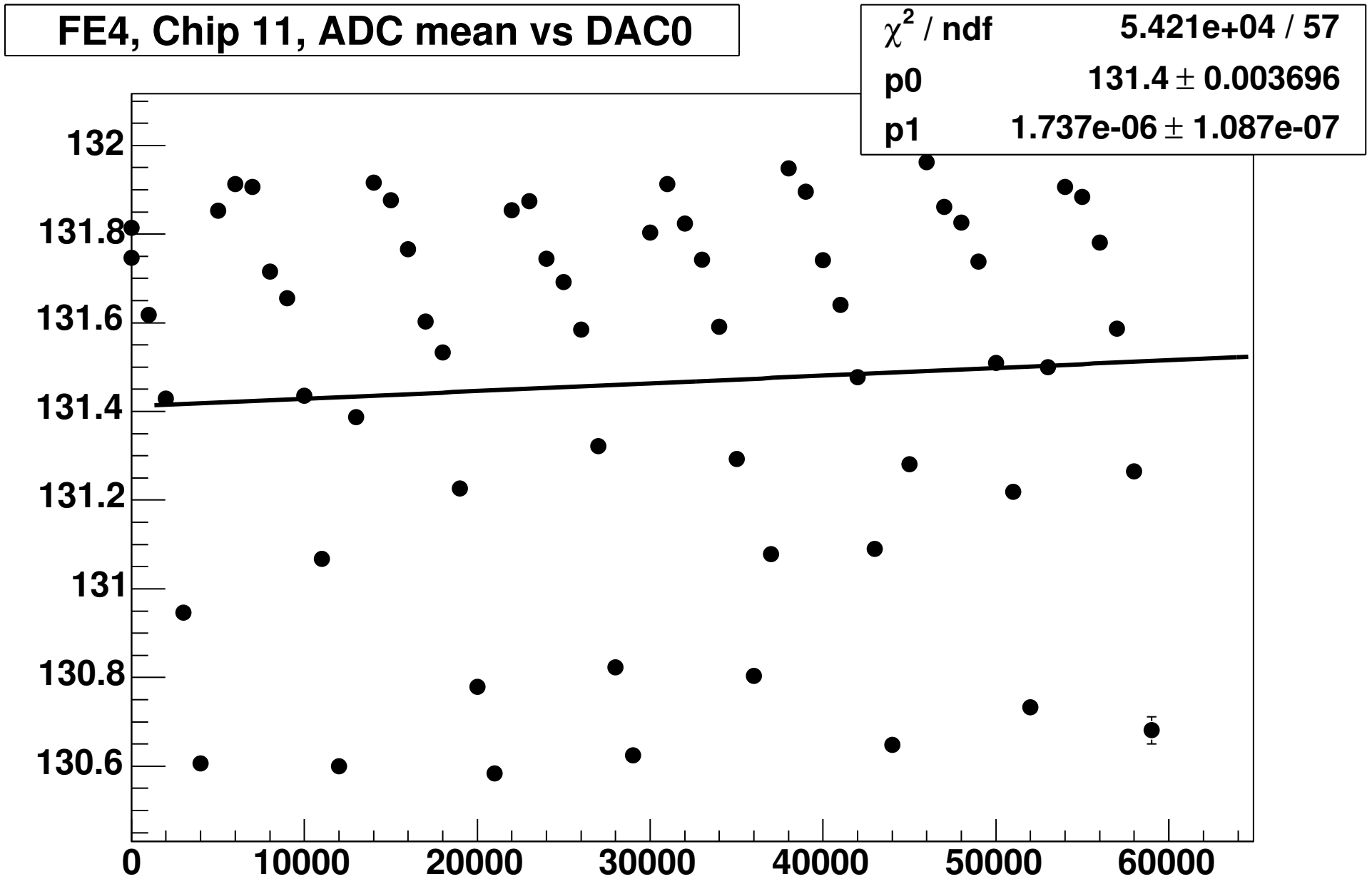

FE4, Chip 10, ADC noise vs DAC0
4.4
4.2
4
3.8
3.6
3.4
3.2
3
2.8
2.6
2.4
2.2
0
10000
20000
30000
40000
50000
60000

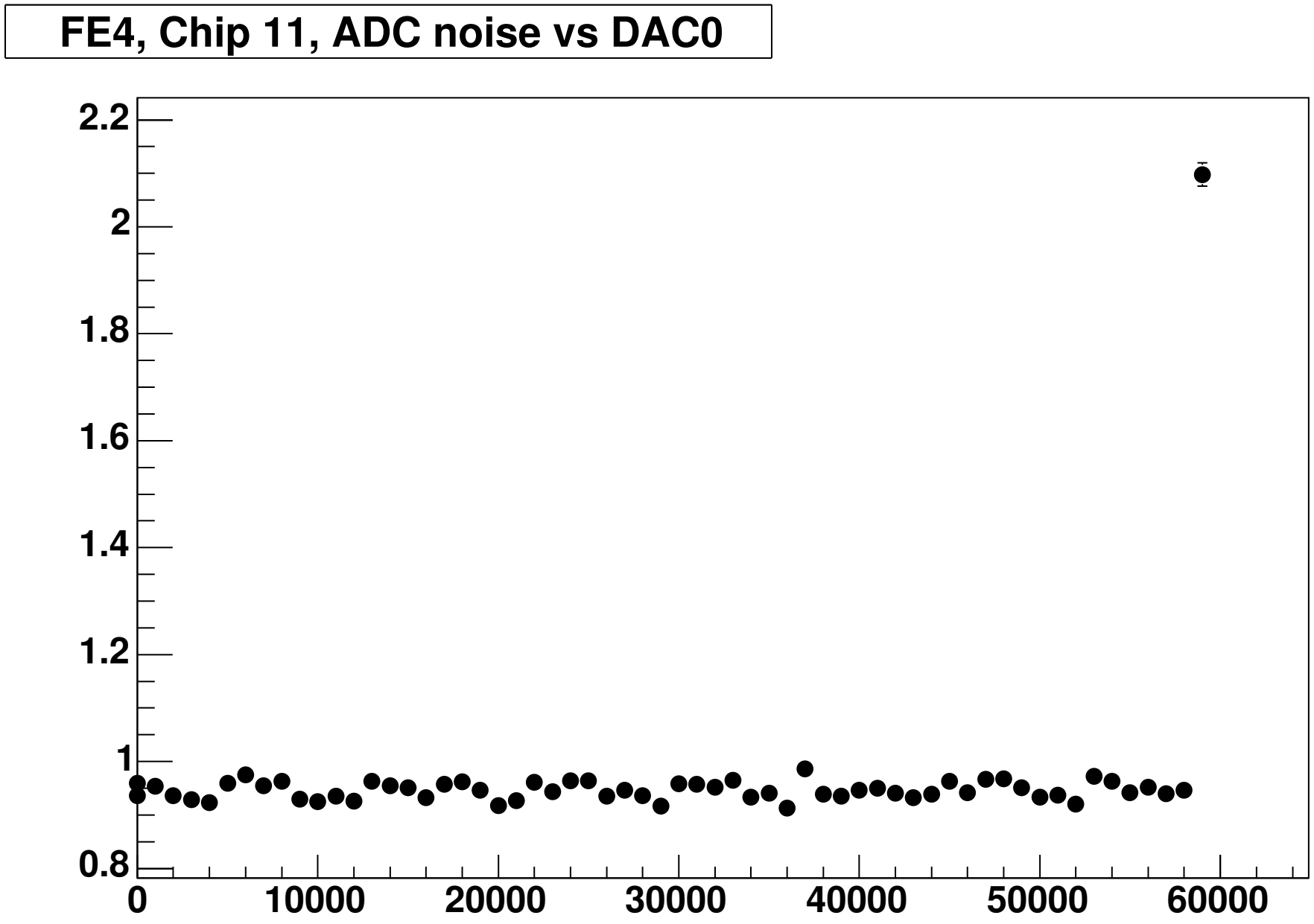

FE4, Chip 10, ADC residuals vs DAC0
0.6
0.4
0.2
0
-0.2
0
10000
20000
30000
40000
50000
60000

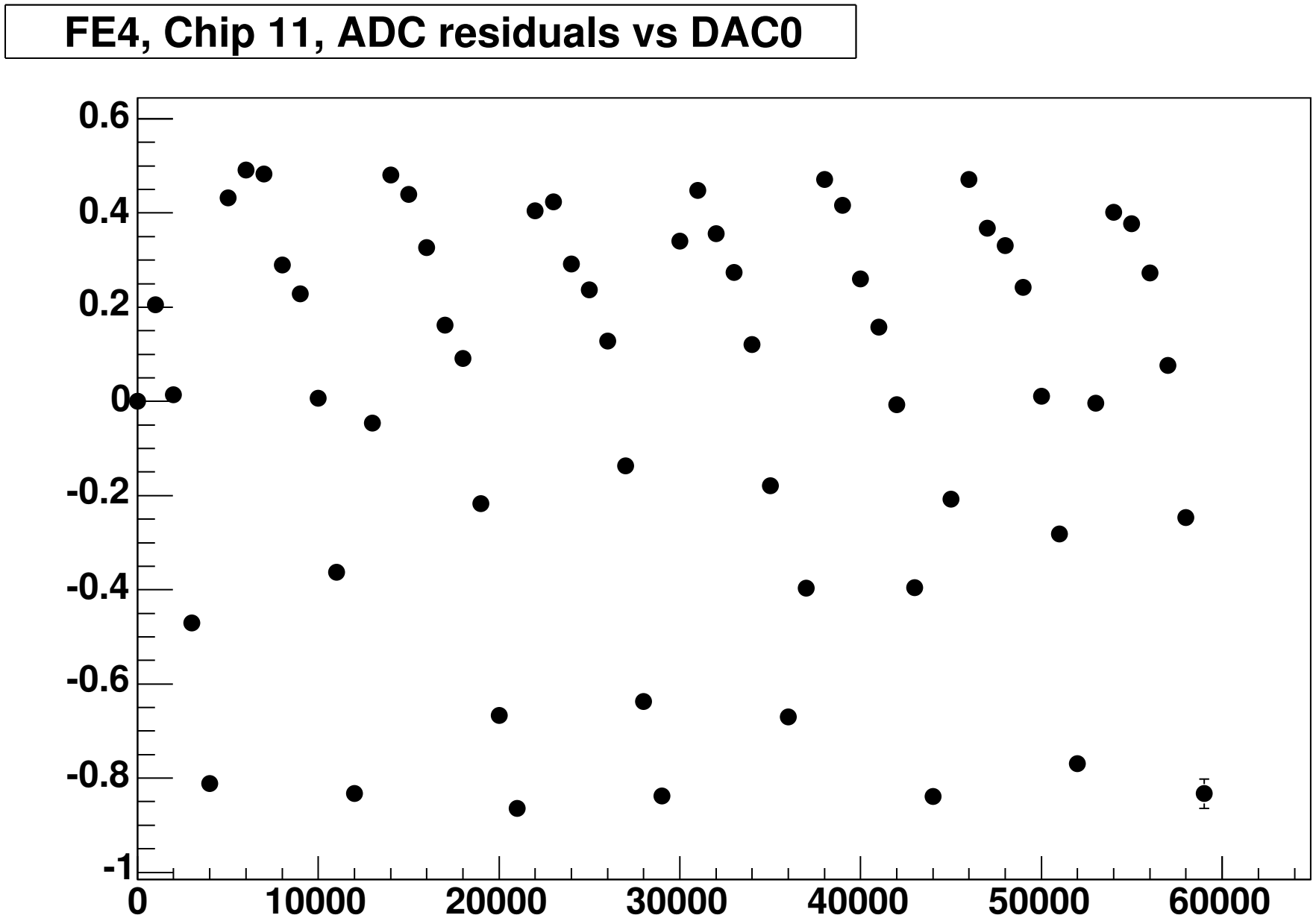

FE4, Chip 10, ADC mean vs DAC1
χ² / ndf 8.651e+04 / 57
p0 -8.432 ± 0.007716
p1 0.2301 ± 2.499e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

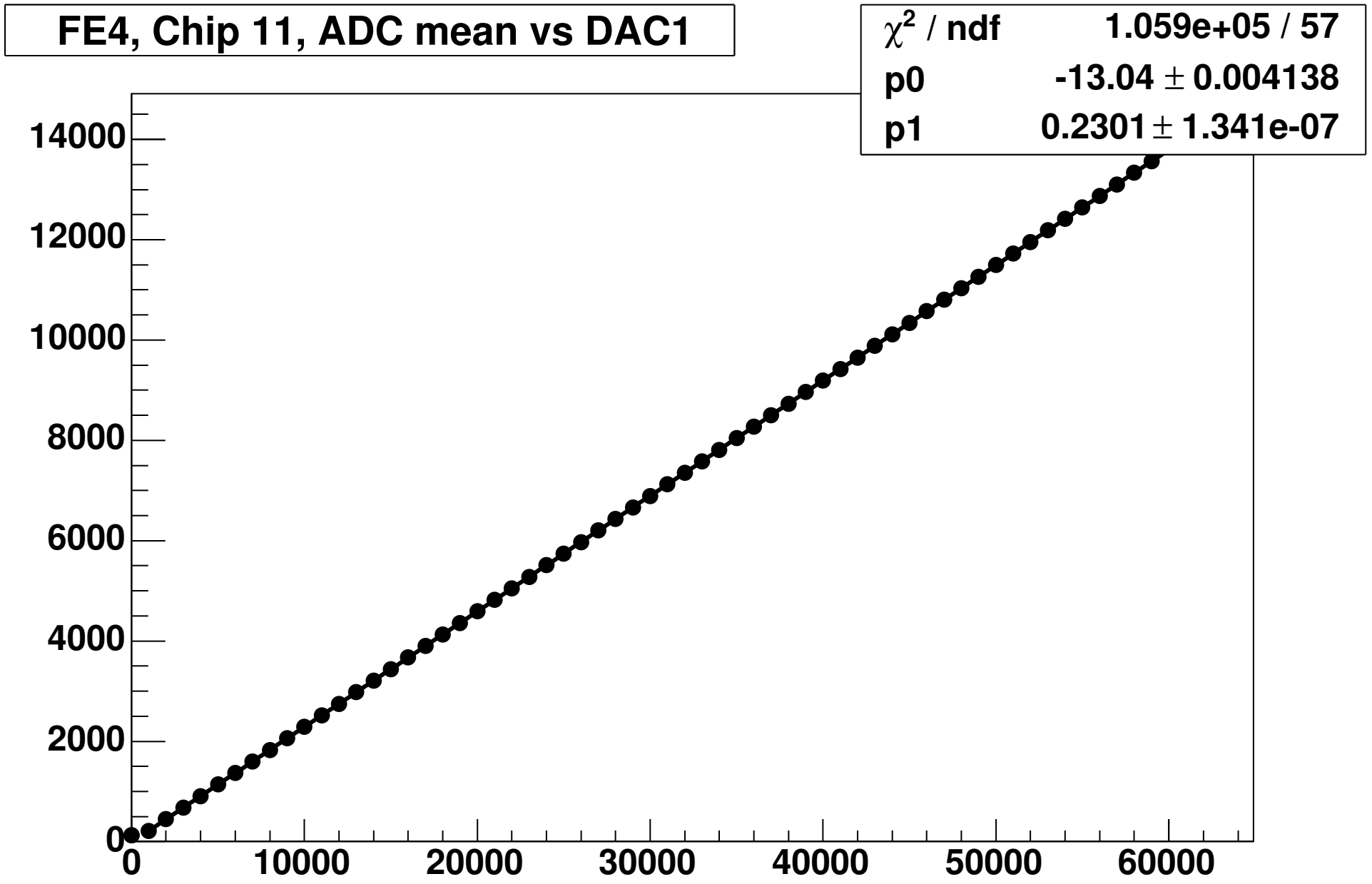

FE4, Chip 10, ADC noise vs DAC1
4.5
4
3.5
3
2.5
2
1.5
1
0
10000
20000
30000
40000
50000
60000

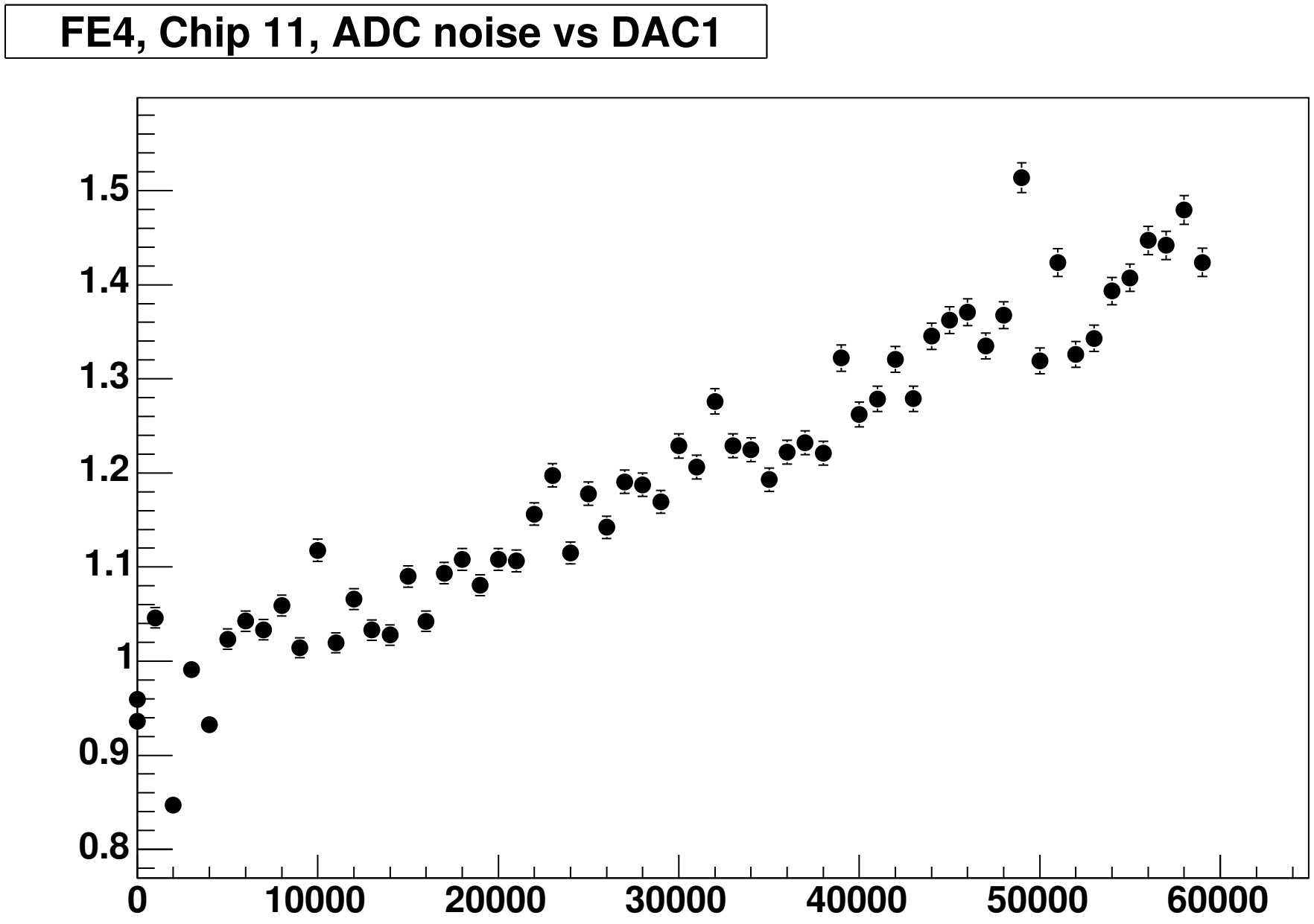

FE4, Chip 10, ADC residuals vs DAC1
4
3
2
1
0
-1
-2
0
10000
20000
30000
40000
50000
60000

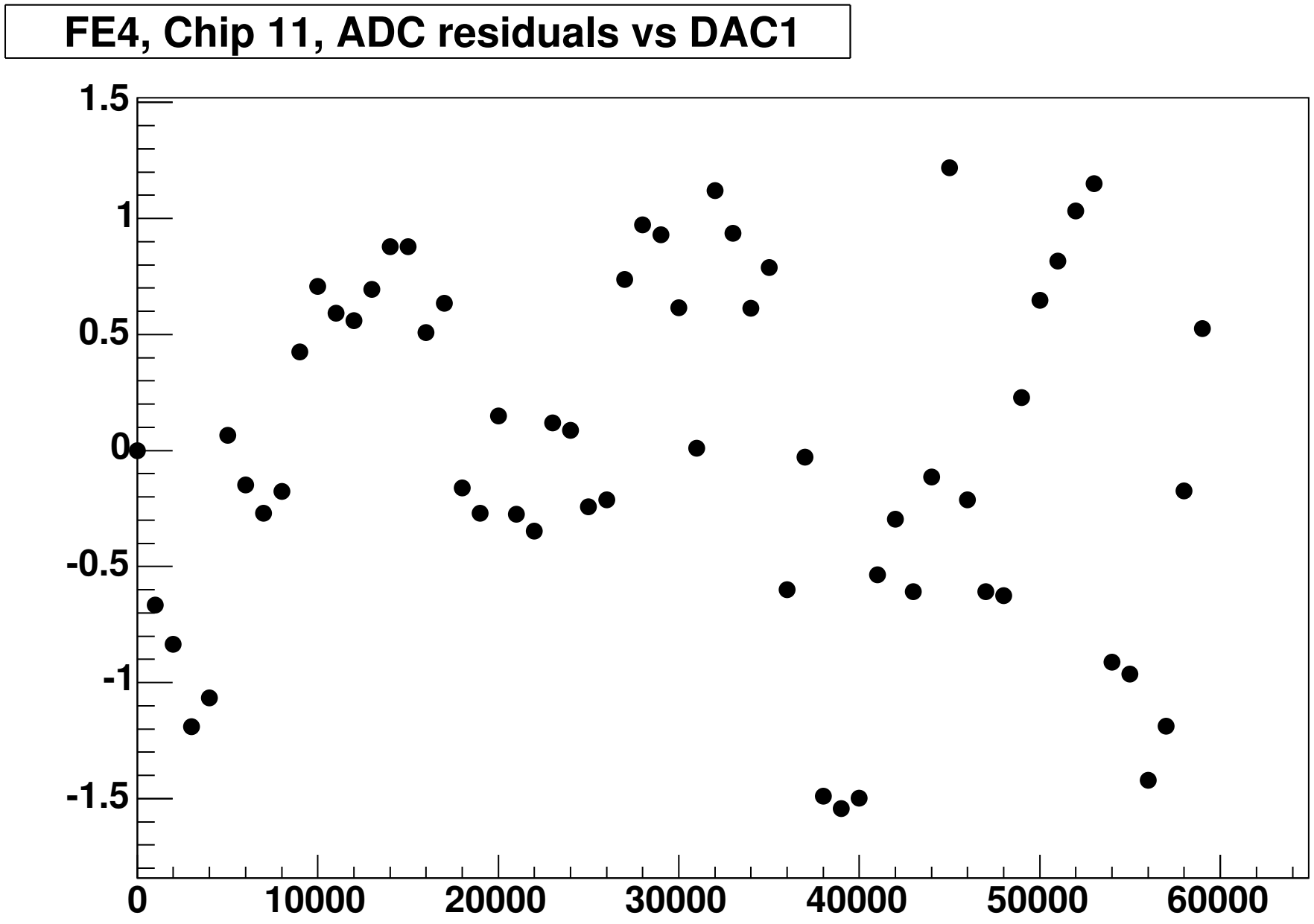

FE4, Chip 11, ADC mean vs DAC0
χ² / ndf 5.421e+04 / 57
p0 131.4 ± 0.003696
p1 1.737e-06 ± 1.087e-07
132
131.8
131.6
131.4
131.2
131
130.8
130.6
0
10000
20000
30000
40000
50000
60000

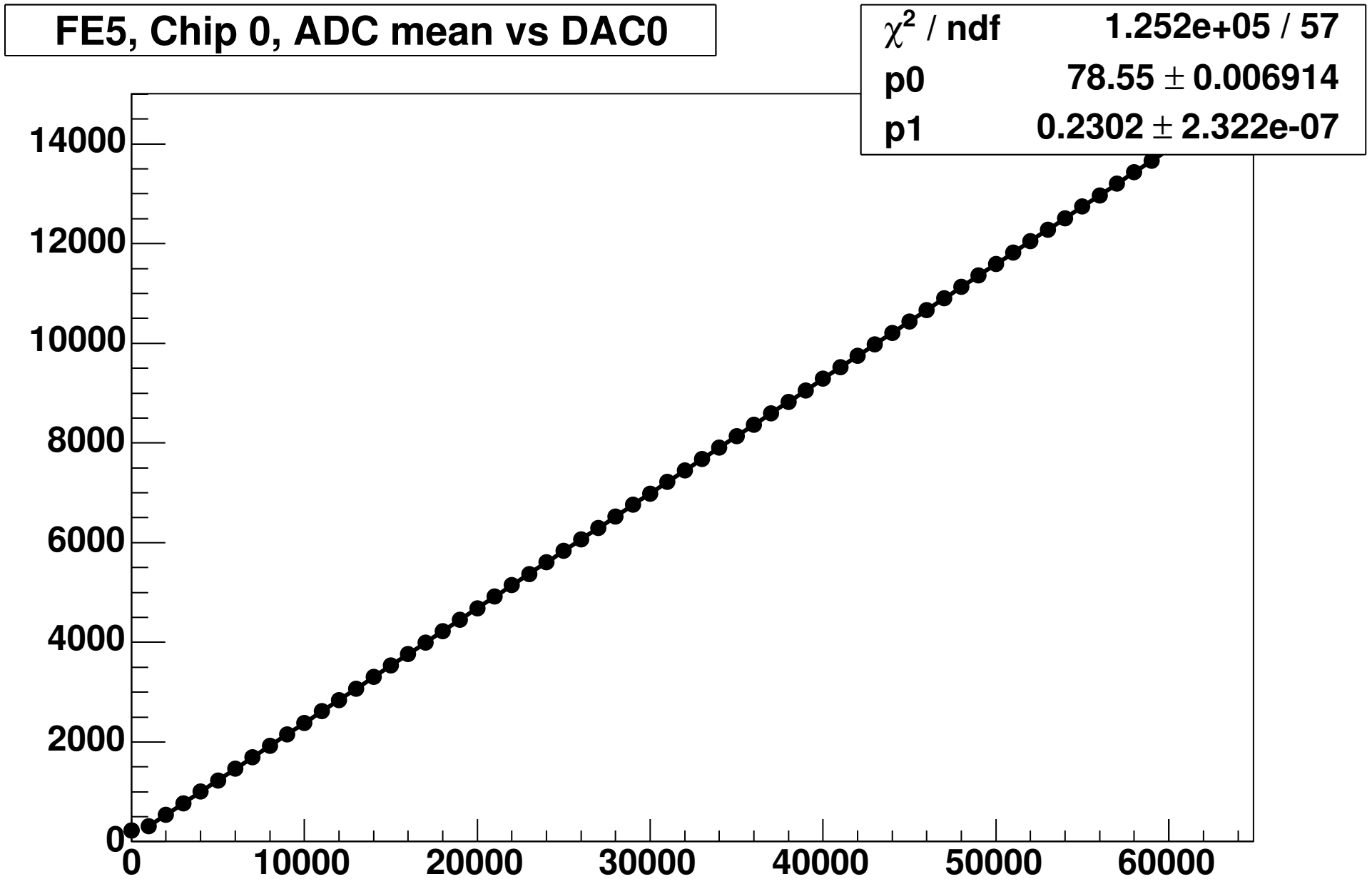

FE4, Chip 11, ADC noise vs DAC0
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0
10000
20000
30000
40000
50000
60000

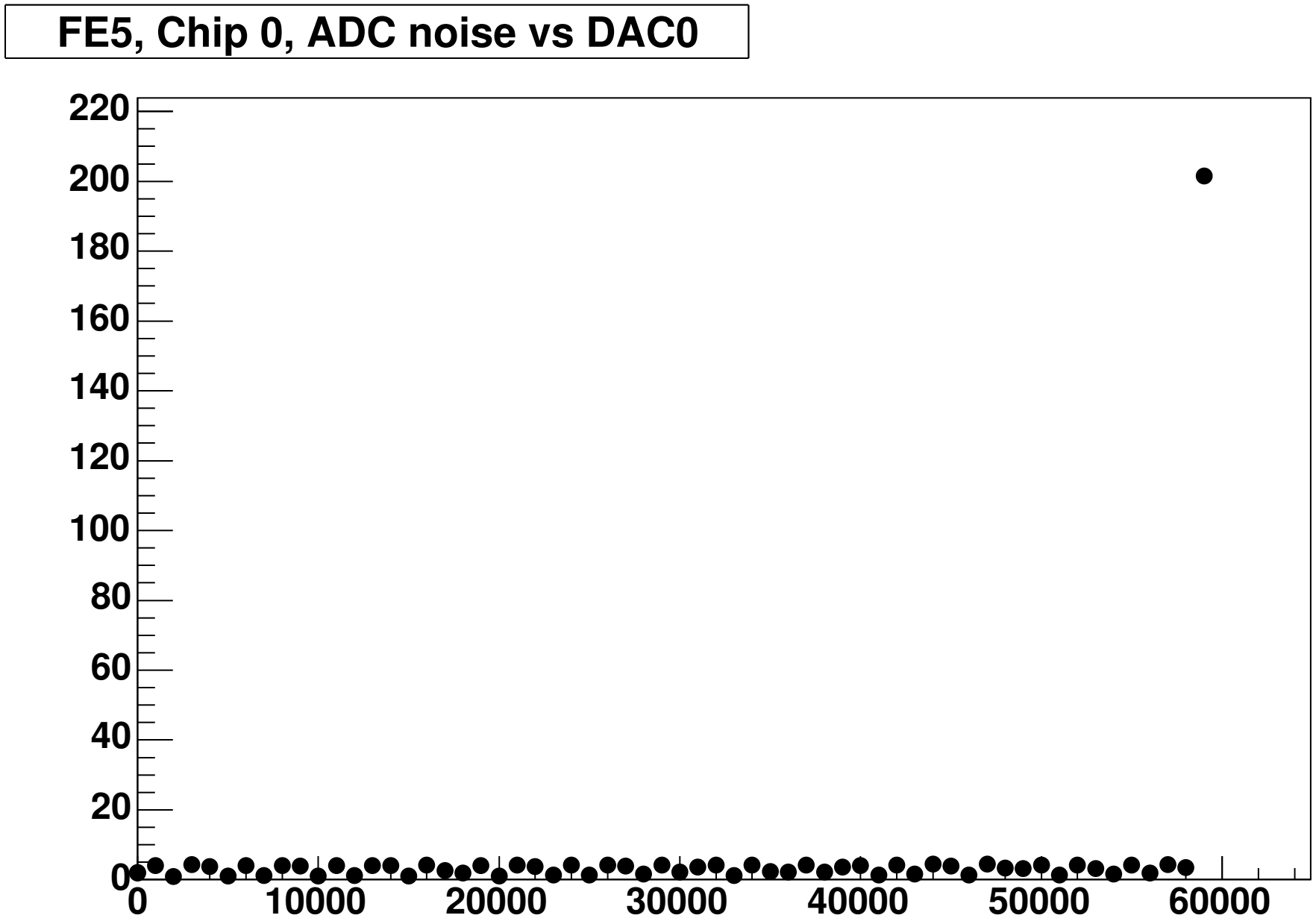

FE4, Chip 11, ADC residuals vs DAC0
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
0
10000
20000
30000
40000
50000
60000

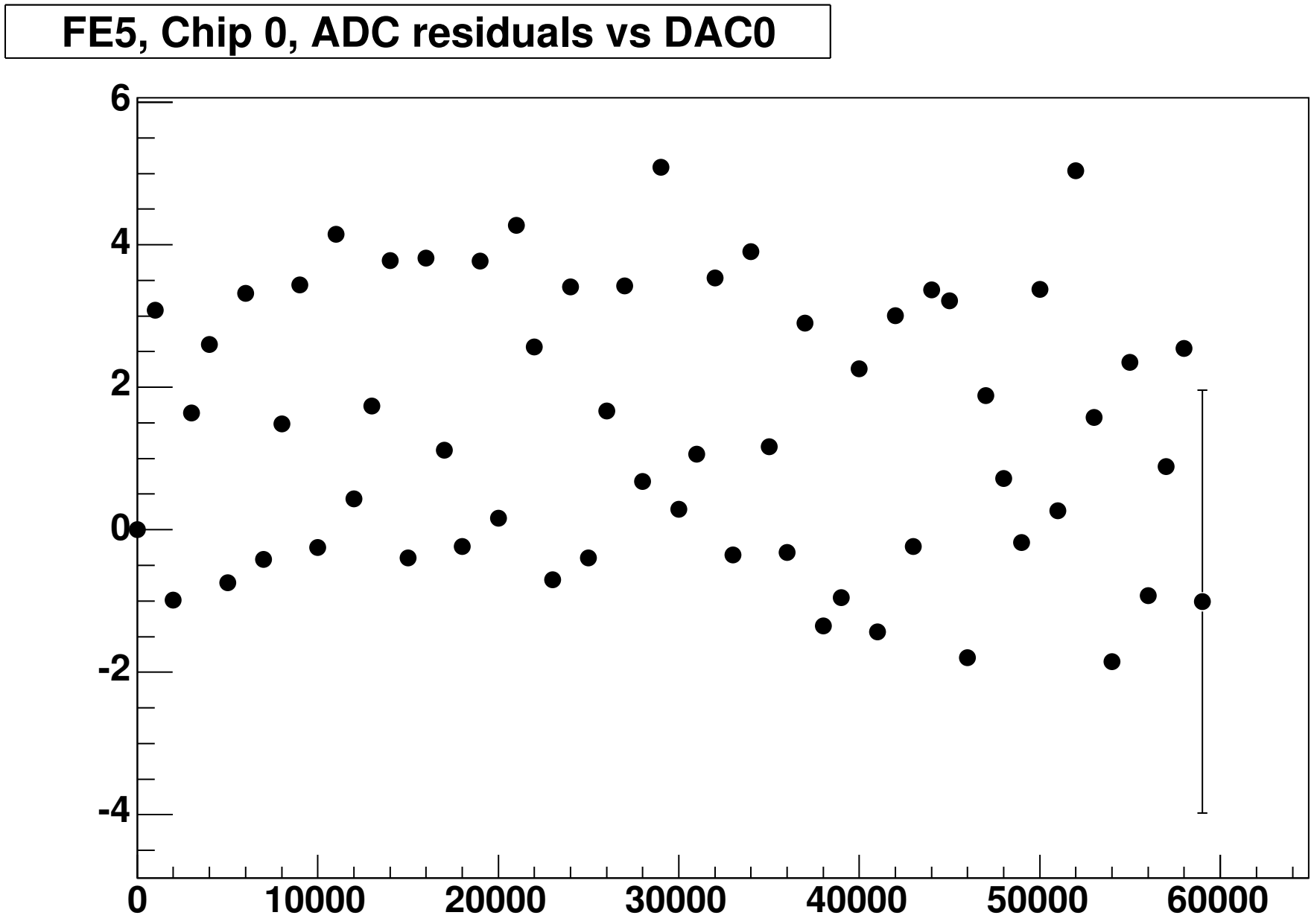

FE4, Chip 11, ADC mean vs DAC1
χ² / ndf 1.059e+05 / 57
p0 -13.04 ± 0.004138
p1 0.2301 ± 1.341e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

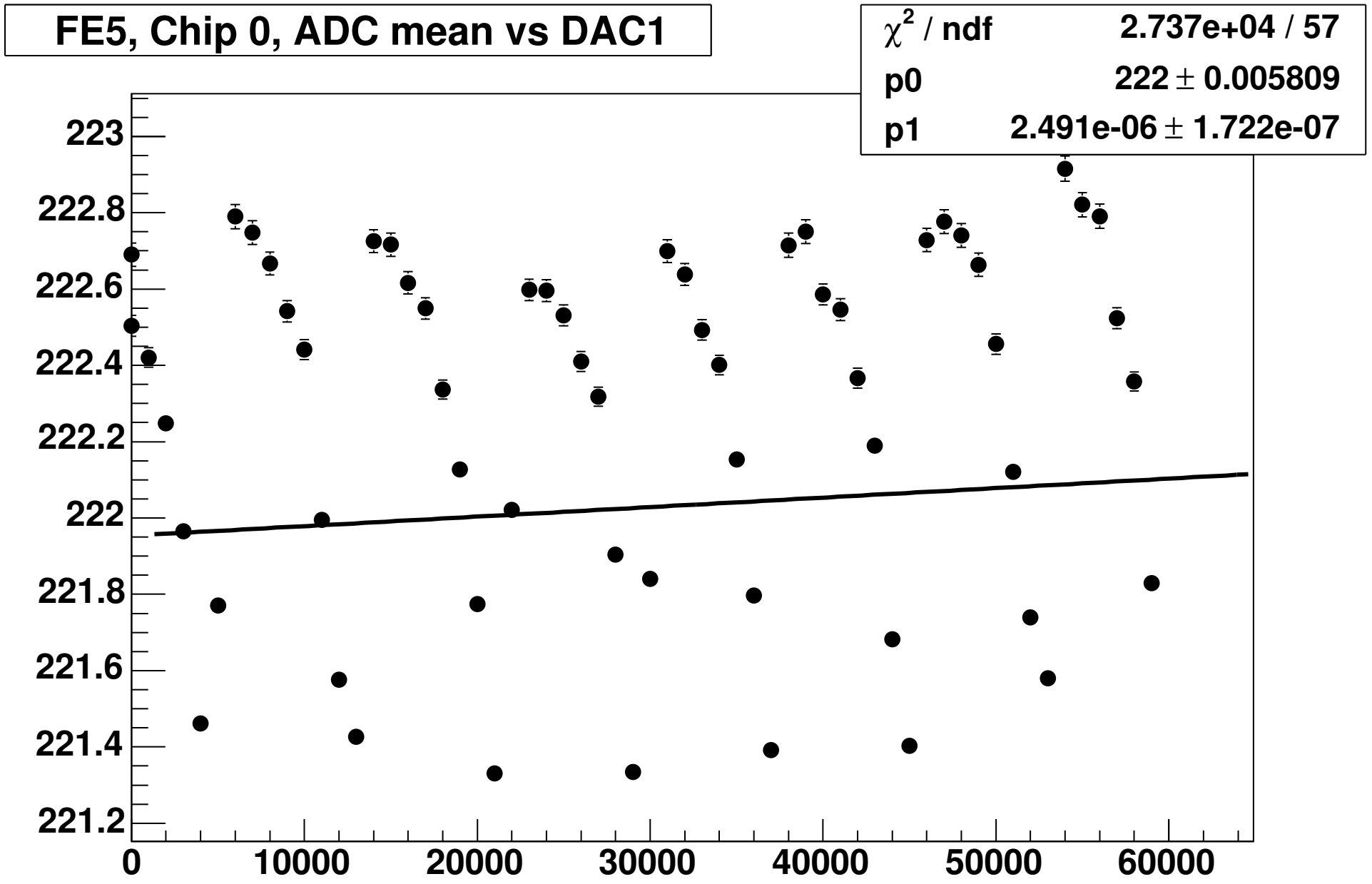

FE4, Chip 11, ADC noise vs DAC1
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0
10000
20000
30000
40000
50000
60000

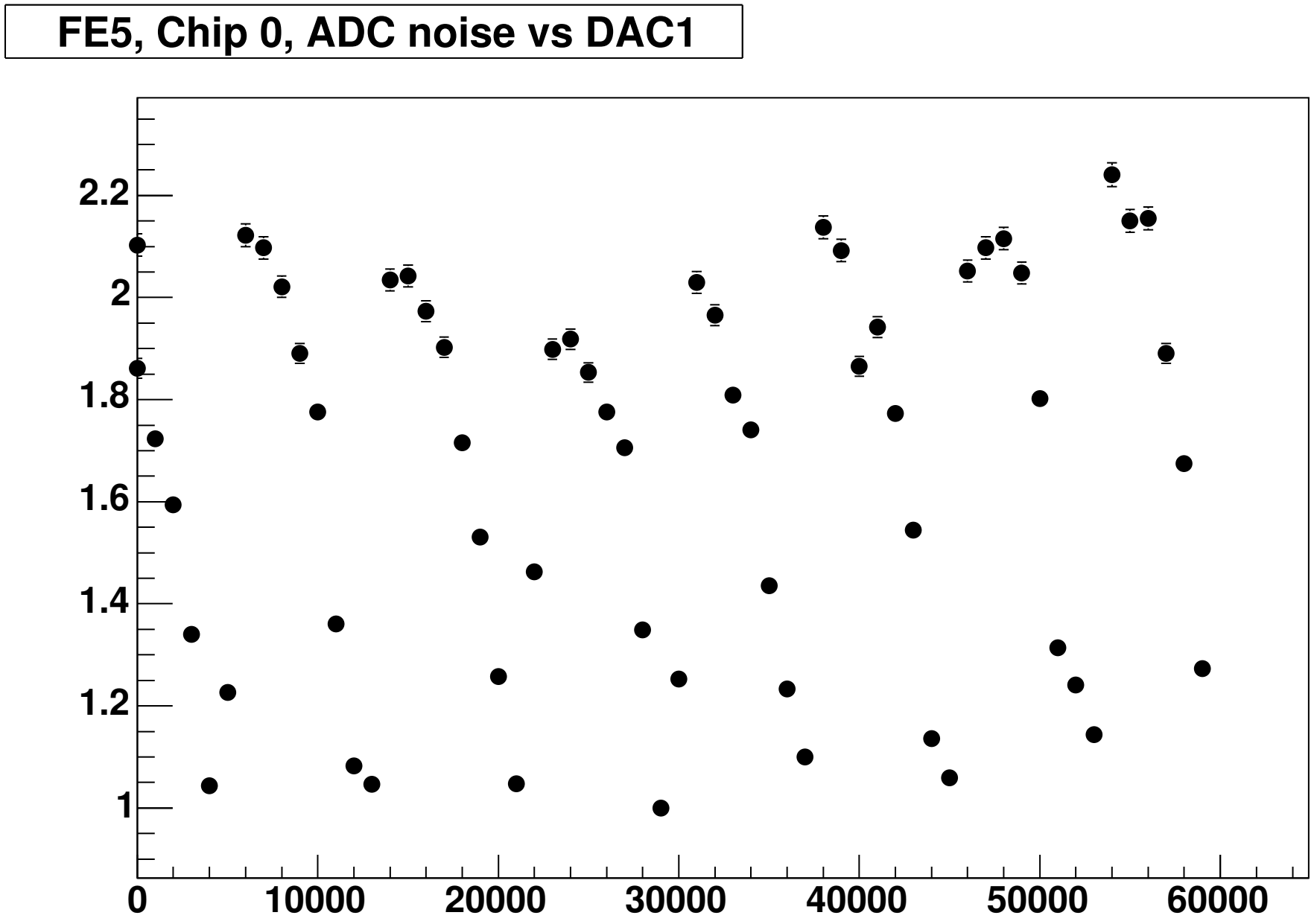

FE4, Chip 11, ADC residuals vs DAC1
1.5
1
0.5
0
-0.5
-1
-1.5
0
10000
20000
30000
40000
50000
60000

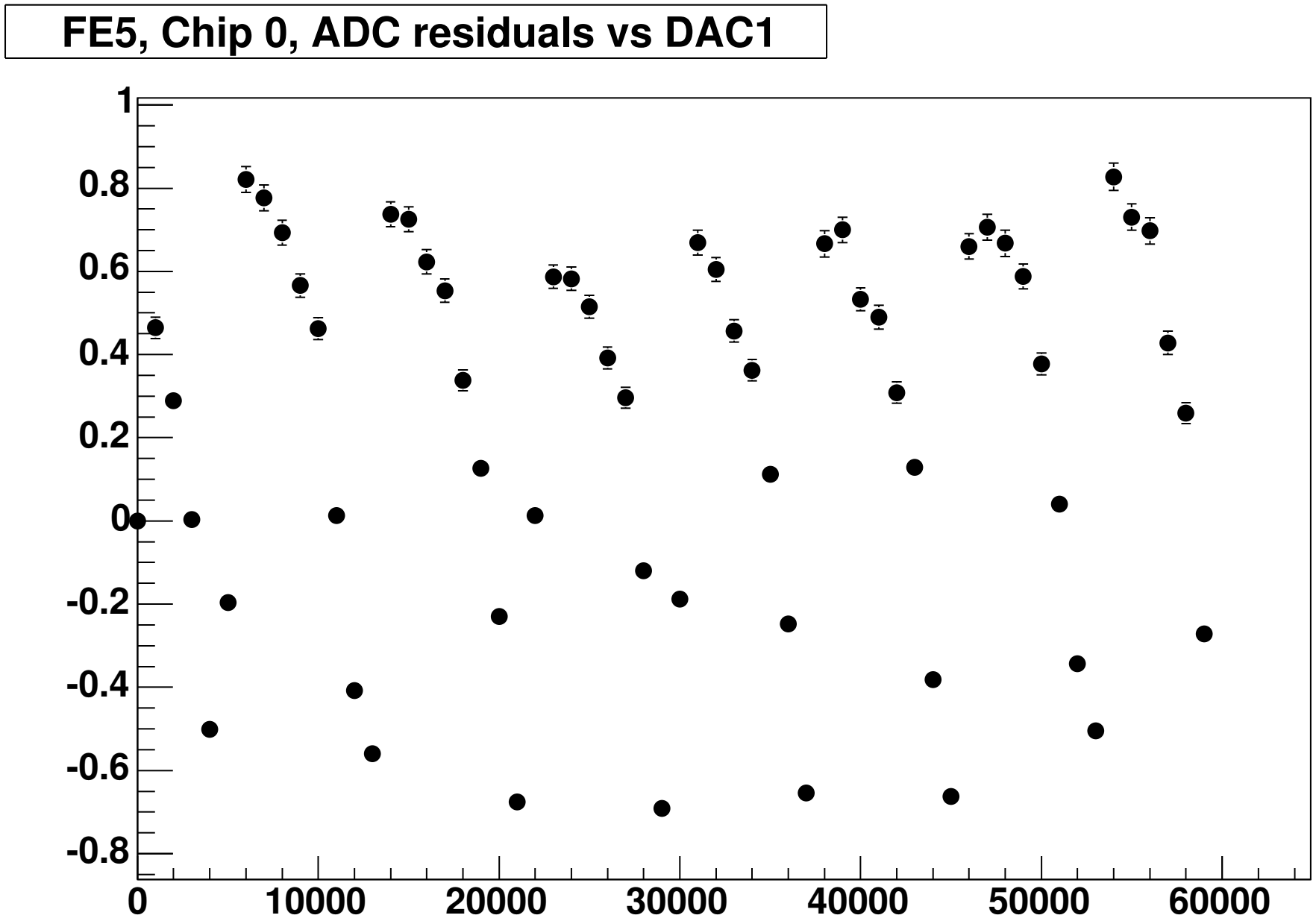

FE5, Chip 0, ADC mean vs DAC0
χ² / ndf 1.252e+05 / 57
p0 78.55 ± 0.006914
p1 0.2302 ± 2.322e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

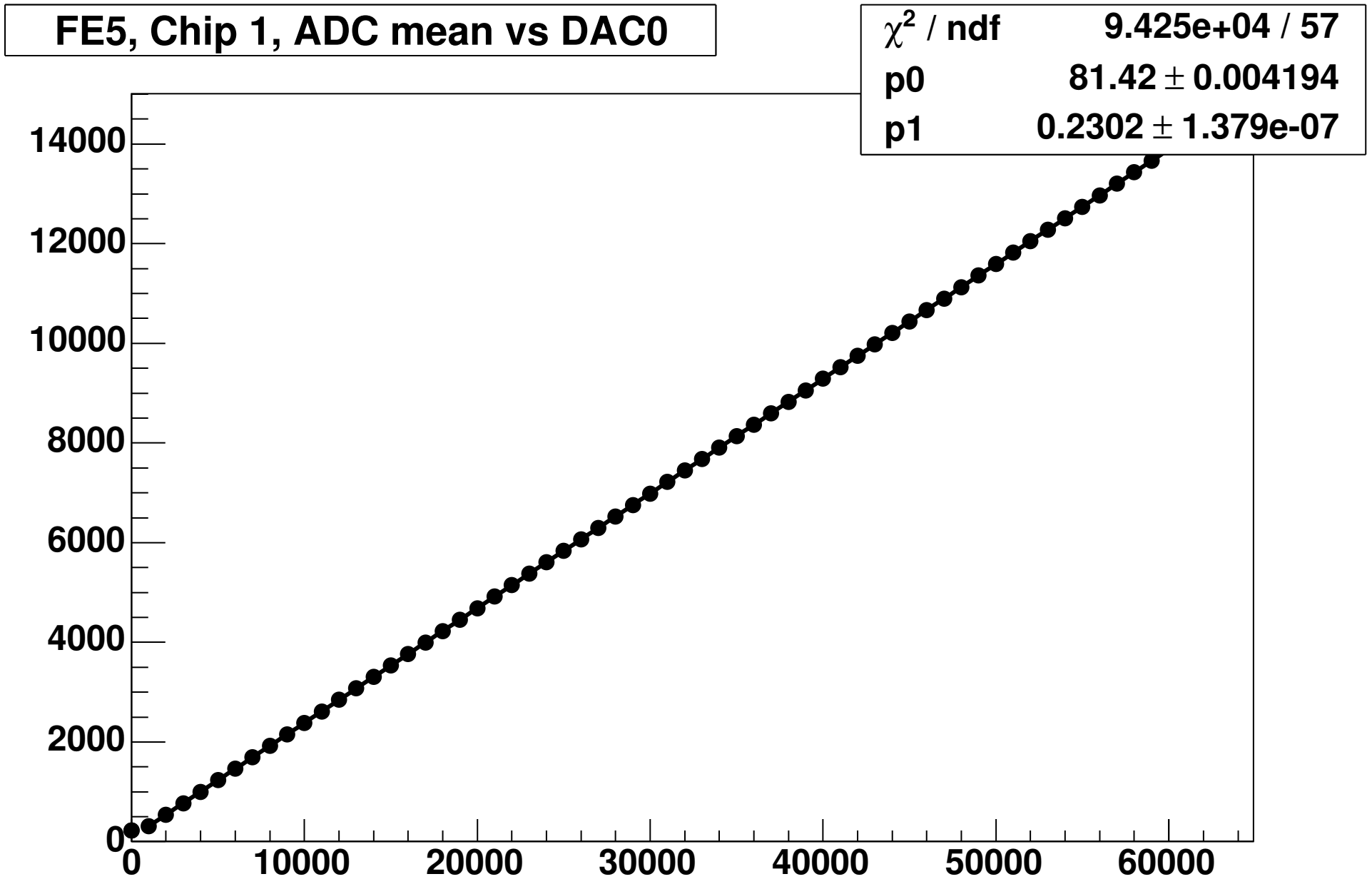

FE5, Chip 0, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

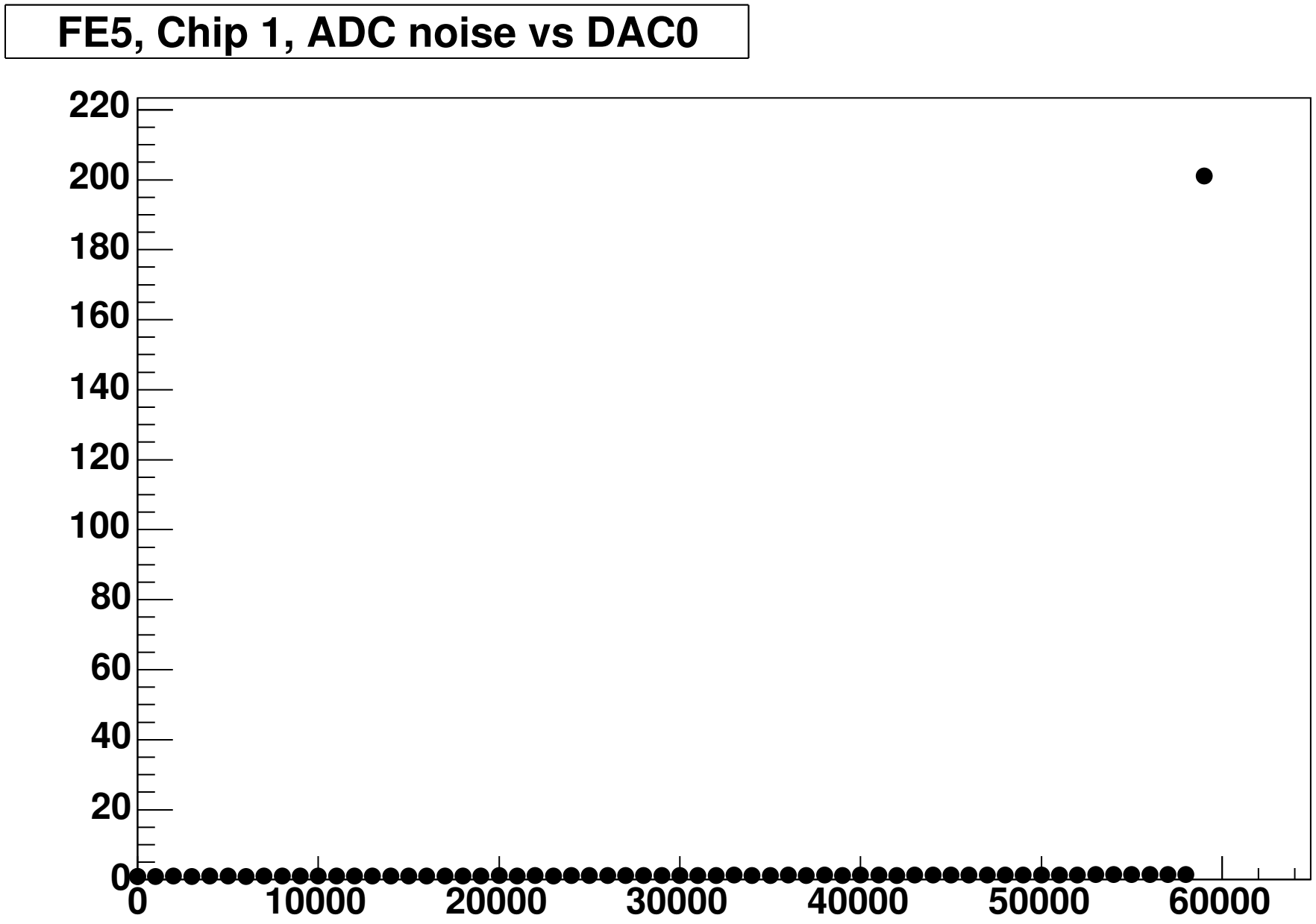

FE5, Chip 0, ADC residuals vs DAC0
6
4
2
0
-2
-4
0
10000
20000
30000
40000
50000
60000

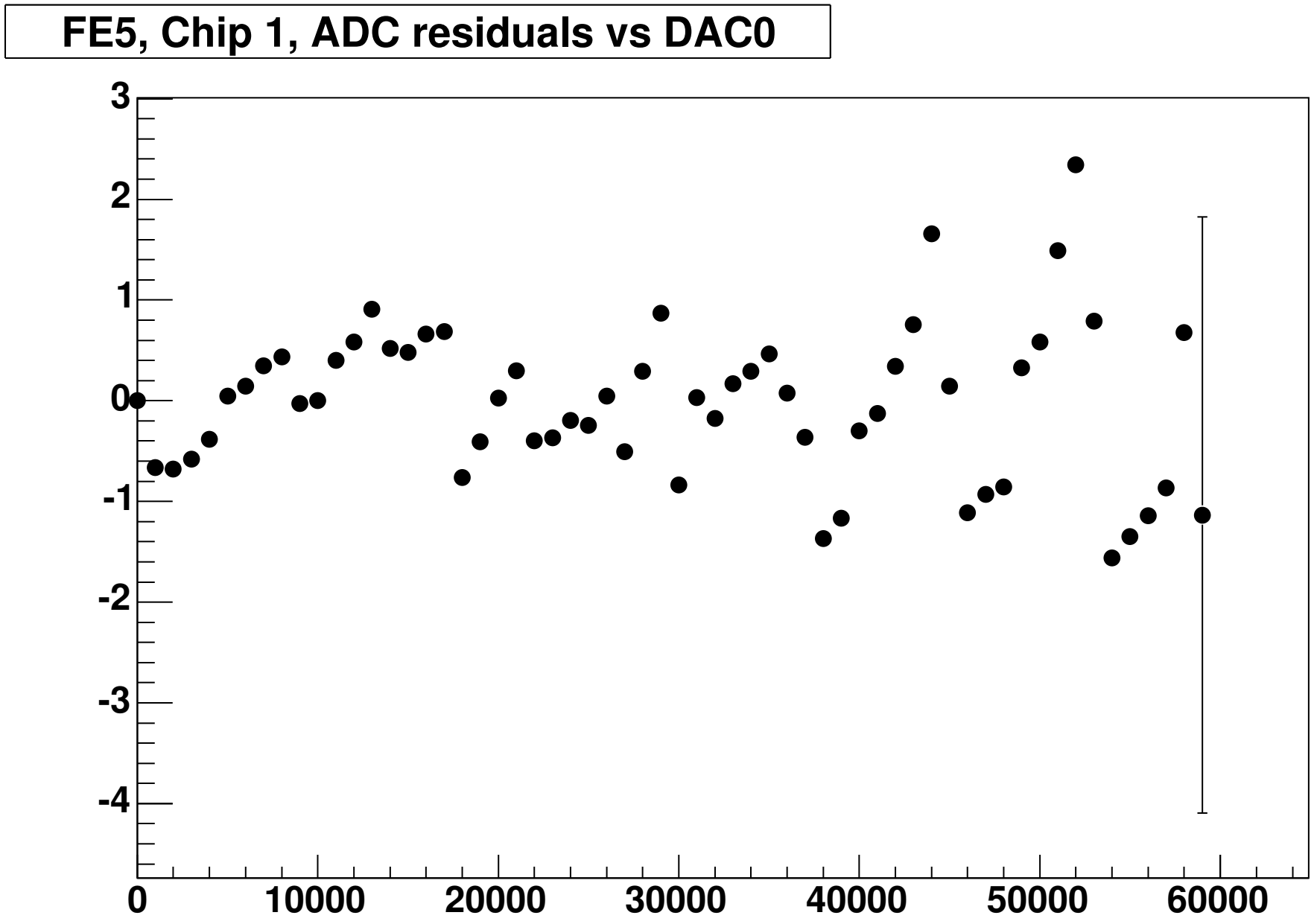

FE5, Chip 0, ADC mean vs DAC1
χ² / ndf 2.737e+04 / 57
p0 222 ± 0.005809
p1 2.491e-06 ± 1.722e-07
223
222.8
222.6
222.4
222.2
222
221.8
221.6
221.4
221.2
0
10000
20000
30000
40000
50000
60000

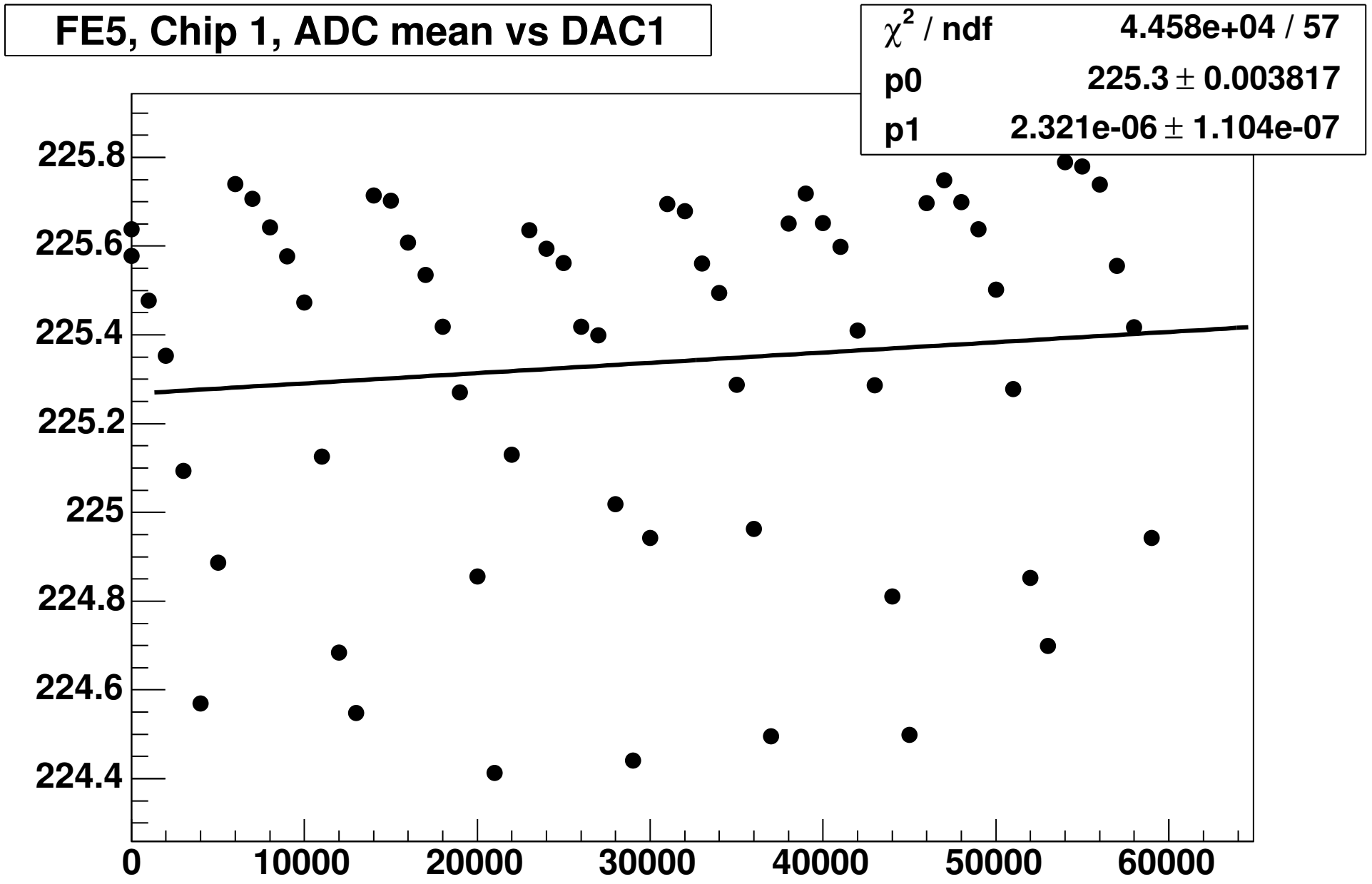

FE5, Chip 0, ADC noise vs DAC1
2.2
2
1.8
1.6
1.4
1.2
1
0
10000
20000
30000
40000
50000
60000

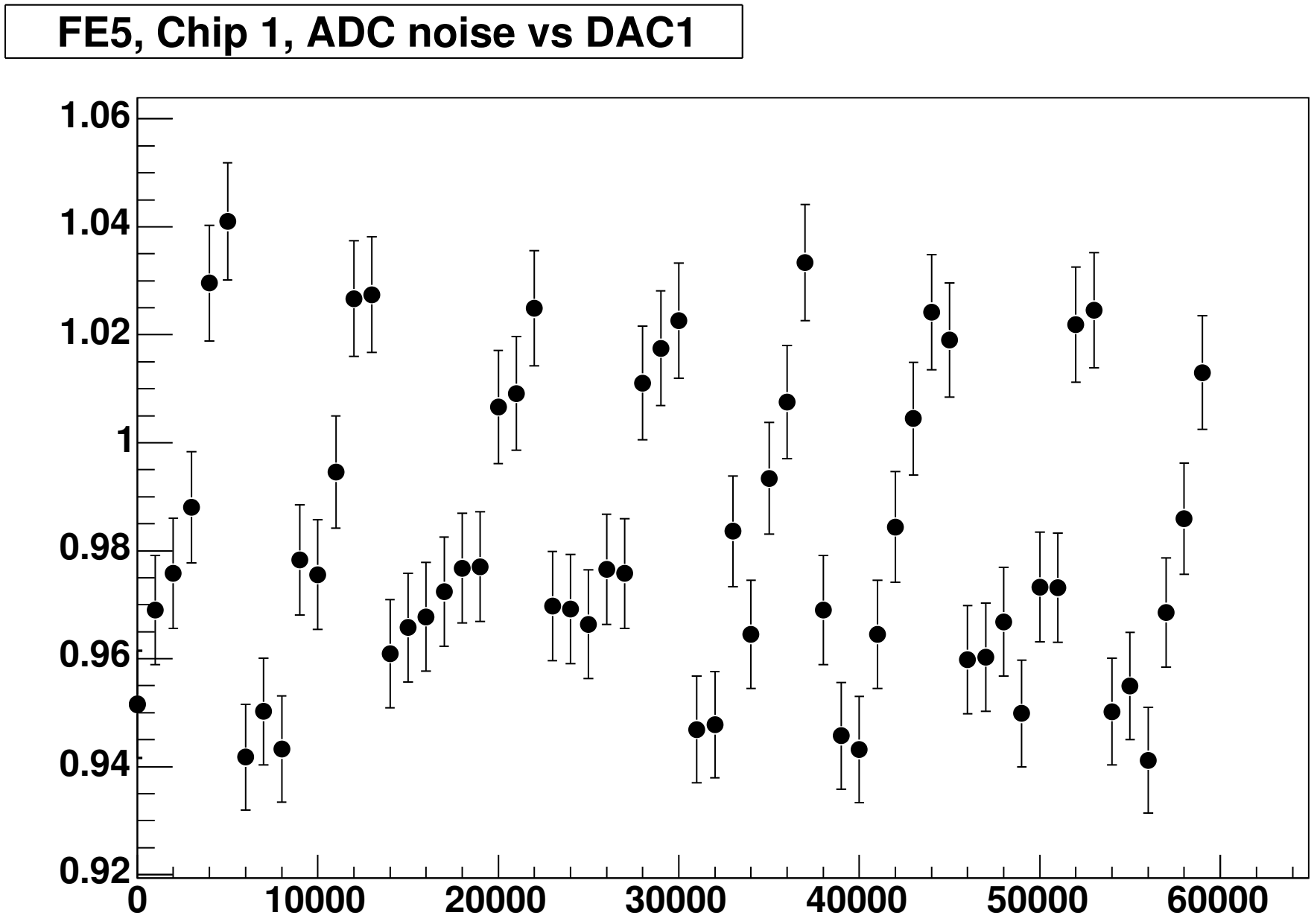

FE5, Chip 0, ADC residuals vs DAC1
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
0
10000
20000
30000
40000
50000
60000

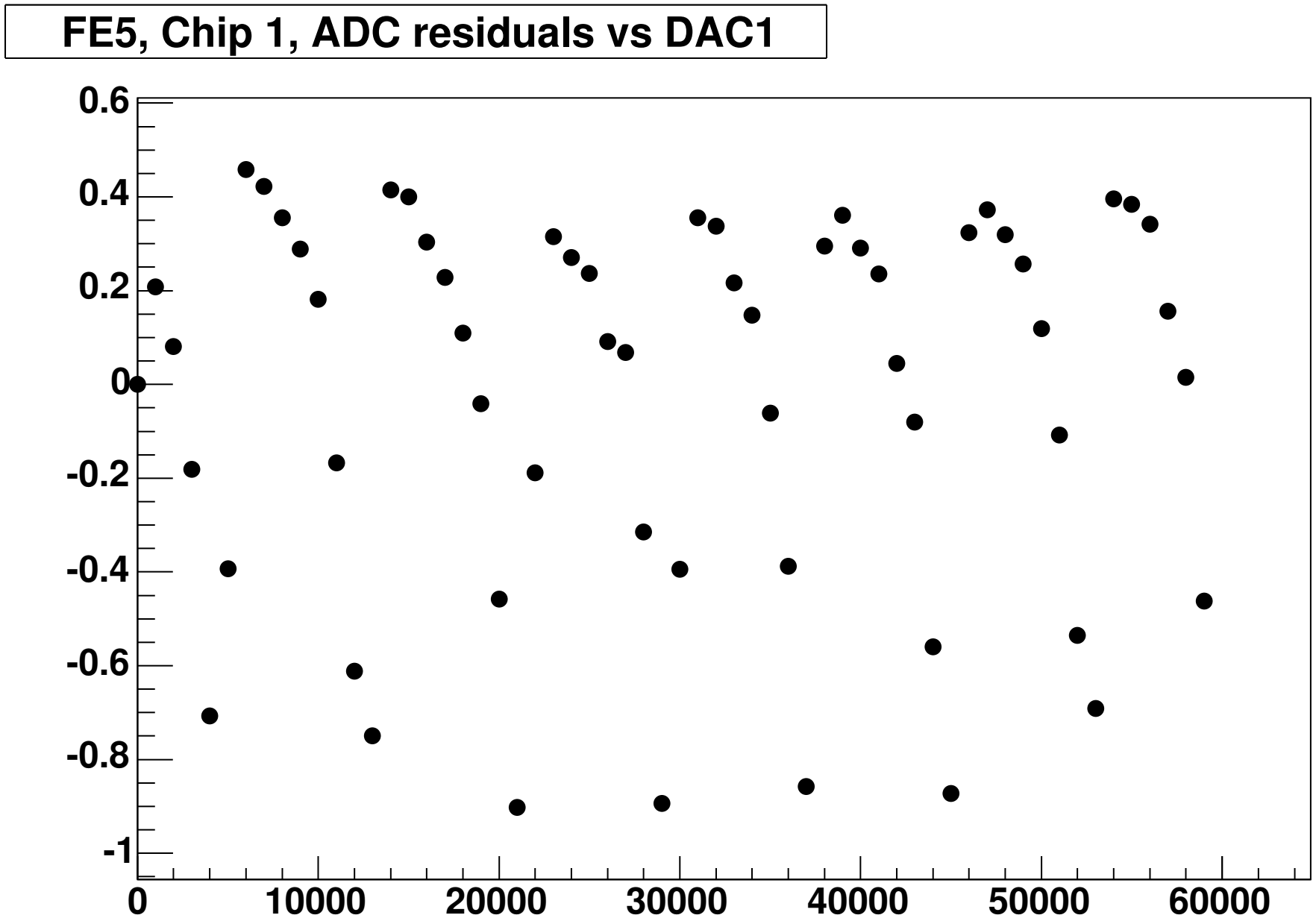

FE5, Chip 1, ADC mean vs DAC0
χ² / ndf 9.425e+04 / 57
p0 81.42 ± 0.004194
p1 0.2302 ± 1.379e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

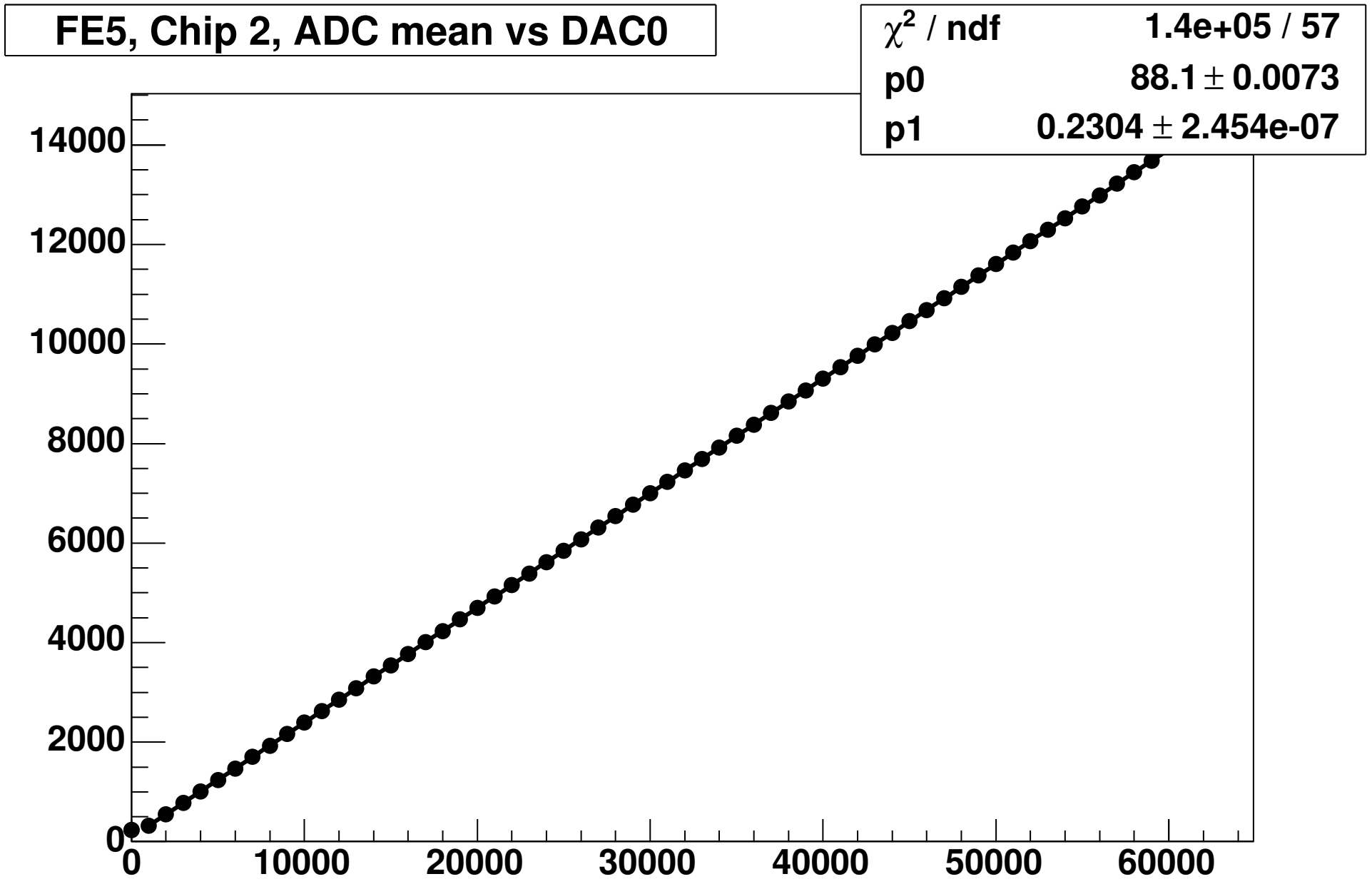

FE5, Chip 1, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

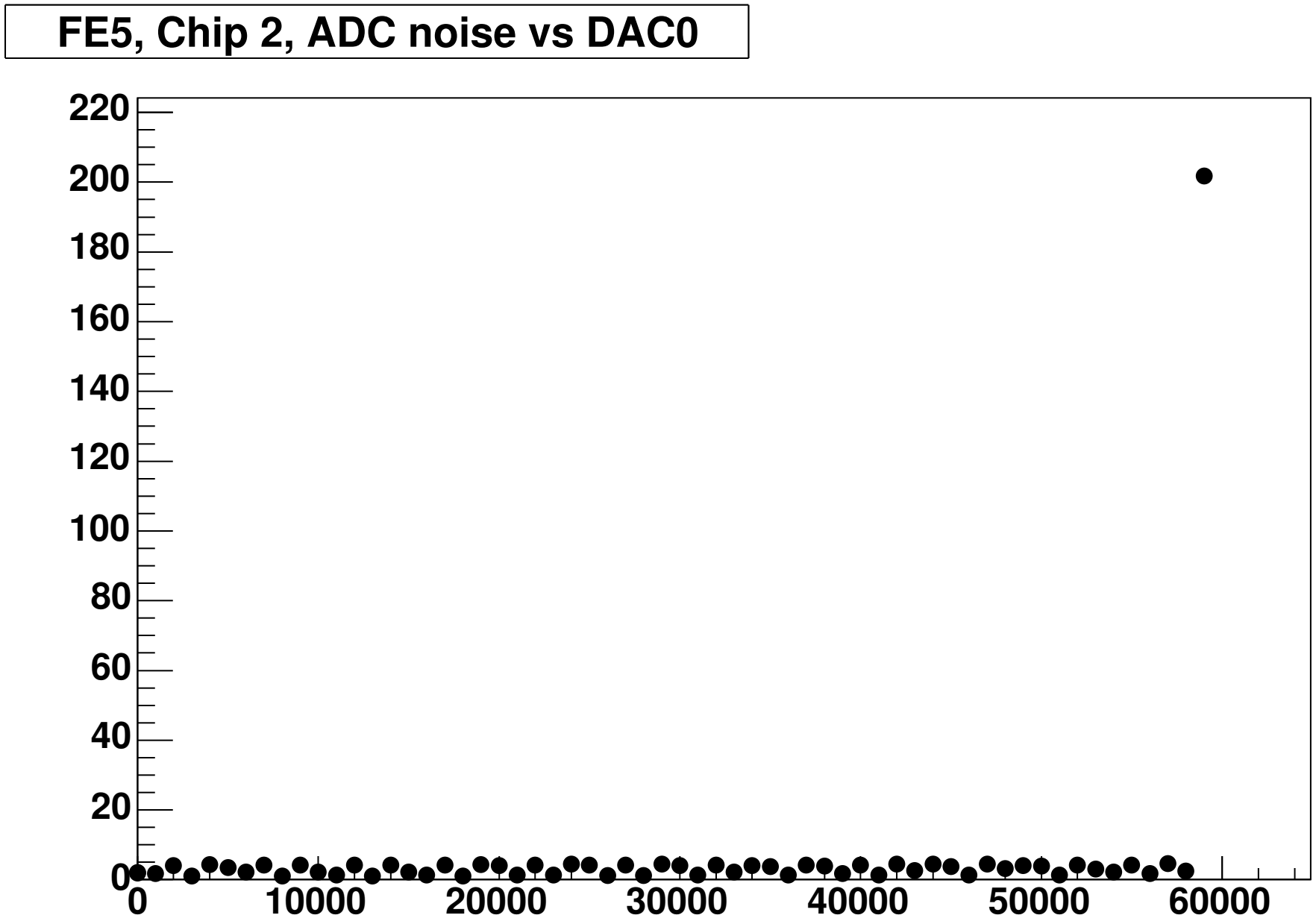

FE5, Chip 1, ADC residuals vs DAC0
3
2
1
0
-1
-2
-3
-4
0
10000
20000
30000
40000
50000
60000

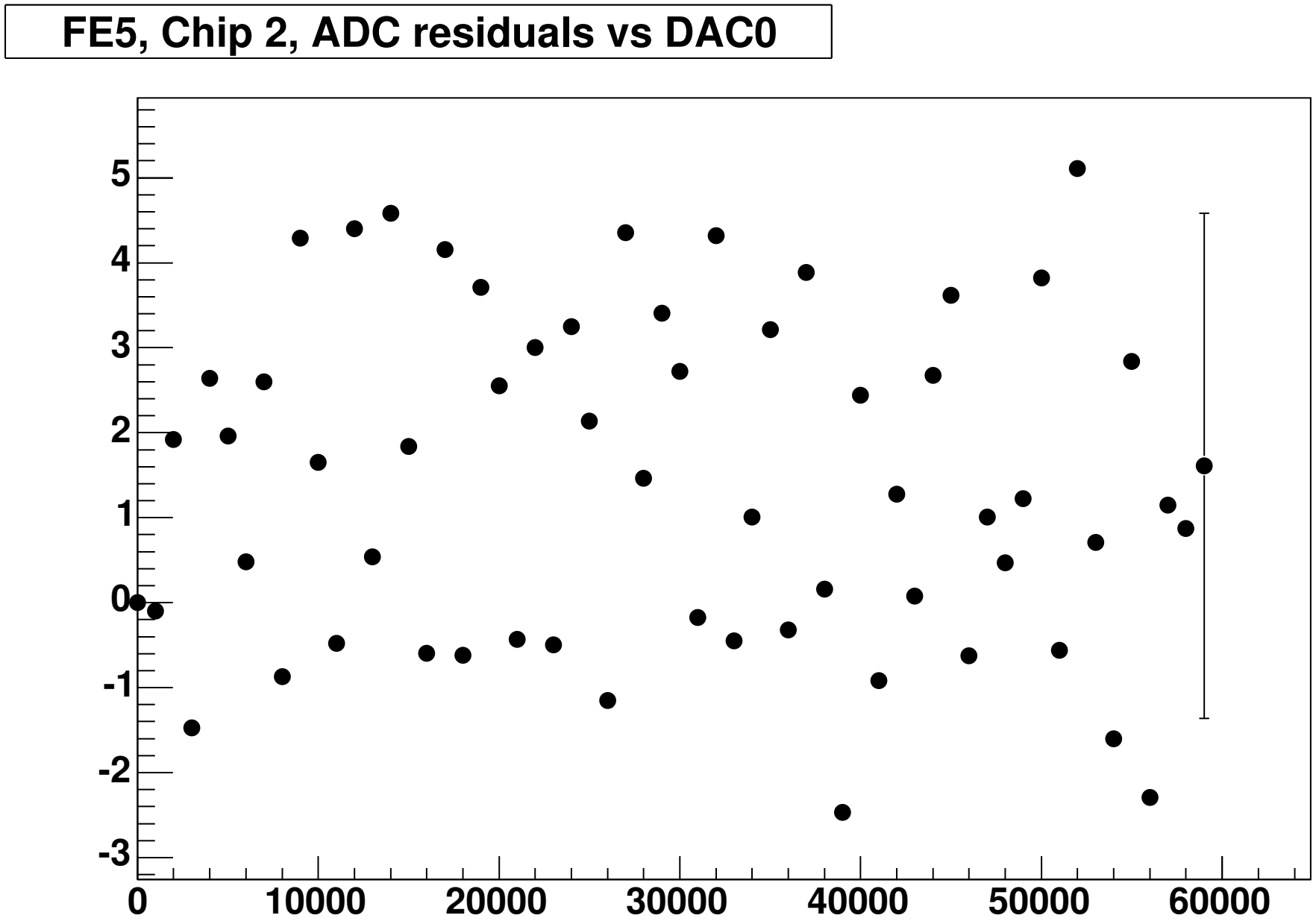

FE5, Chip 1, ADC mean vs DAC1
χ² / ndf 4.458e+04 / 57
p0 225.3 ± 0.003817
p1 2.321e-06 ± 1.104e-07
225.8
225.6
225.4
225.2
225
224.8
224.6
224.4
0
10000
20000
30000
40000
50000
60000

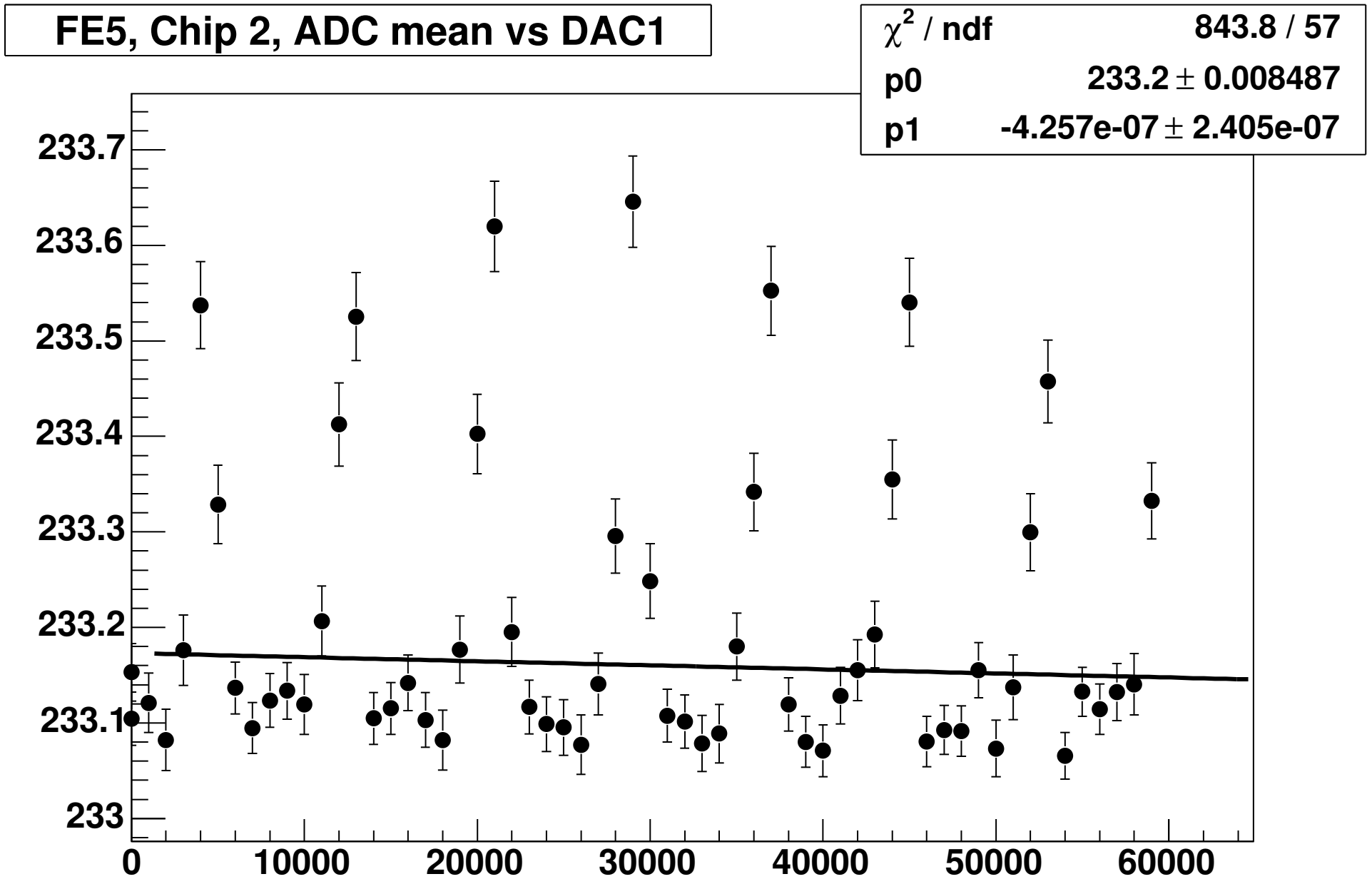

FE5, Chip 1, ADC noise vs DAC1
1.06
1.04
1.02
1
0.98
0.96
0.94
0.92
0
10000
20000
30000
40000
50000
60000

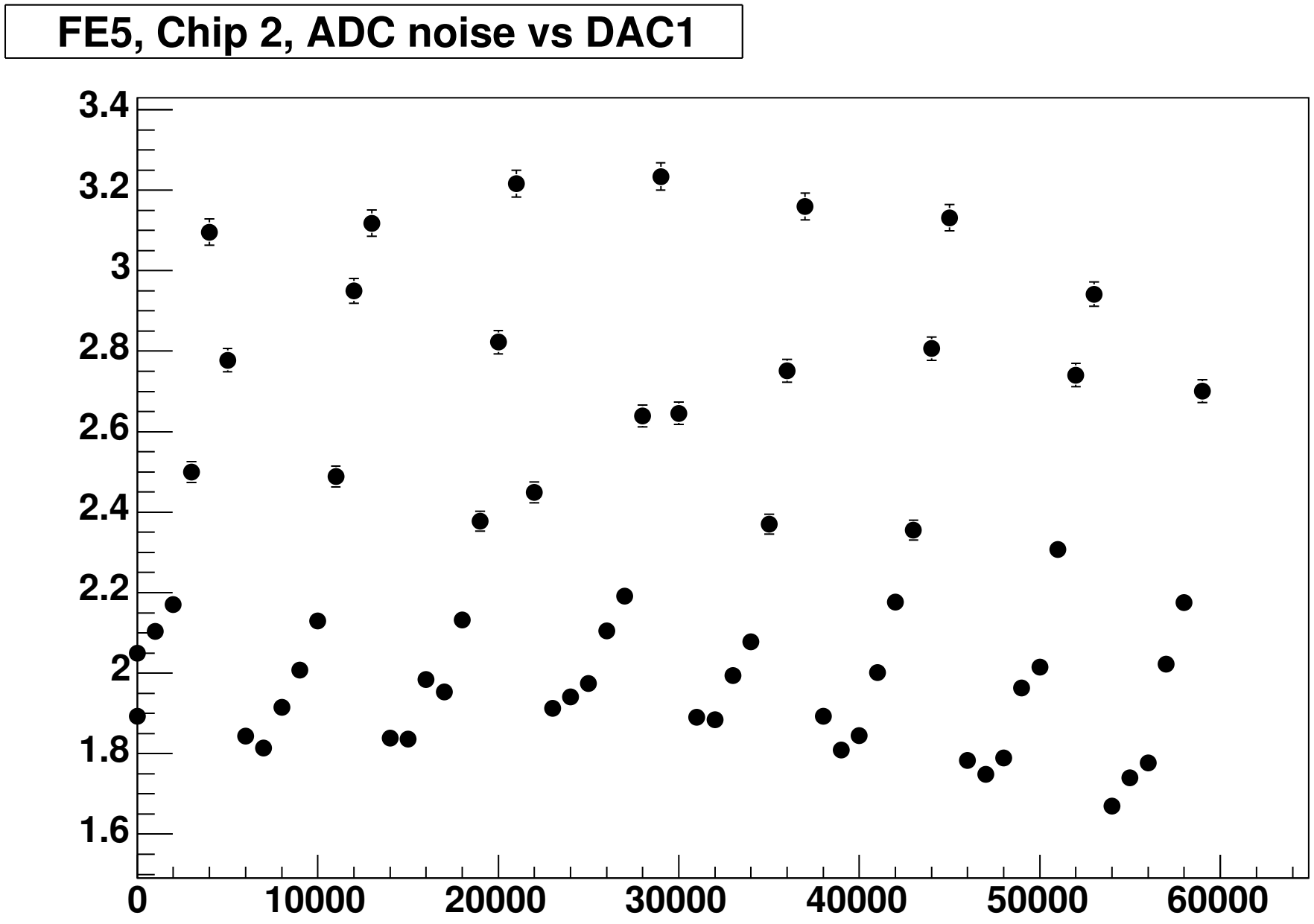

FE5, Chip 1, ADC residuals vs DAC1
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
0
10000
20000
30000
40000
50000
60000

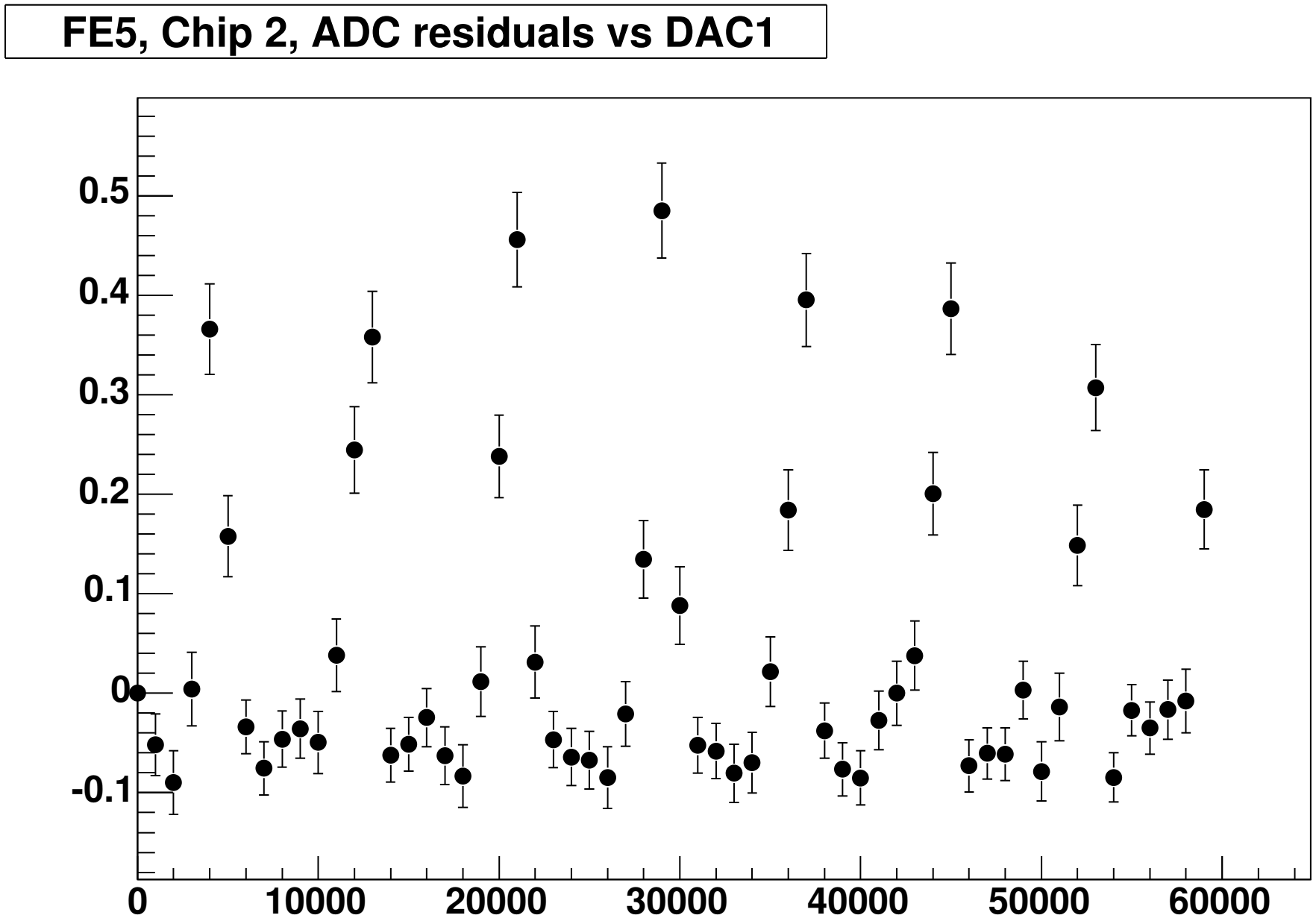

FE5, Chip 2, ADC mean vs DAC0
χ² / ndf 1.4e+05 / 57
p0 88.1 ± 0.0073
p1 0.2304 ± 2.454e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

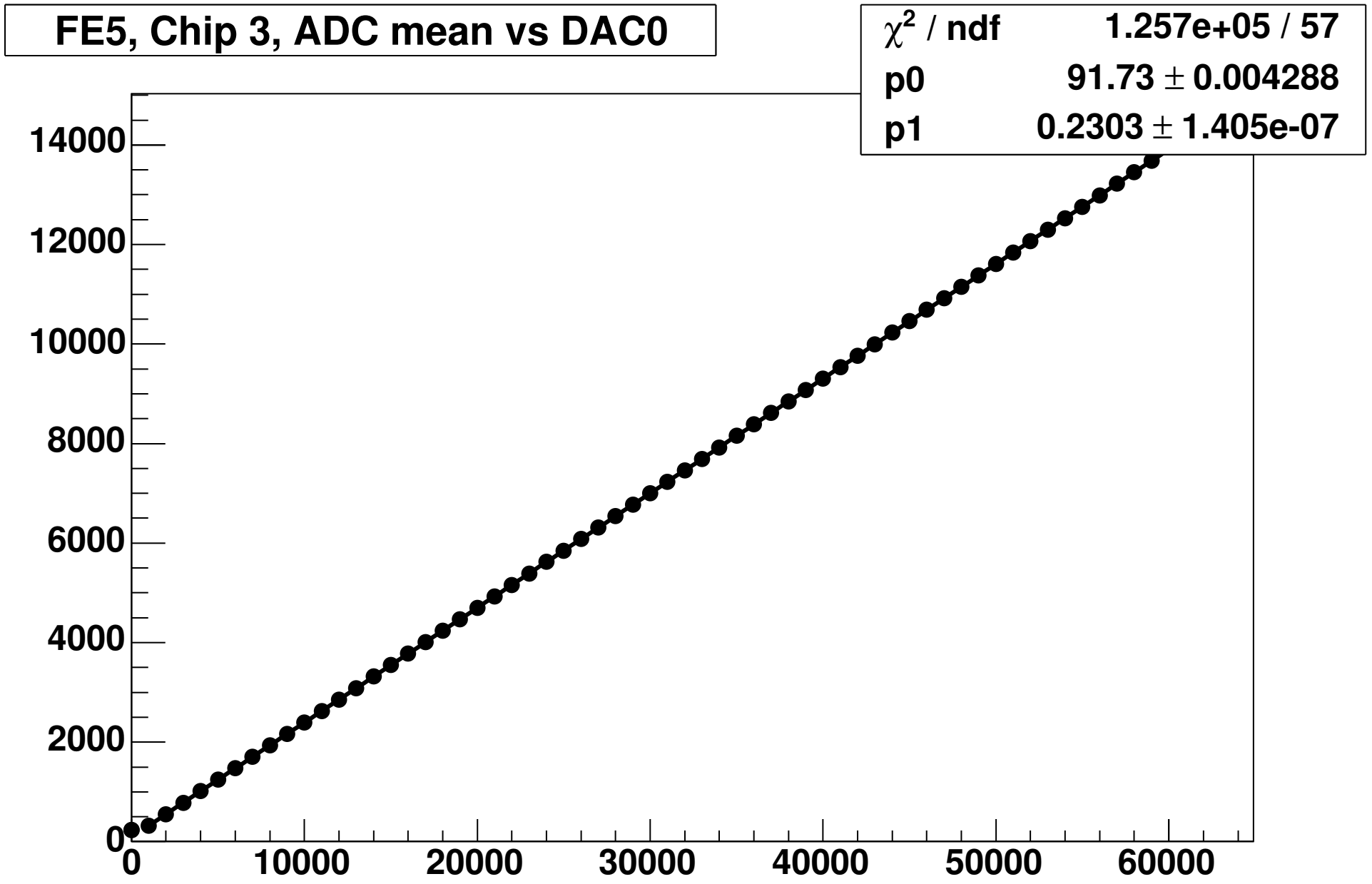

FE5, Chip 2, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

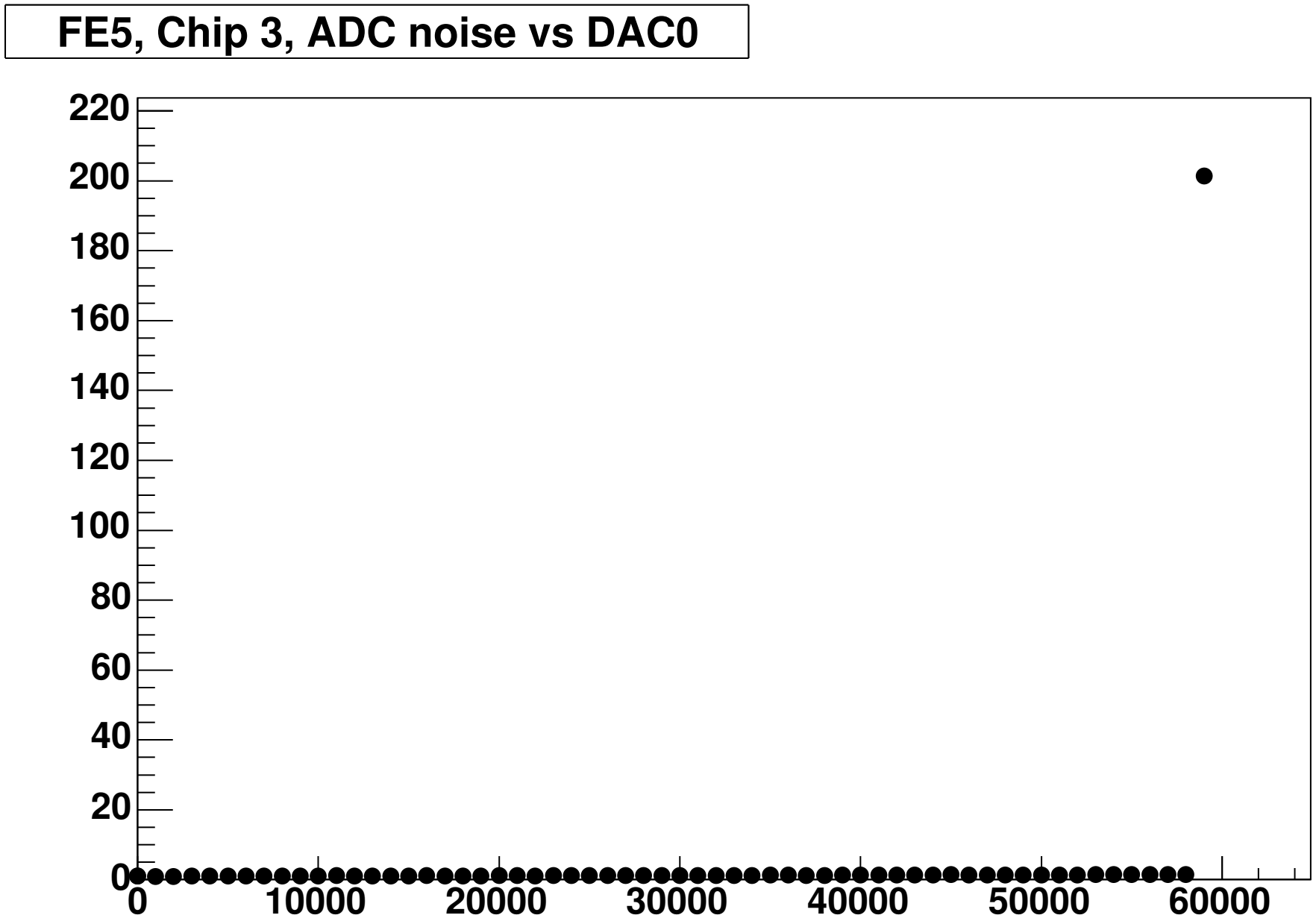

FE5, Chip 2, ADC residuals vs DAC0
5
4
3
2
1
0
-1
-2
-3
0
10000
20000
30000
40000
50000
60000

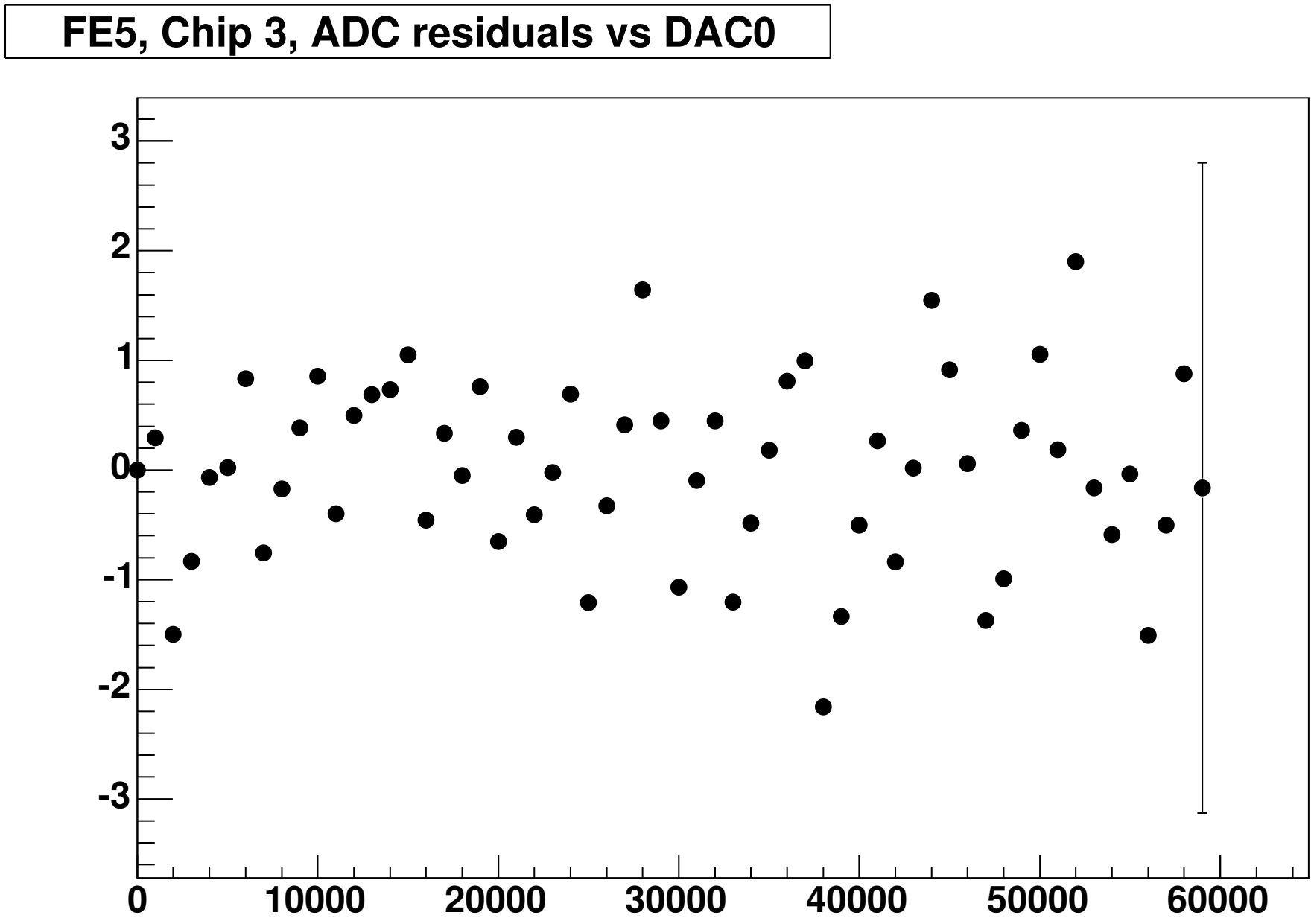

FE5, Chip 2, ADC mean vs DAC1
χ^2 / ndf 843.8 / 57
p0 233.2 ± 0.008487
p1 -4.257e-07 ± 2.405e-07
233.7
233.6
233.5
233.4
233.3
233.2
233.1
233
0
10000
20000
30000
40000
50000
60000

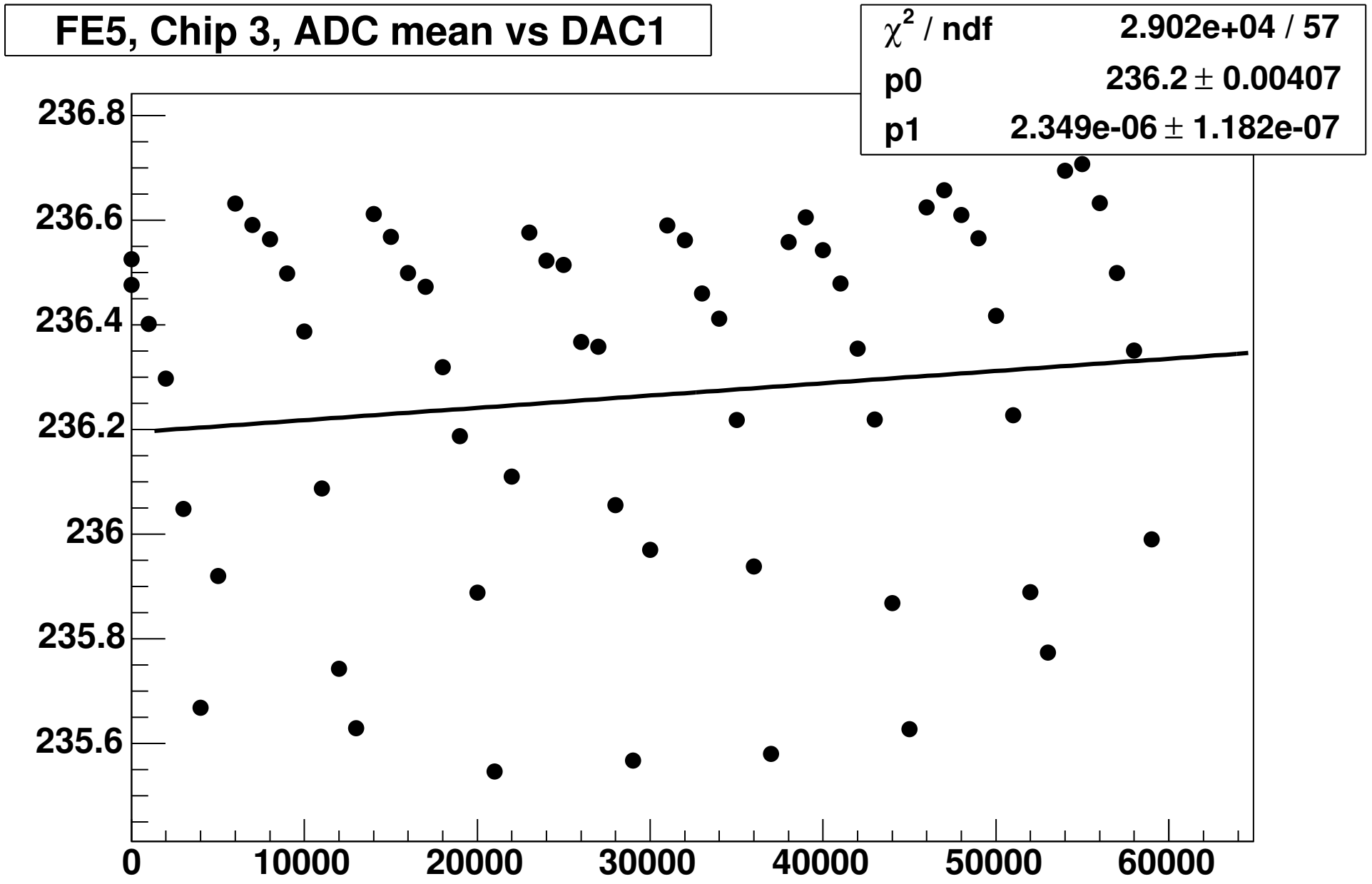

FE5, Chip 2, ADC noise vs DAC1
3.4
3.2
3
2.8
2.6
2.4
2.2
2
1.8
1.6
0
10000
20000
30000
40000
50000
60000

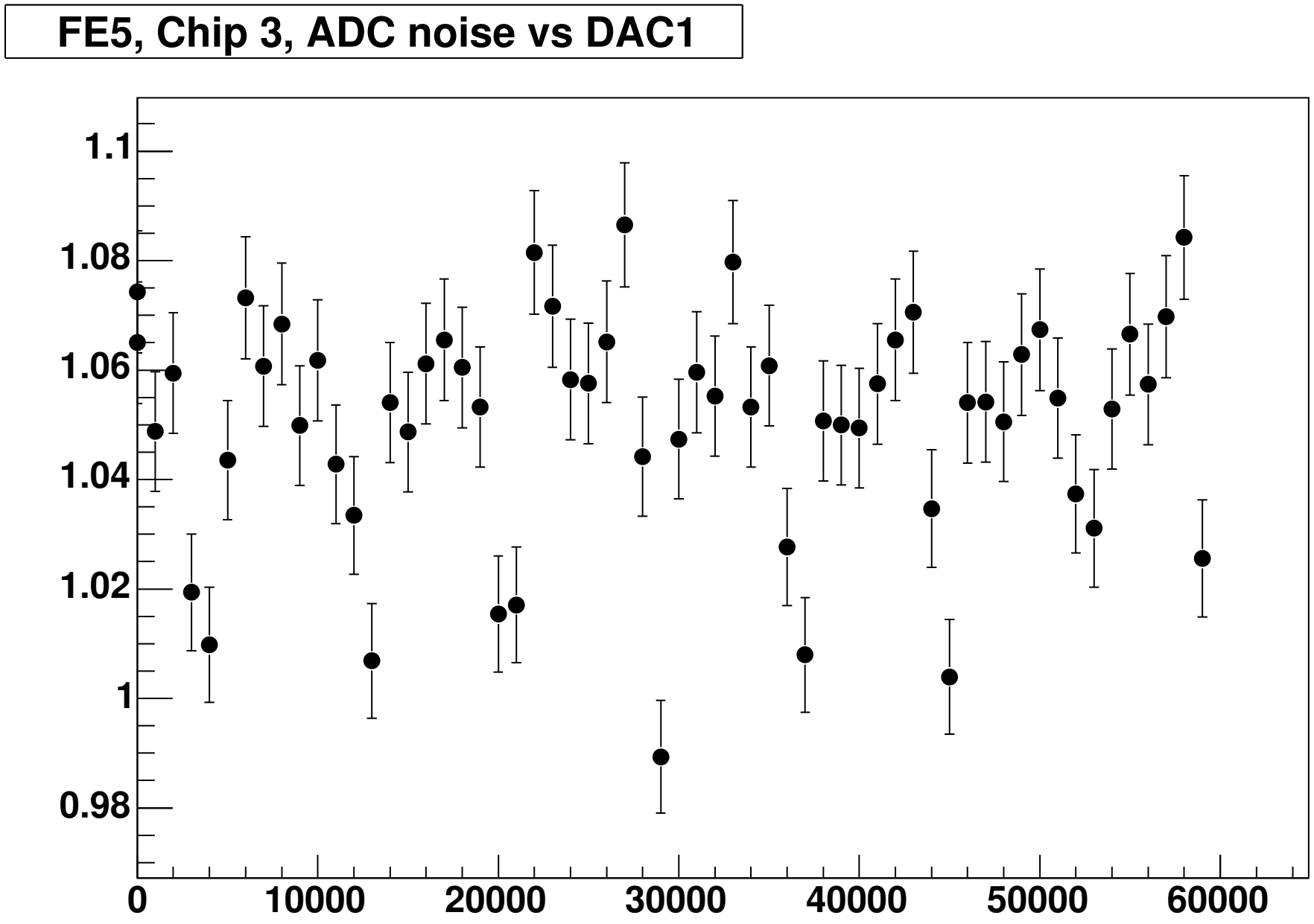

FE5, Chip 2, ADC residuals vs DAC1
0.5
0.4
0.3
0.2
0.1
0
-0.1
0
10000
20000
30000
40000
50000
60000

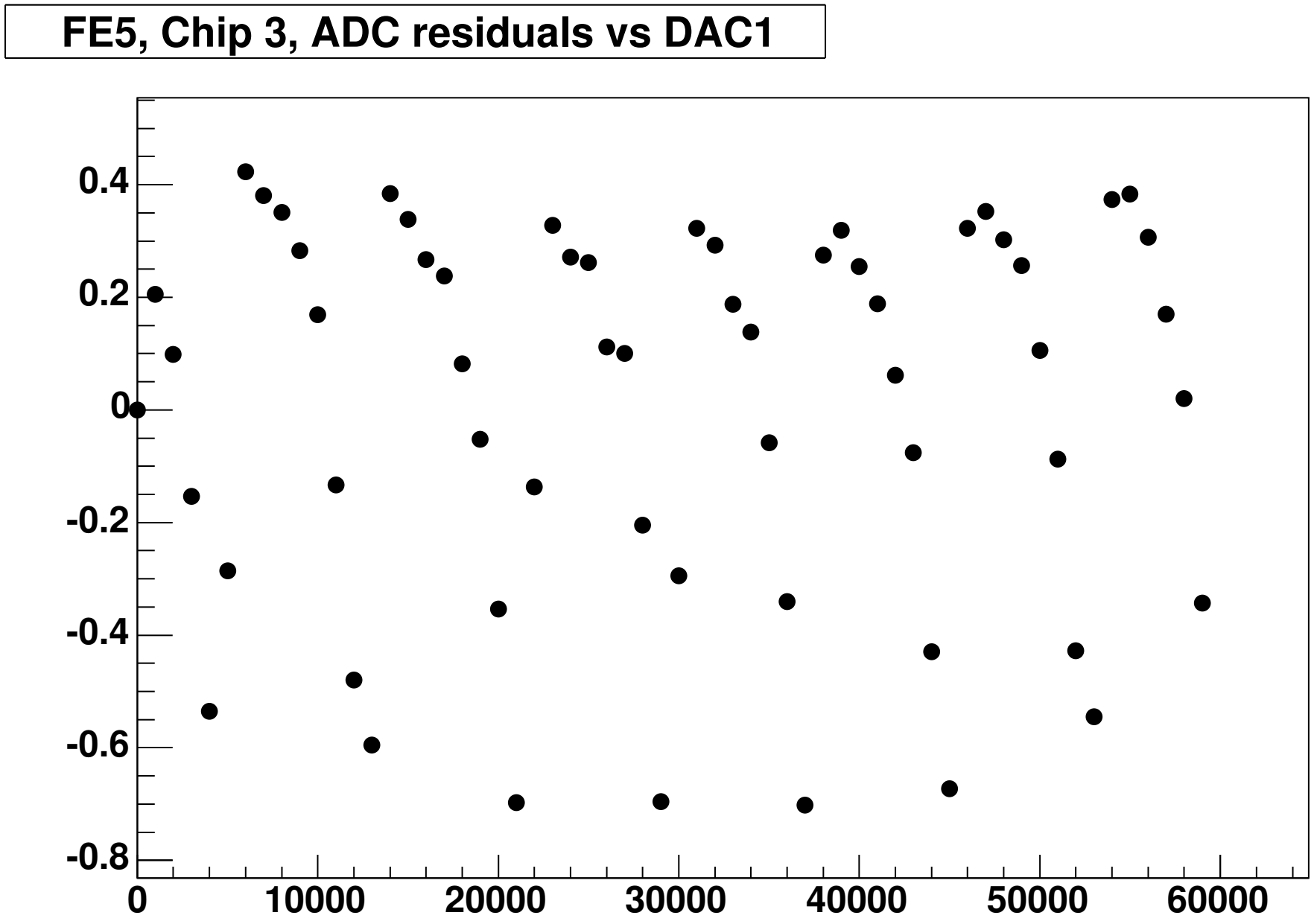

FE5, Chip 3, ADC mean vs DAC0
χ² / ndf 1.257e+05 / 57
p0 91.73 ± 0.004288
p1 0.2303 ± 1.405e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

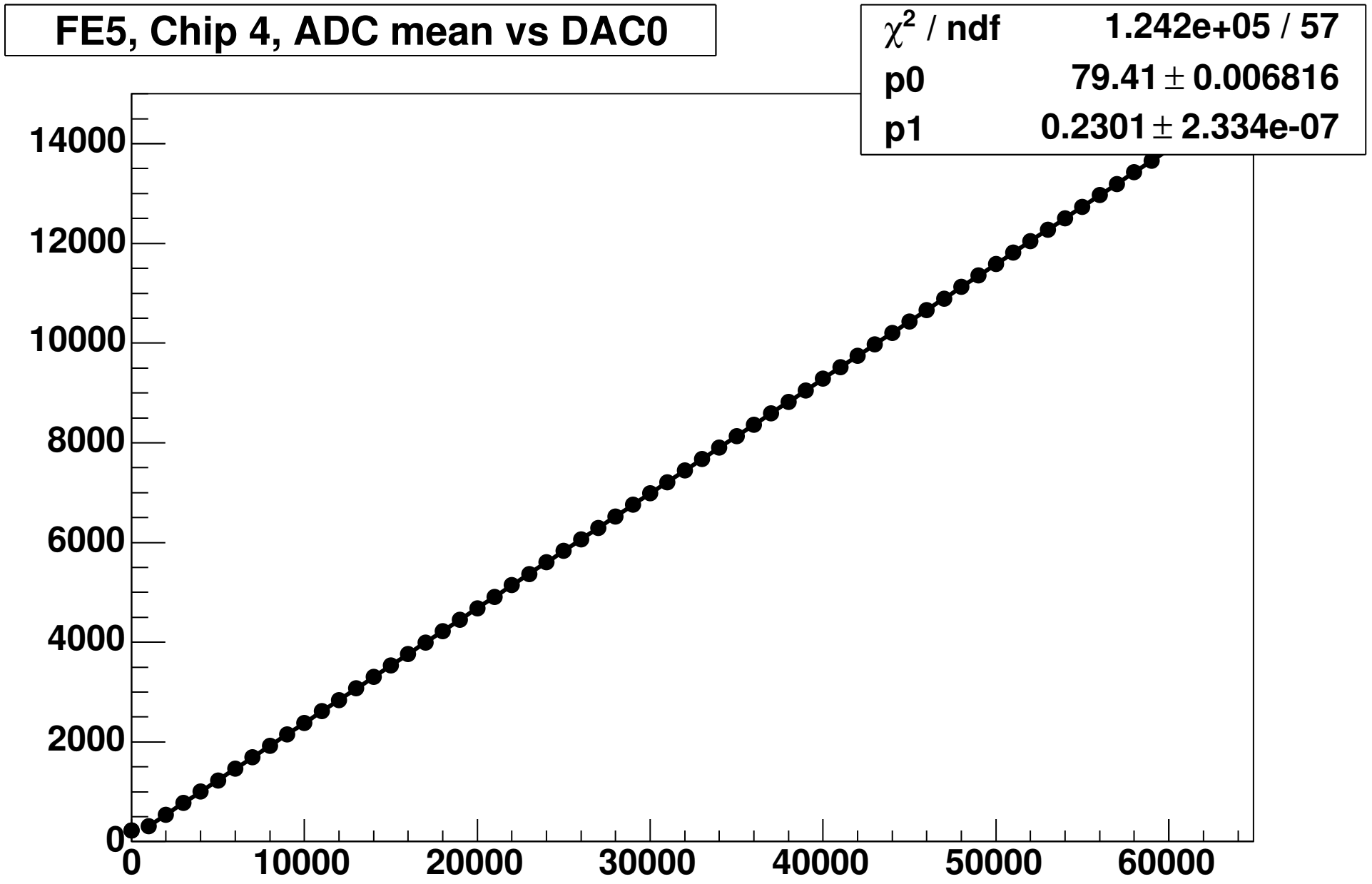

FE5, Chip 3, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

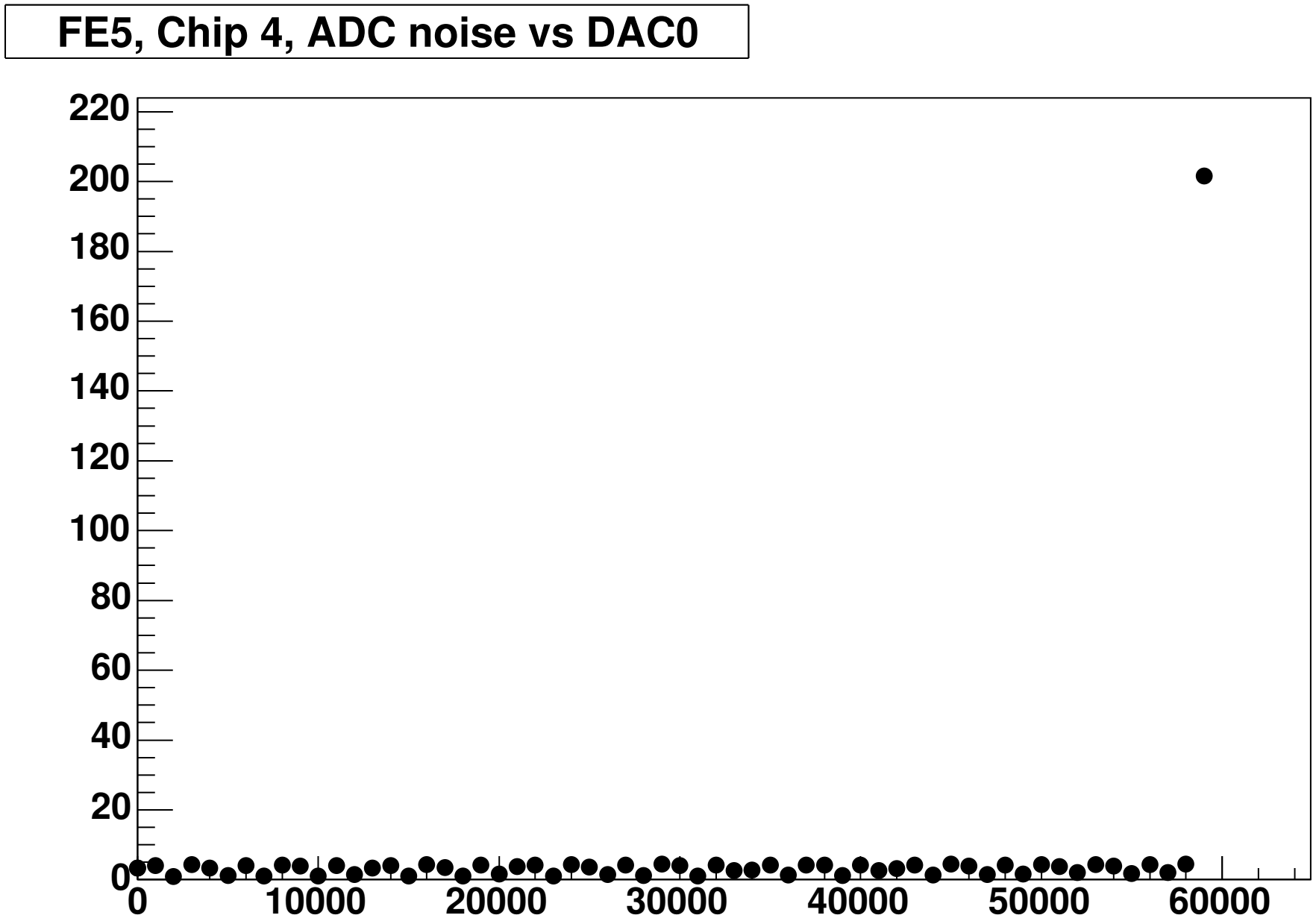

FE5, Chip 3, ADC residuals vs DAC0
3
2
1
0
-1
-2
-3
0
10000
20000
30000
40000
50000
60000

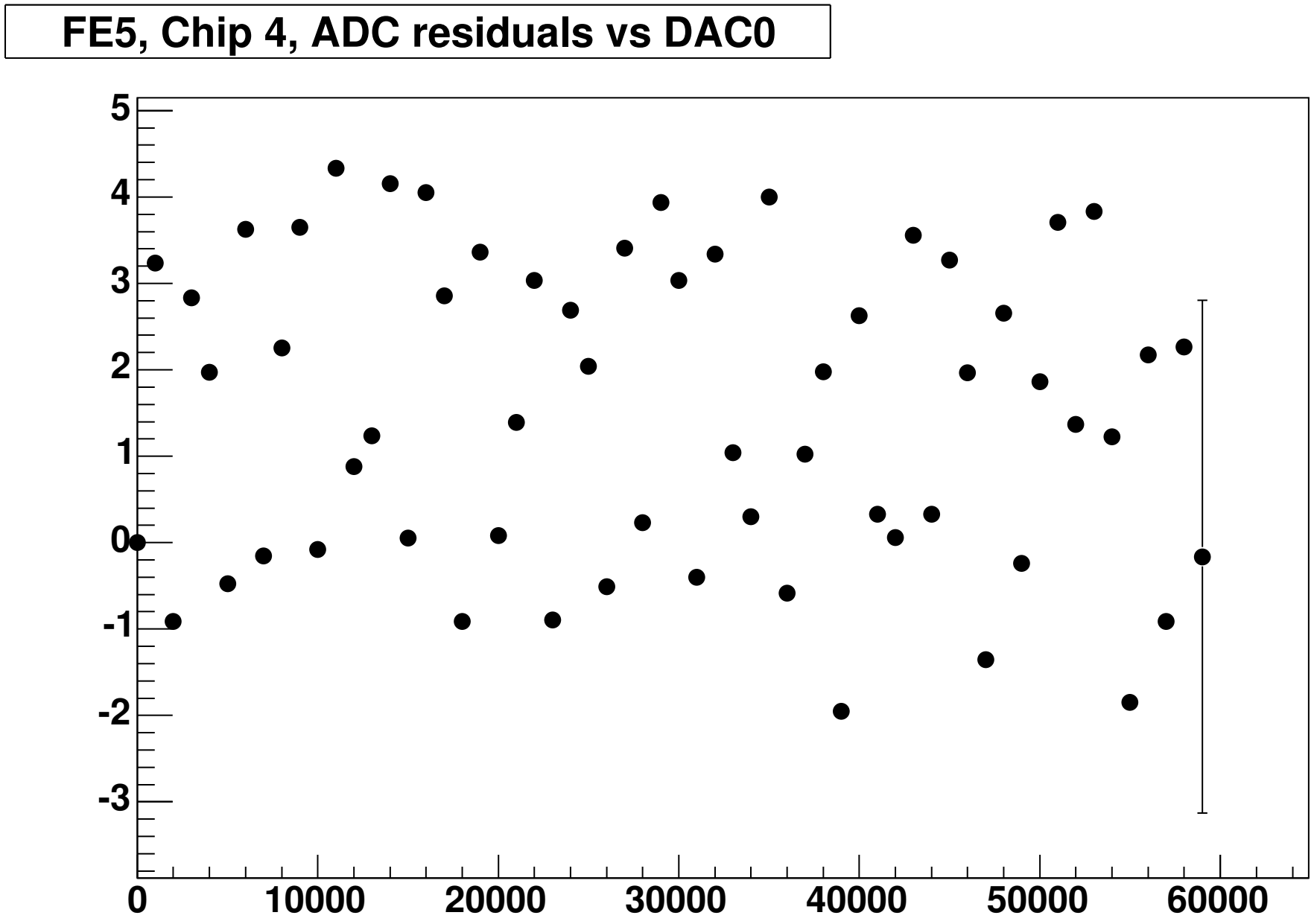

FE5, Chip 3, ADC mean vs DAC1
χ² / ndf 2.902e+04 / 57
p0 236.2 ± 0.00407
p1 2.349e-06 ± 1.182e-07
236.8
236.6
236.4
236.2
236
235.8
235.6
0
10000
20000
30000
40000
50000
60000

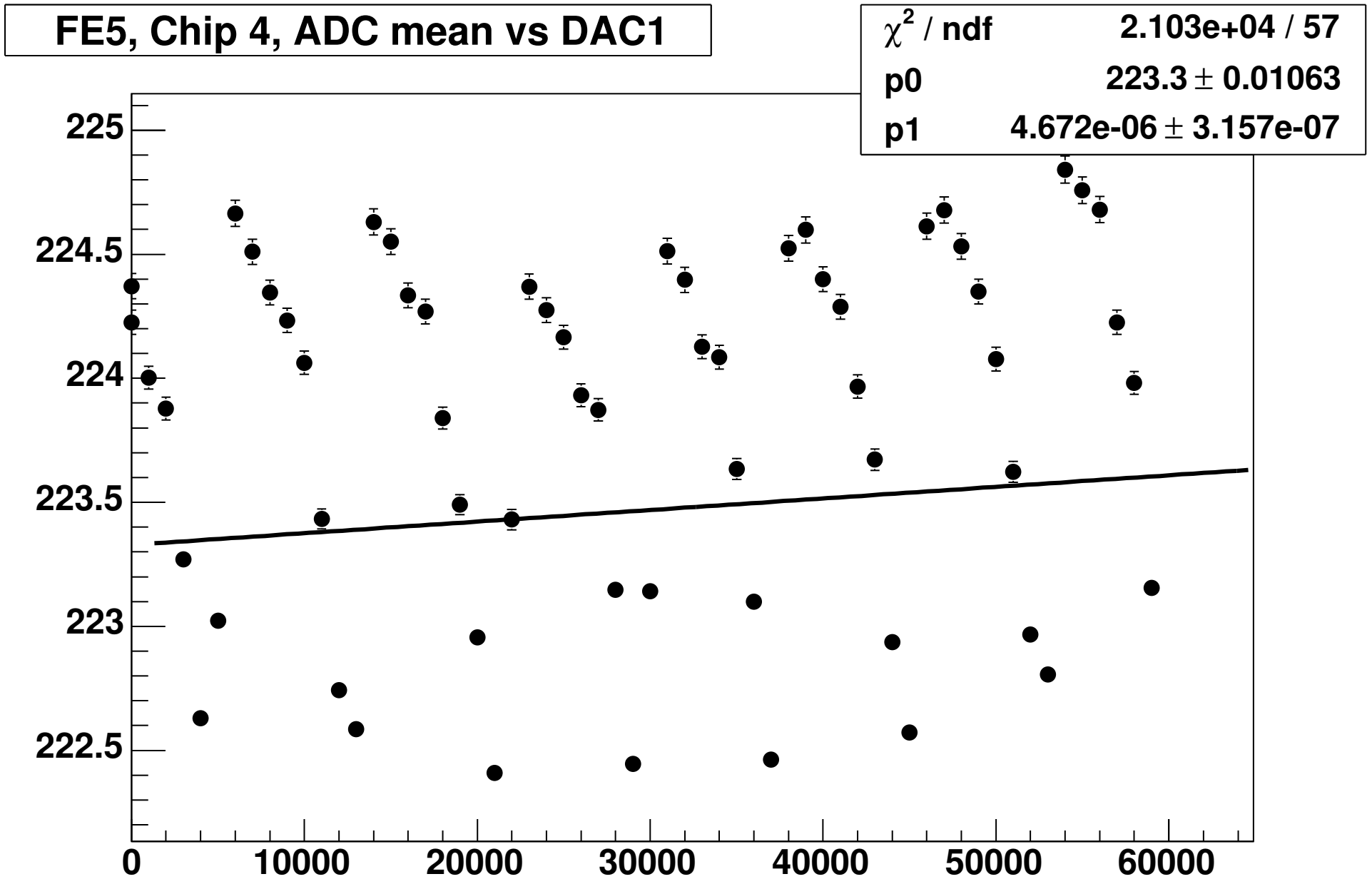

FE5, Chip 3, ADC noise vs DAC1
1.1
1.08
1.06
1.04
1.02
1
0.98
0
10000
20000
30000
40000
50000
60000

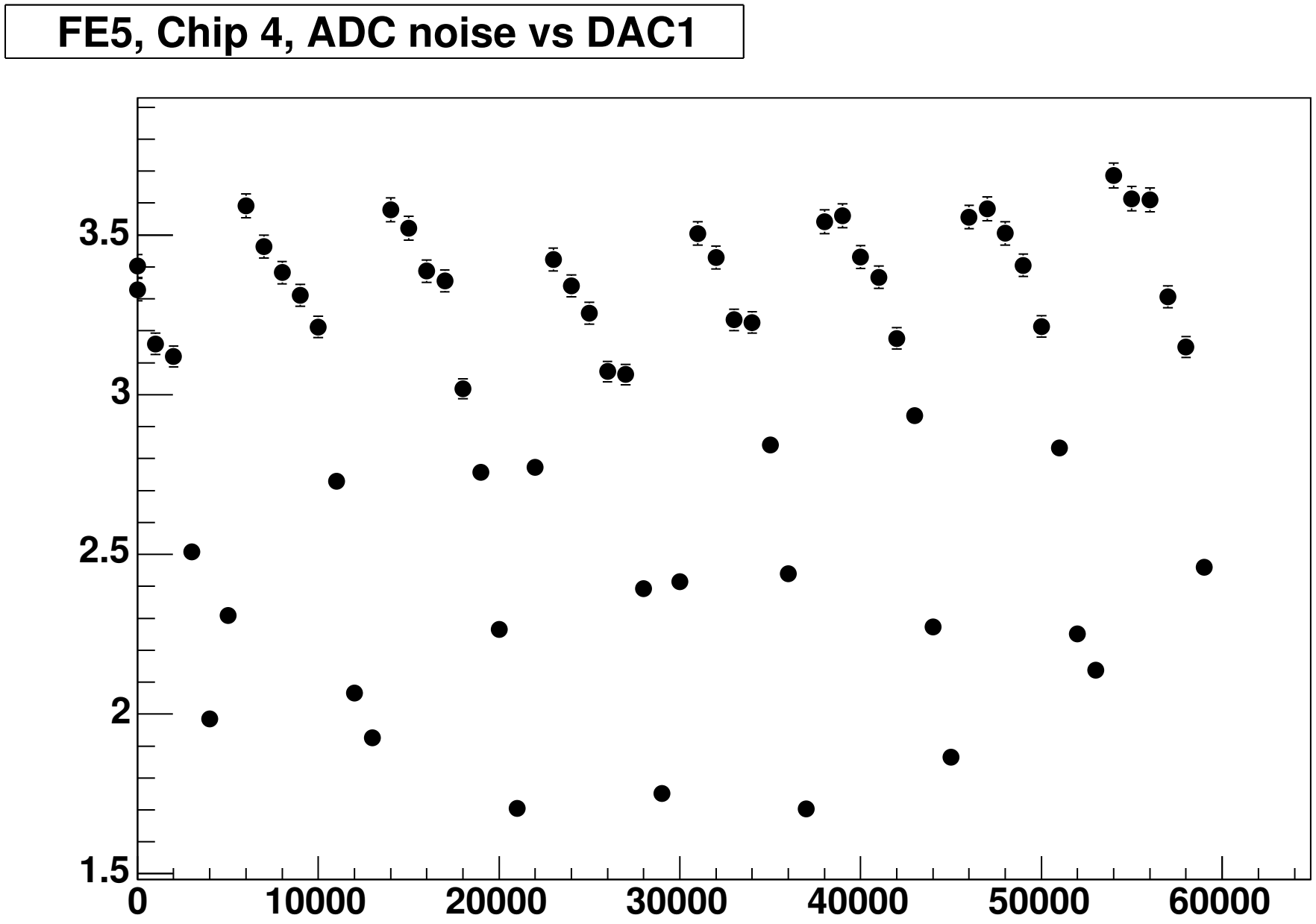

FE5, Chip 3, ADC residuals vs DAC1
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
0
10000
20000
30000
40000
50000
60000

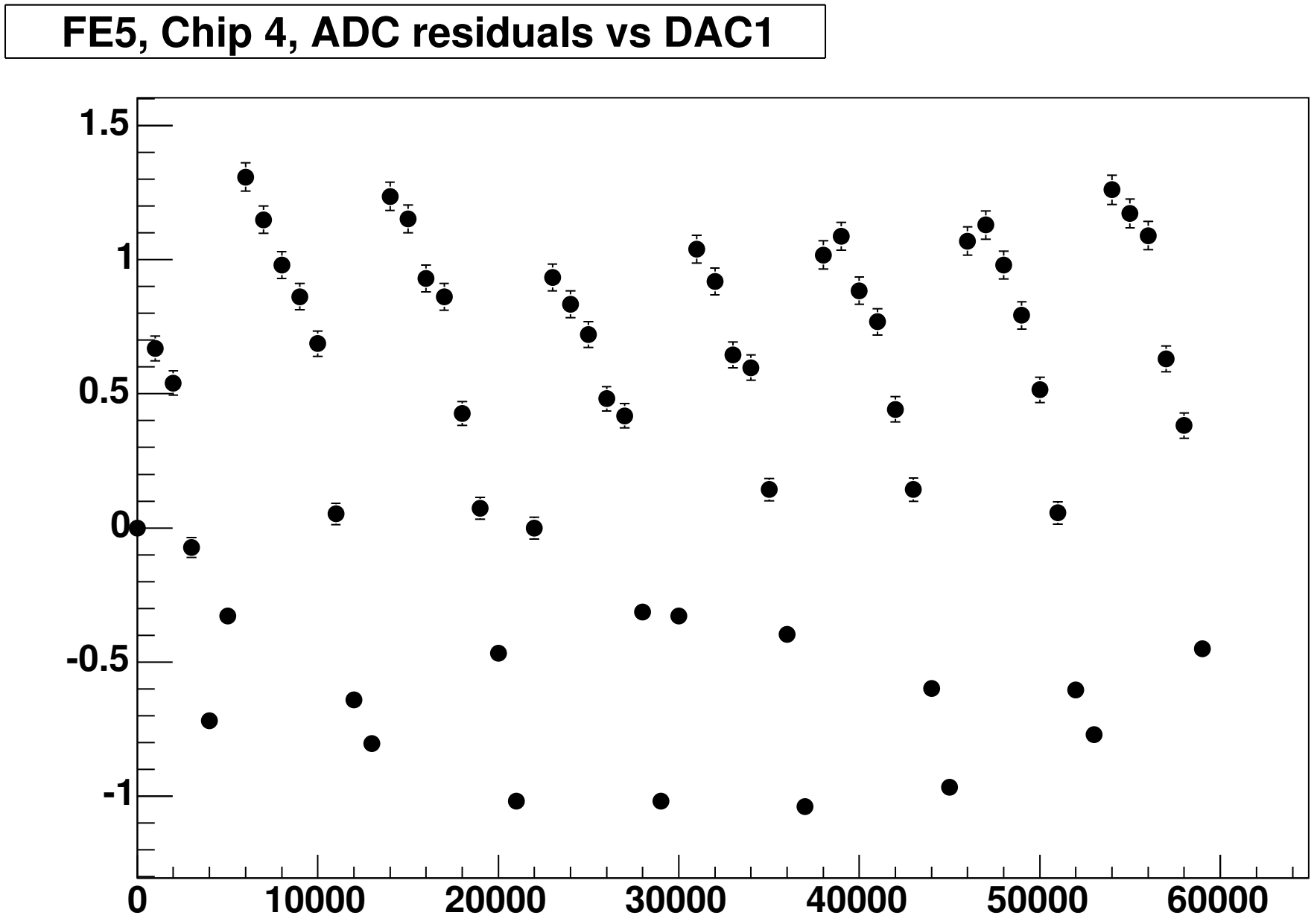

FE5, Chip 4, ADC mean vs DAC0
χ² / ndf 1.242e+05 / 57
p0 79.41 ± 0.006816
p1 0.2301 ± 2.334e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

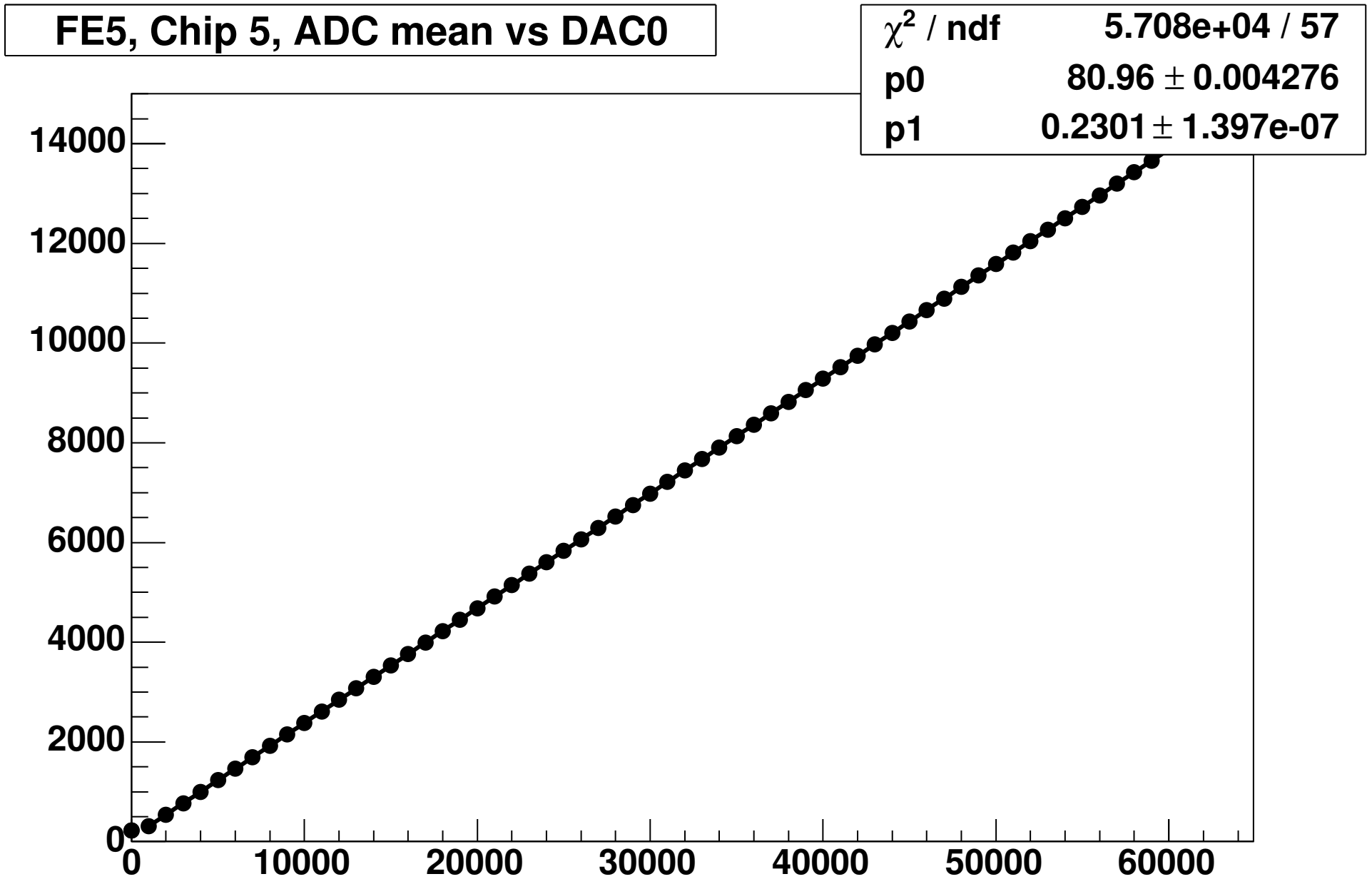

FE5, Chip 4, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

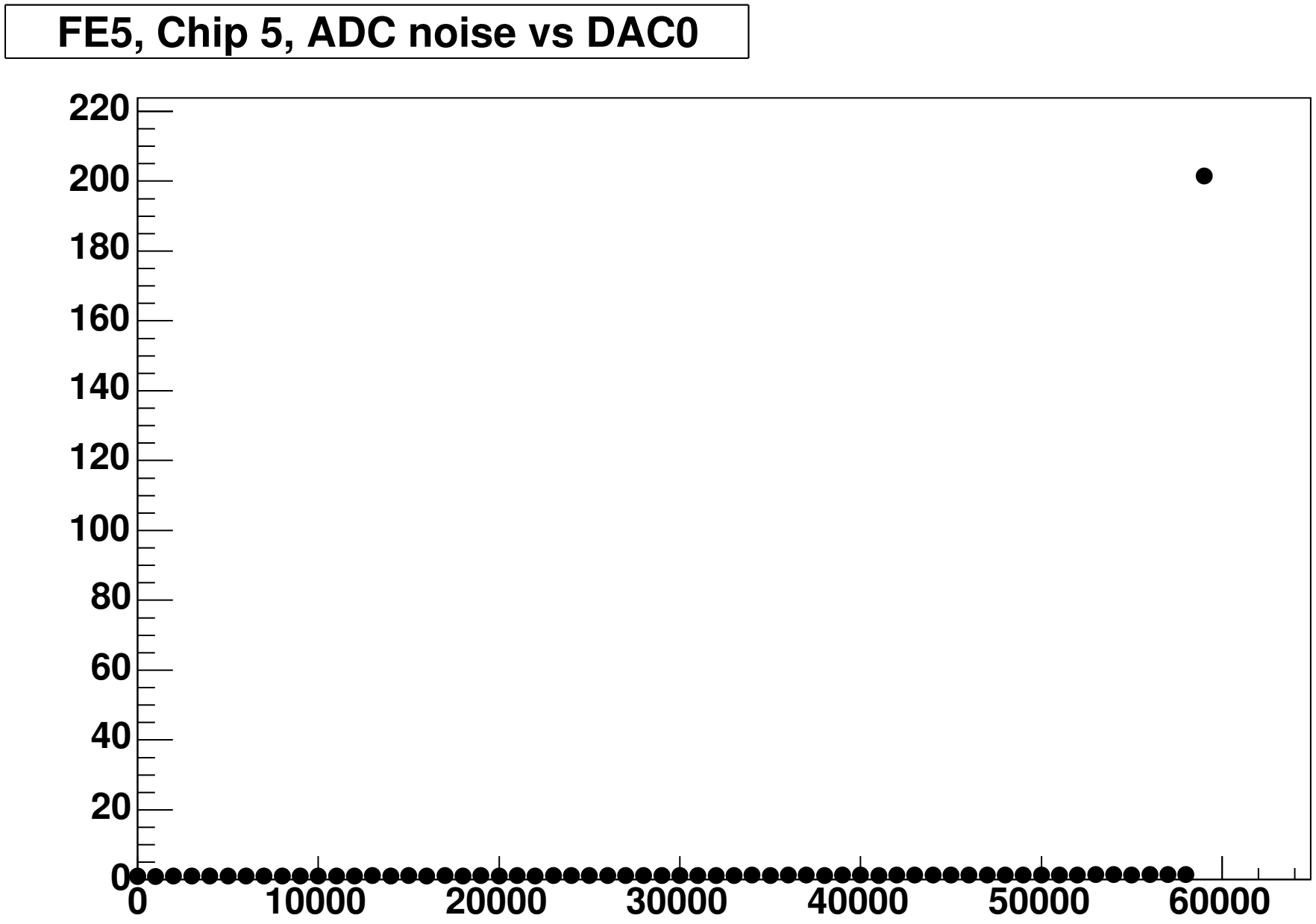

FE5, Chip 4, ADC residuals vs DAC0
5
4
3
2
1
0
-1
-2
-3
0
10000
20000
30000
40000
50000
60000

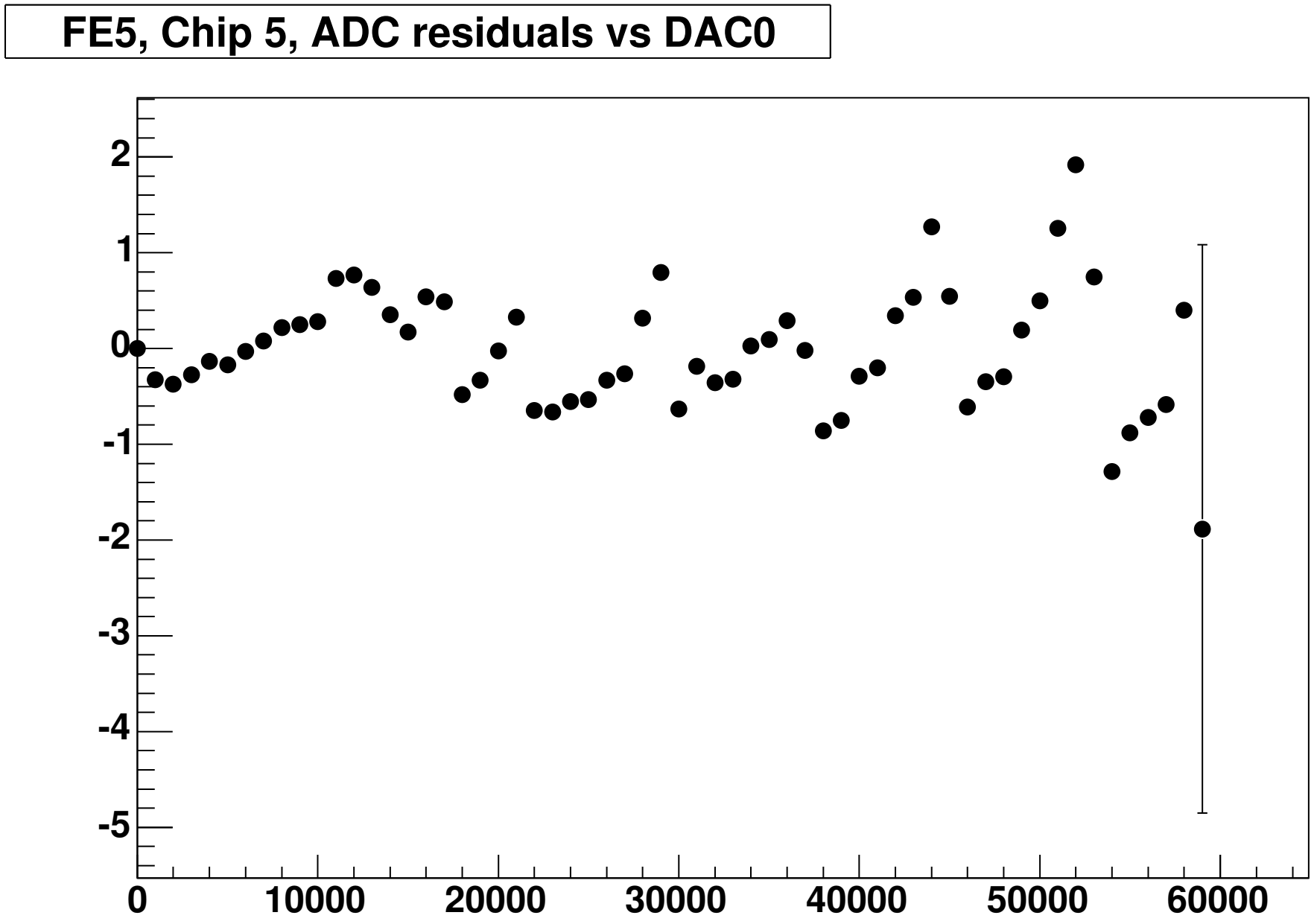

FE5, Chip 4, ADC mean vs DAC1
χ² / ndf 2.103e+04 / 57
p0 223.3 ± 0.01063
p1 4.672e-06 ± 3.157e-07
225
224.5
224
223.5
223
222.5
0
10000
20000
30000
40000
50000
60000

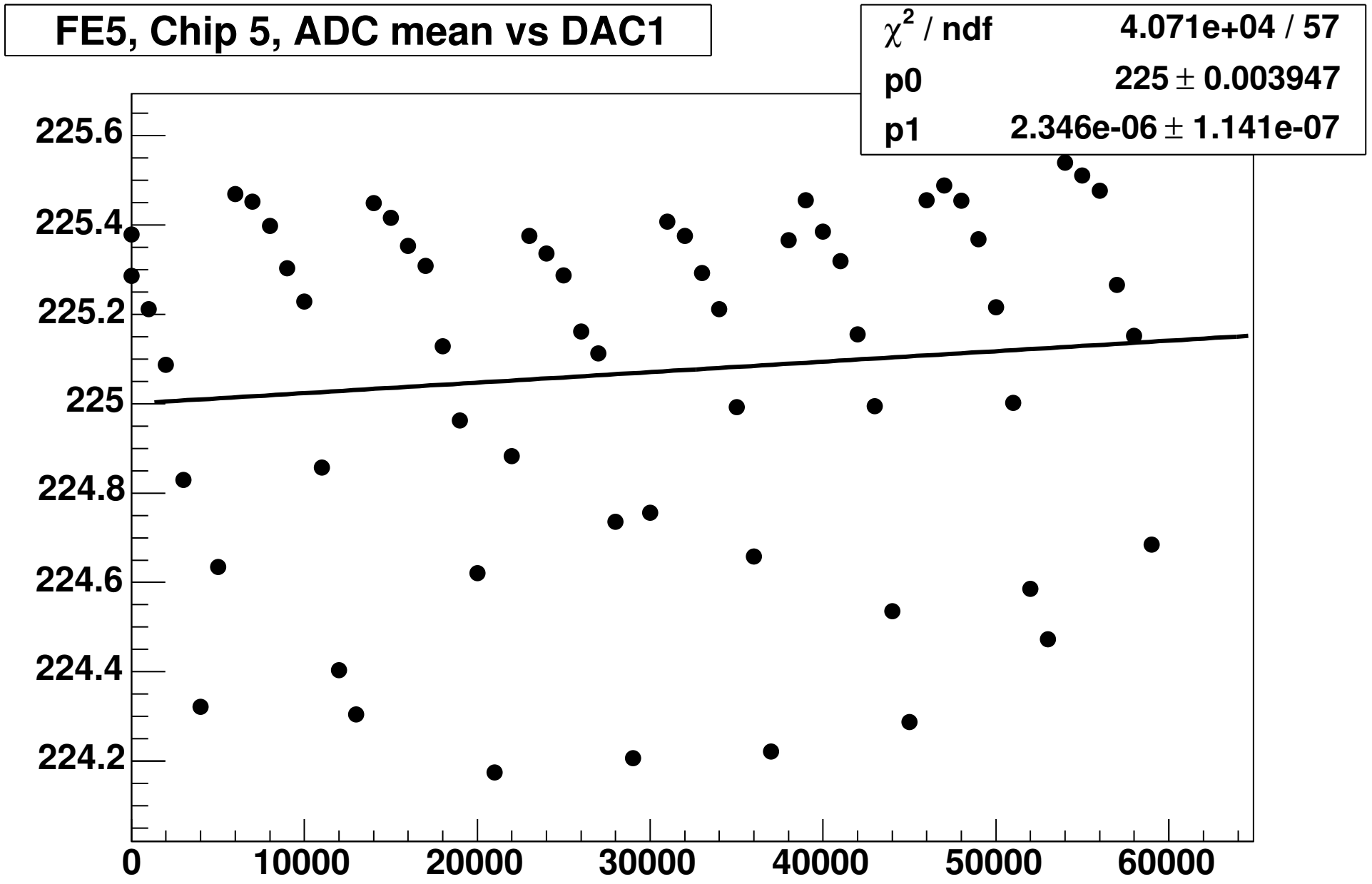

FE5, Chip 4, ADC noise vs DAC1
3.5
3
2.5
2
1.5
0
10000
20000
30000
40000
50000
60000

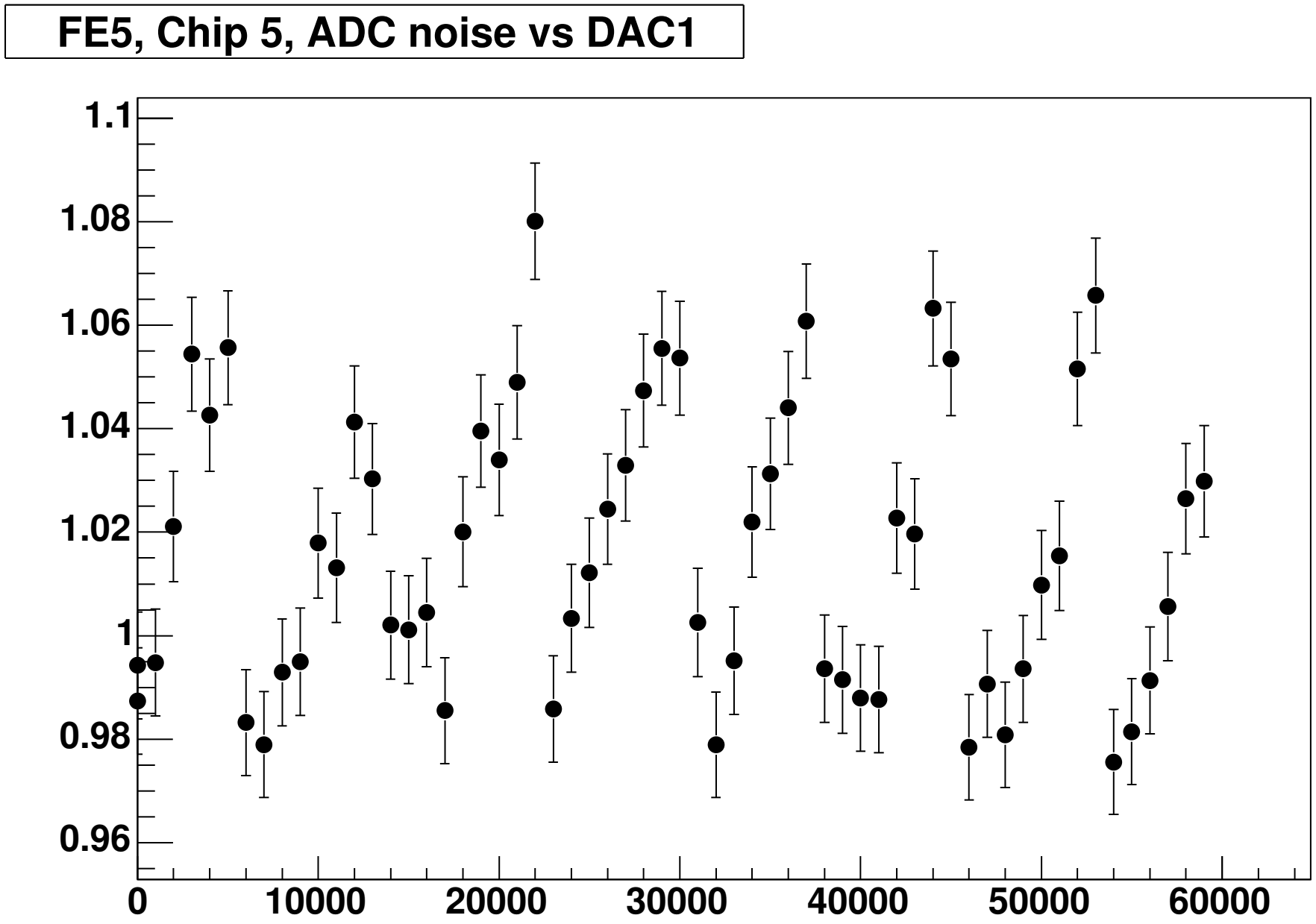

FE5, Chip 4, ADC residuals vs DAC1
1.5
1
0.5
0
-0.5
-1
0
10000
20000
30000
40000
50000
60000

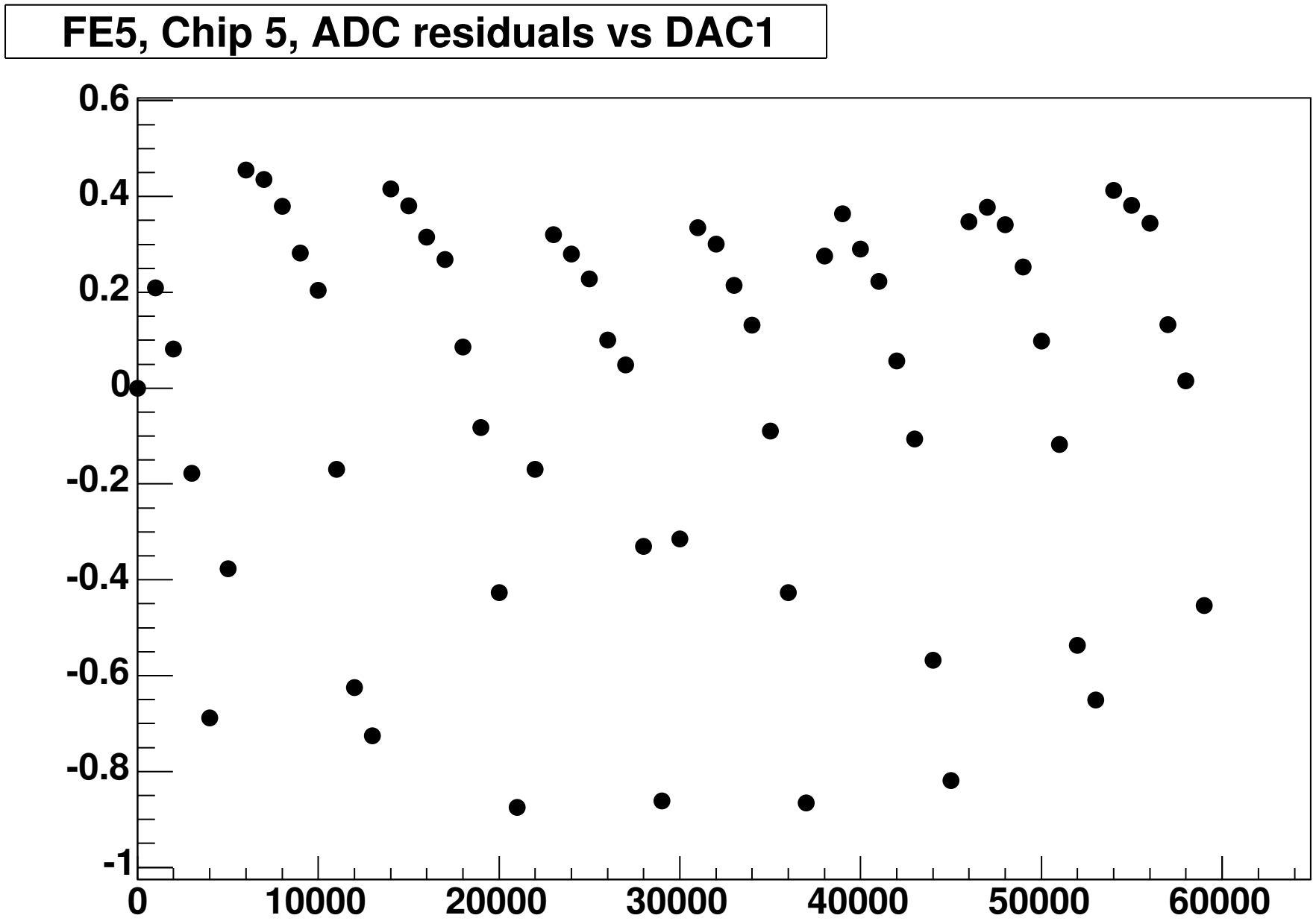

FE5, Chip 5, ADC mean vs DAC0
χ² / ndf 5.708e+04 / 57
p0 80.96 ± 0.004276
p1 0.2301 ± 1.397e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

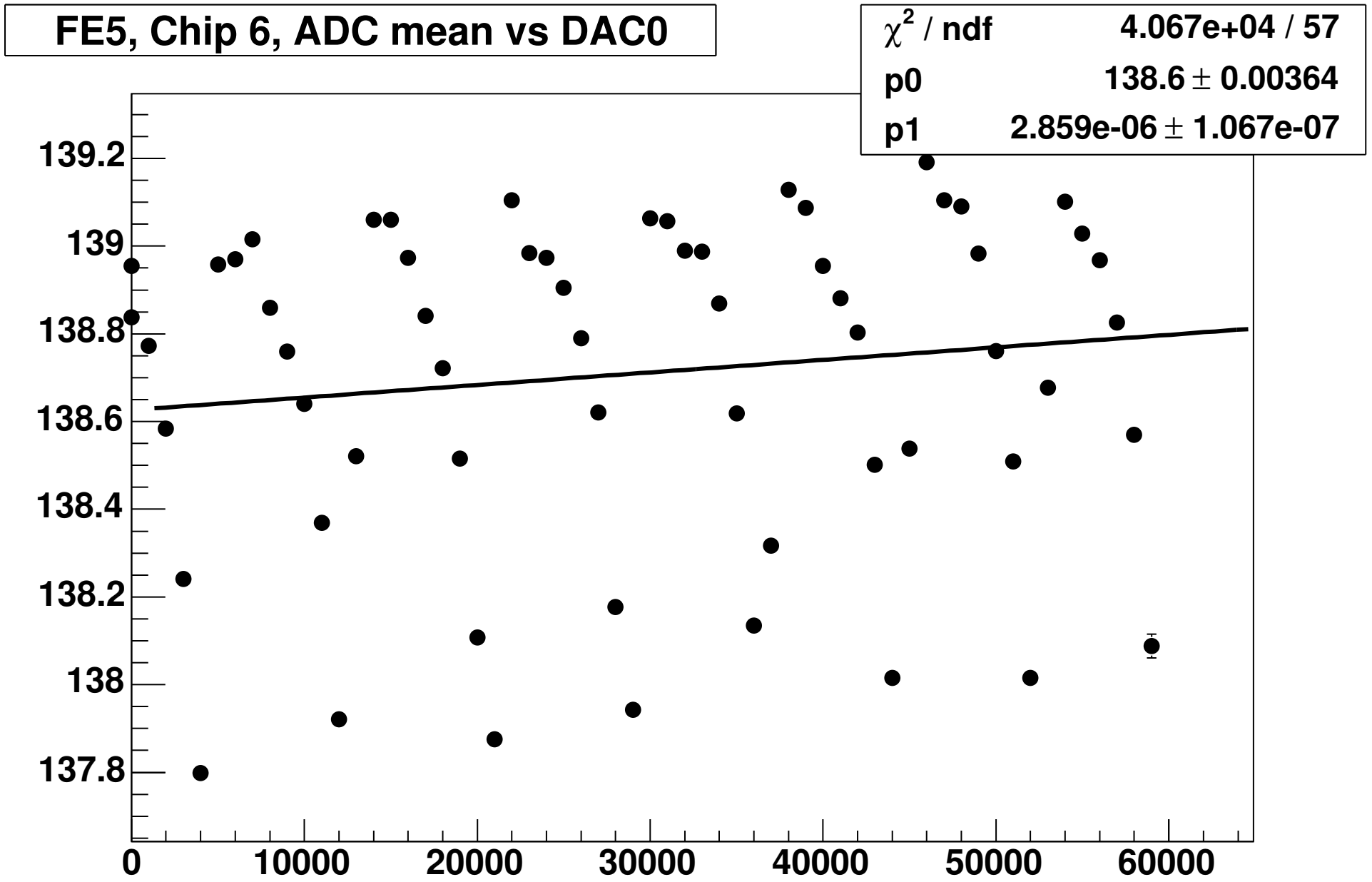

FE5, Chip 5, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

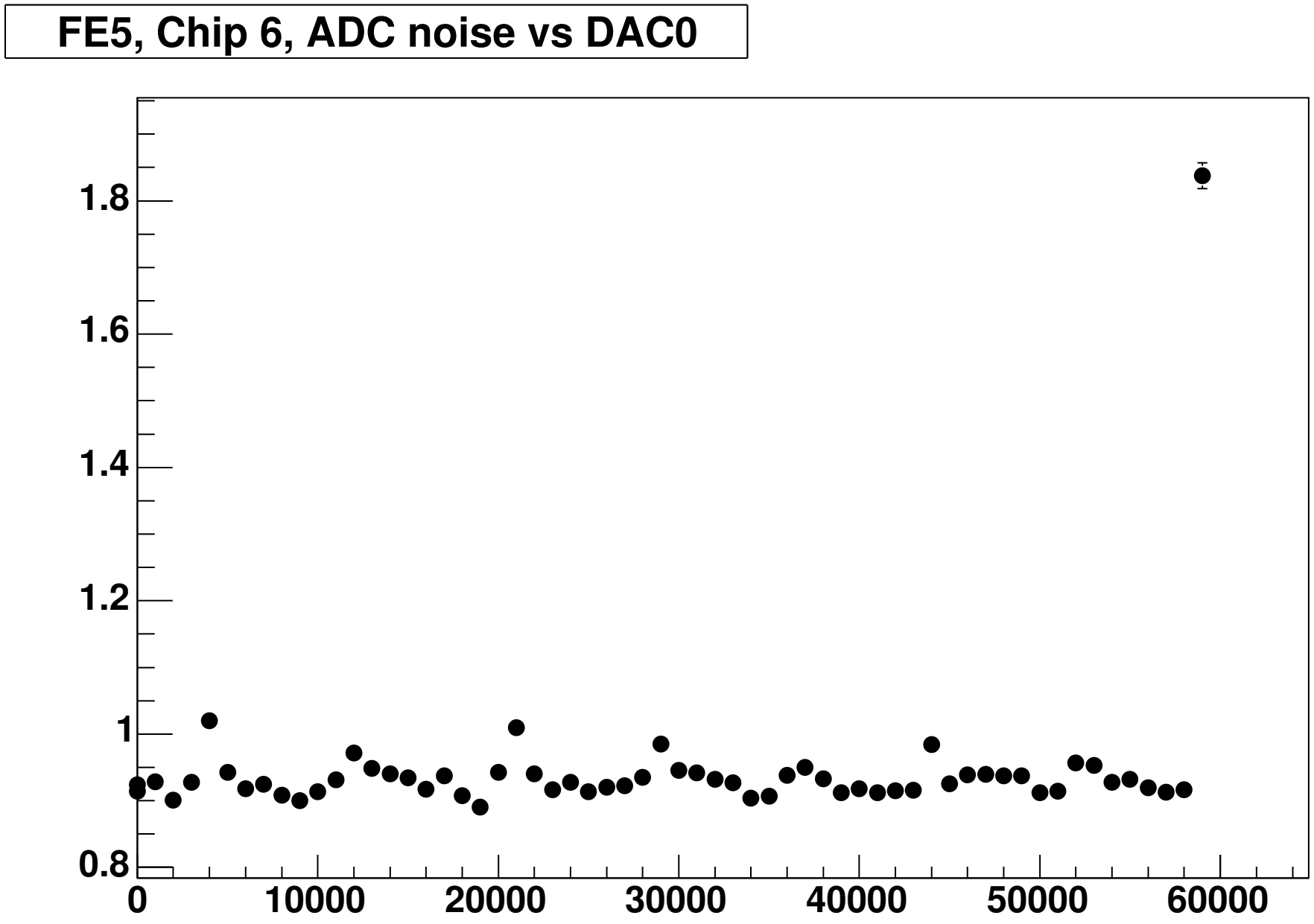

FE5, Chip 5, ADC residuals vs DAC0
2
1
0
-1
-2
-3
-4
-5
0
10000
20000
30000
40000
50000
60000

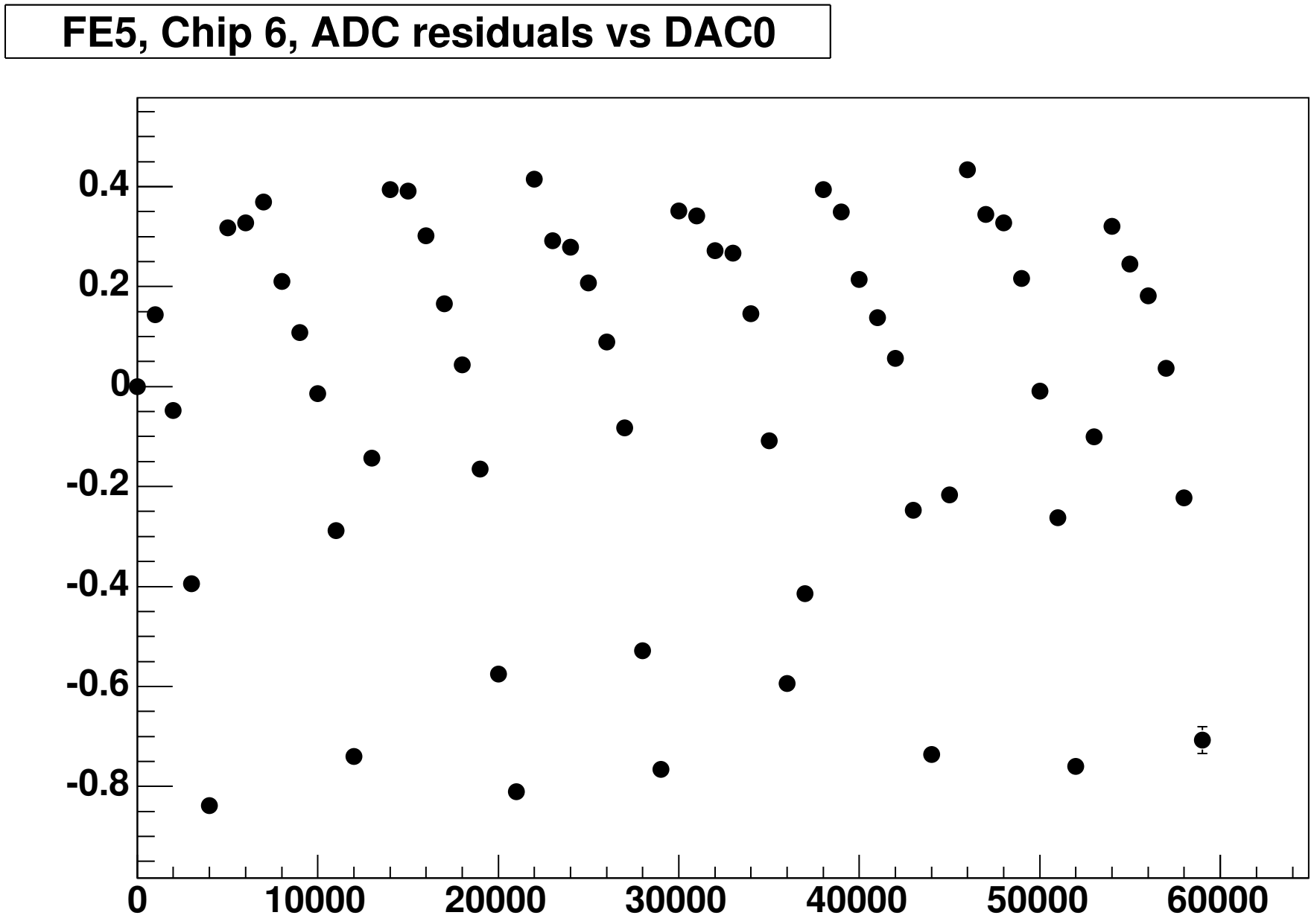

FE5, Chip 5, ADC mean vs DAC1
χ² / ndf 4.071e+04 / 57
p0 225 ± 0.003947
p1 2.346e-06 ± 1.141e-07
225.6
225.4
225.2
225
224.8
224.6
224.4
224.2
0
10000
20000
30000
40000
50000
60000

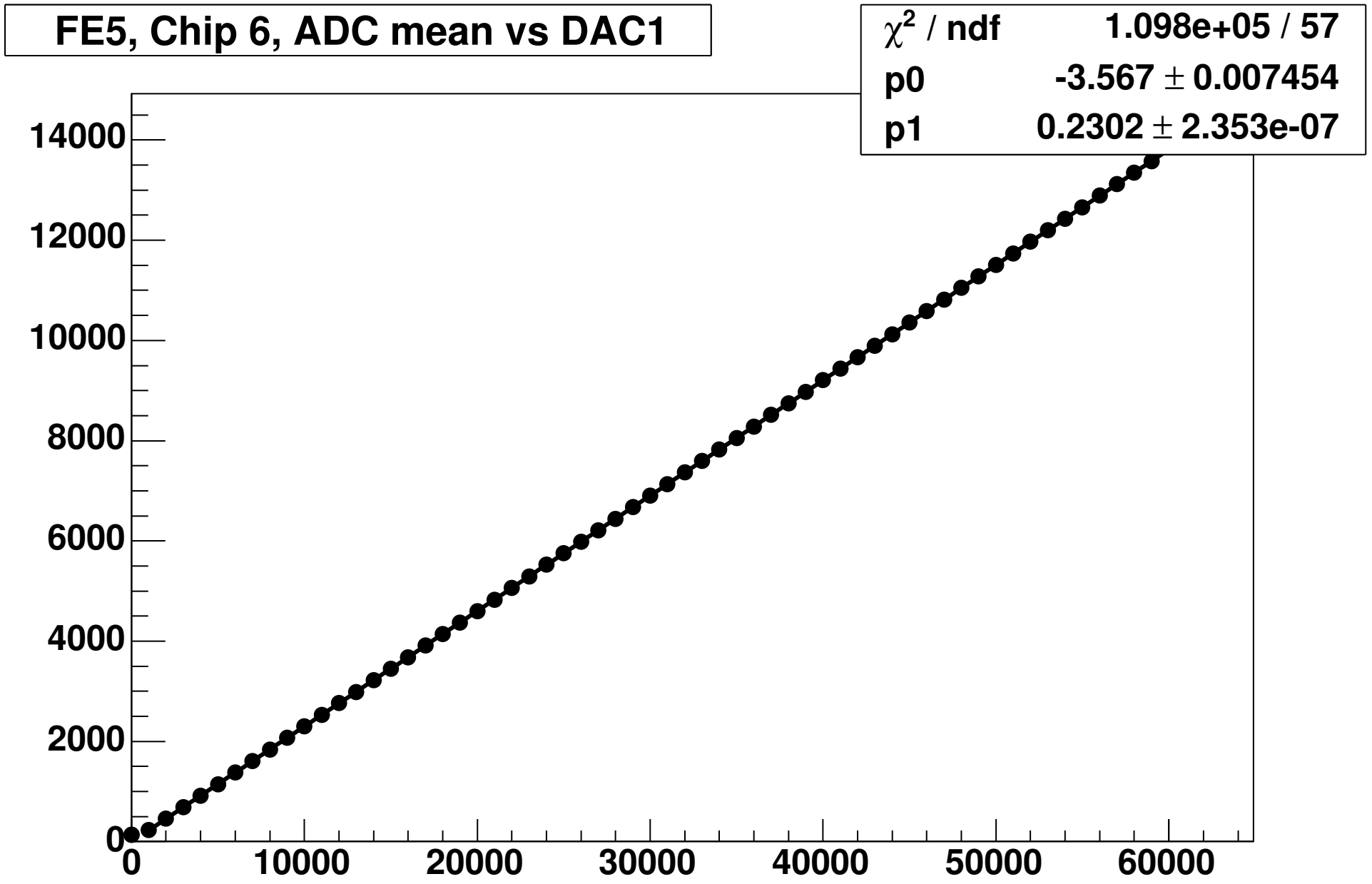

FE5, Chip 5, ADC noise vs DAC1
1.1
1.08
1.06
1.04
1.02
1
0.98
0.96
0
10000
20000
30000
40000
50000
60000

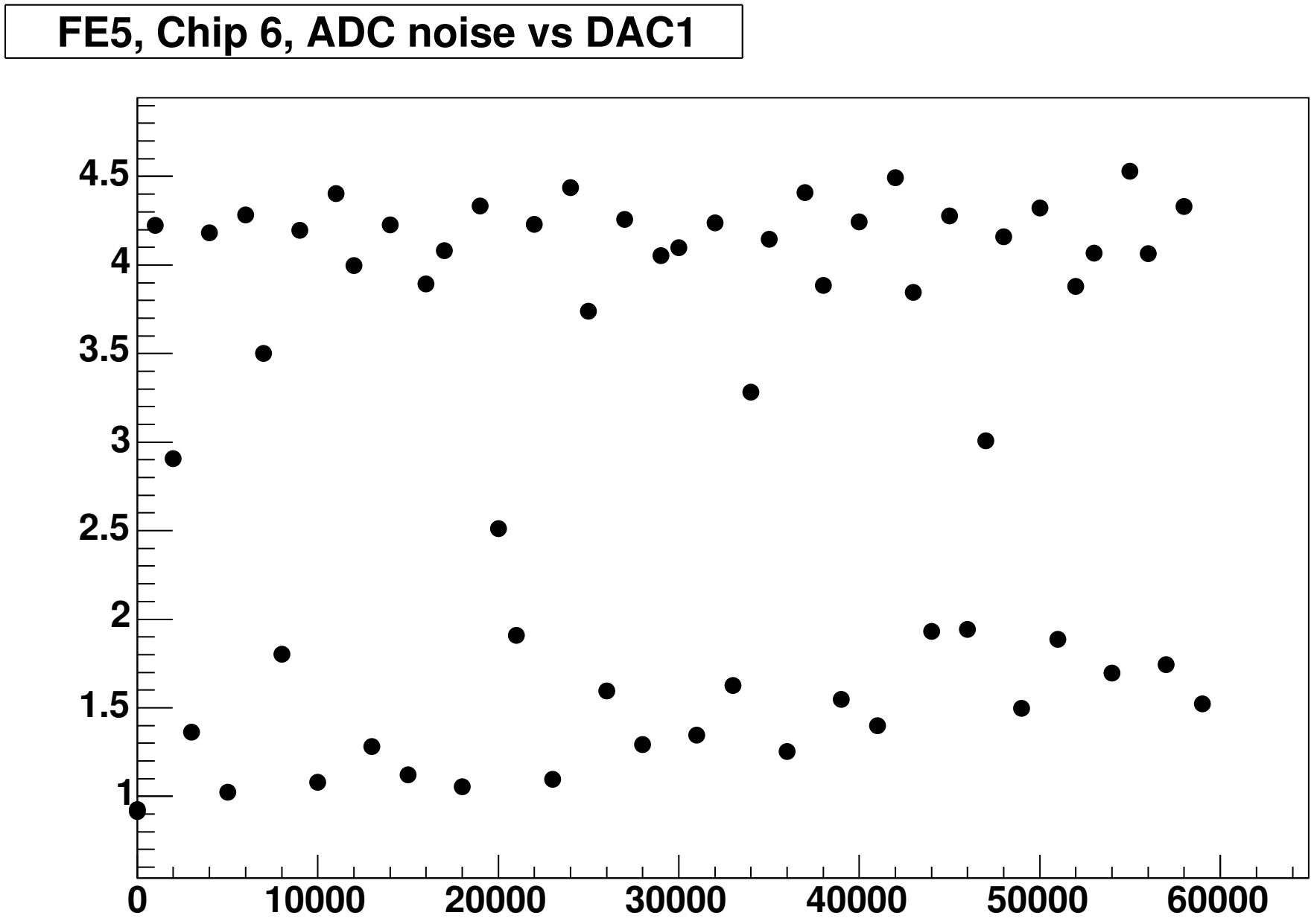

FE5, Chip 5, ADC residuals vs DAC1
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
0
10000
20000
30000
40000
50000
60000

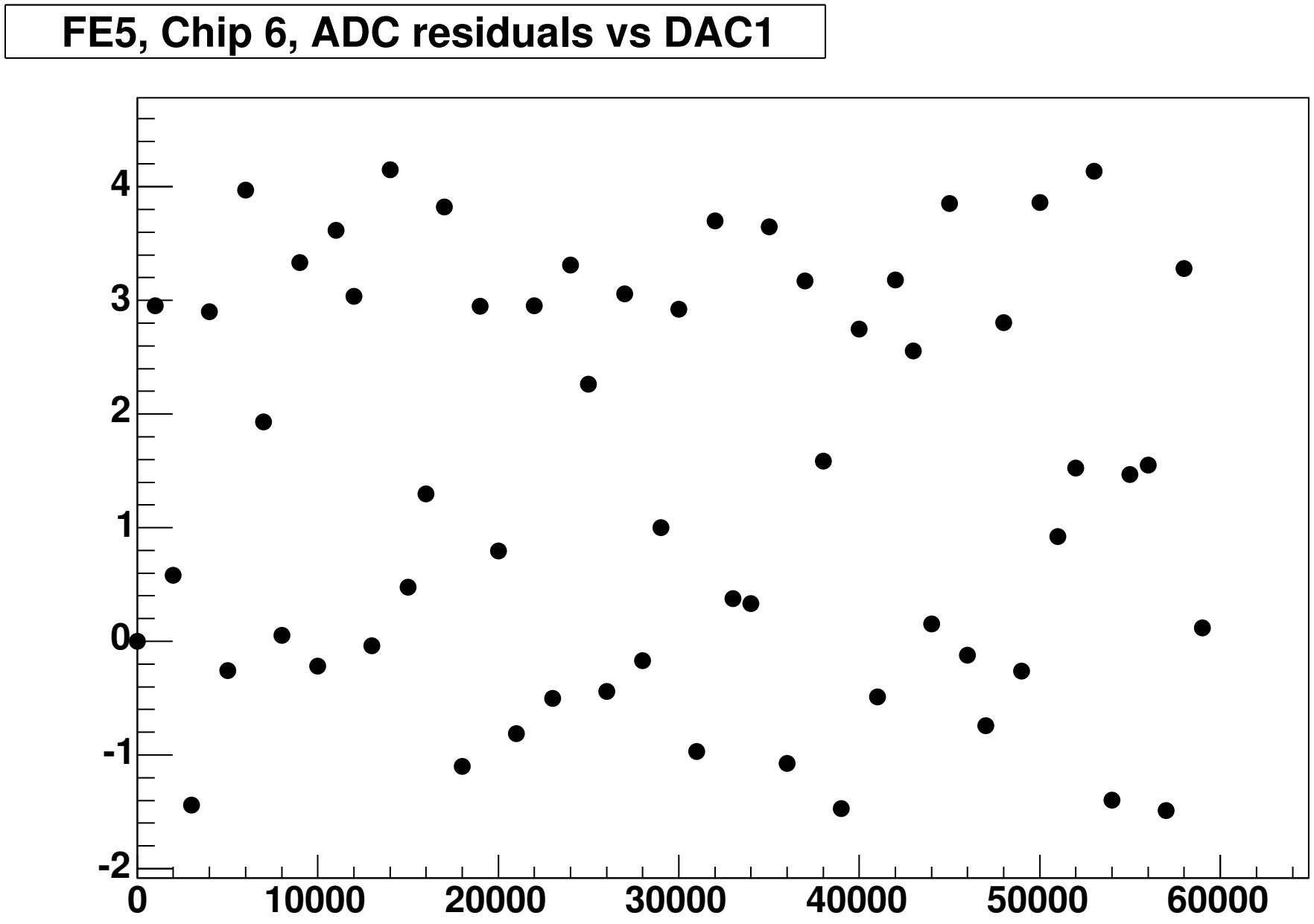

FE5, Chip 6, ADC mean vs DAC0
χ² / ndf 4.067e+04 / 57
p0 138.6 ± 0.00364
p1 2.859e-06 ± 1.067e-07
139.2
139
138.8
138.6
138.4
138.2
138
137.8
0
10000
20000
30000
40000
50000
60000

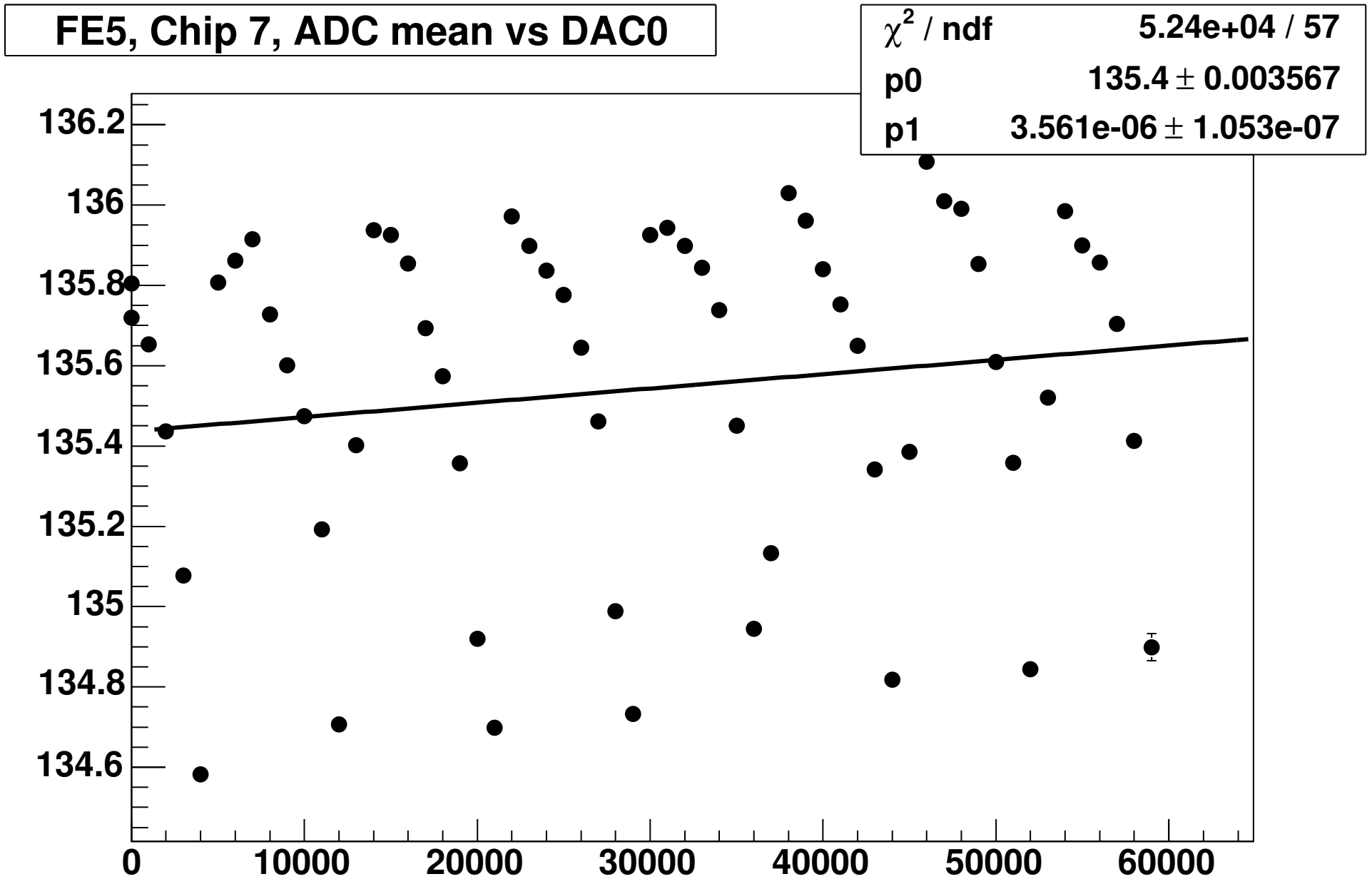

FE5, Chip 6, ADC noise vs DAC0
1.8
1.6
1.4
1.2
1
0.8
0
10000
20000
30000
40000
50000
60000

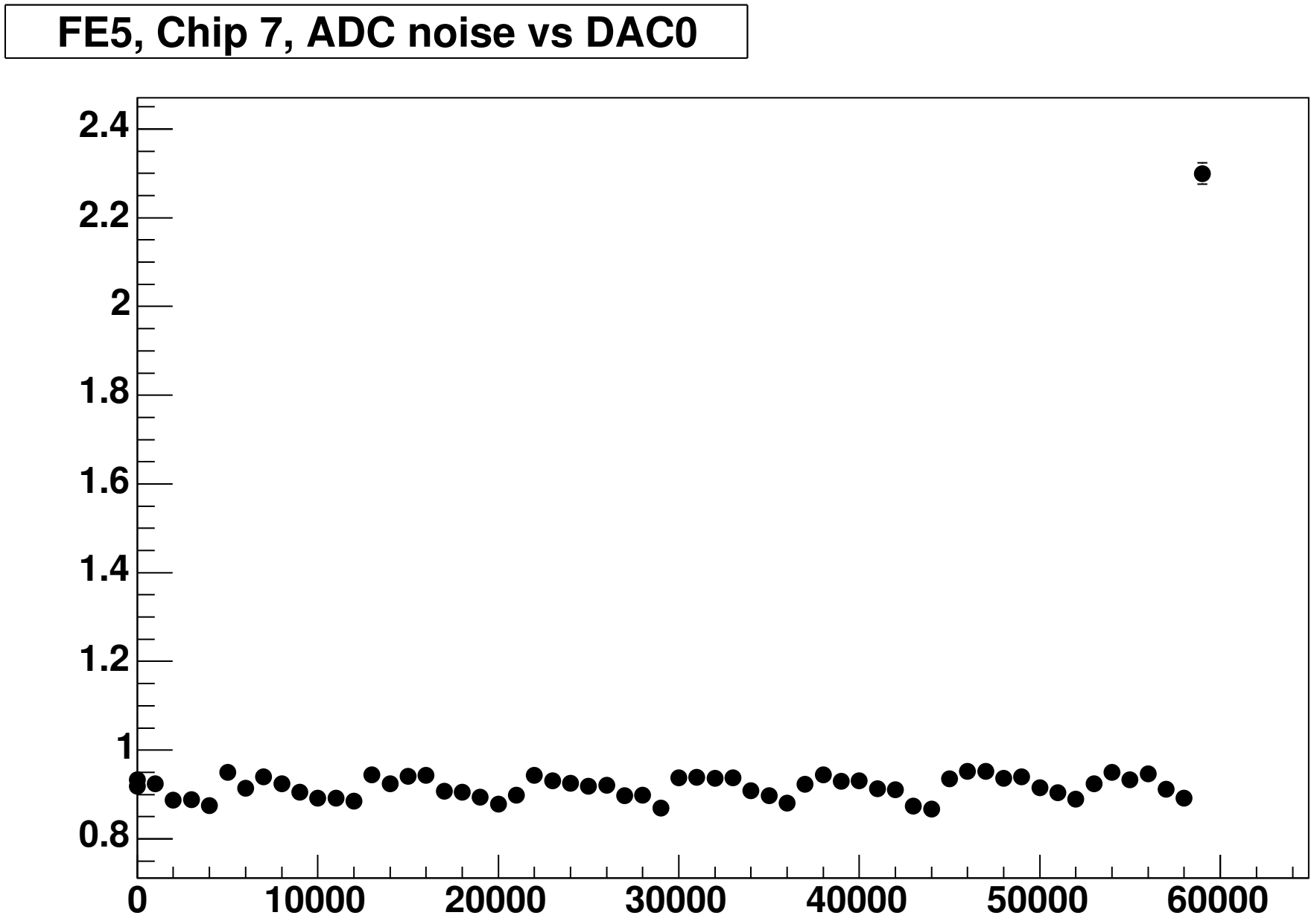

FE5, Chip 6, ADC residuals vs DAC0
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
0
10000
20000
30000
40000
50000
60000

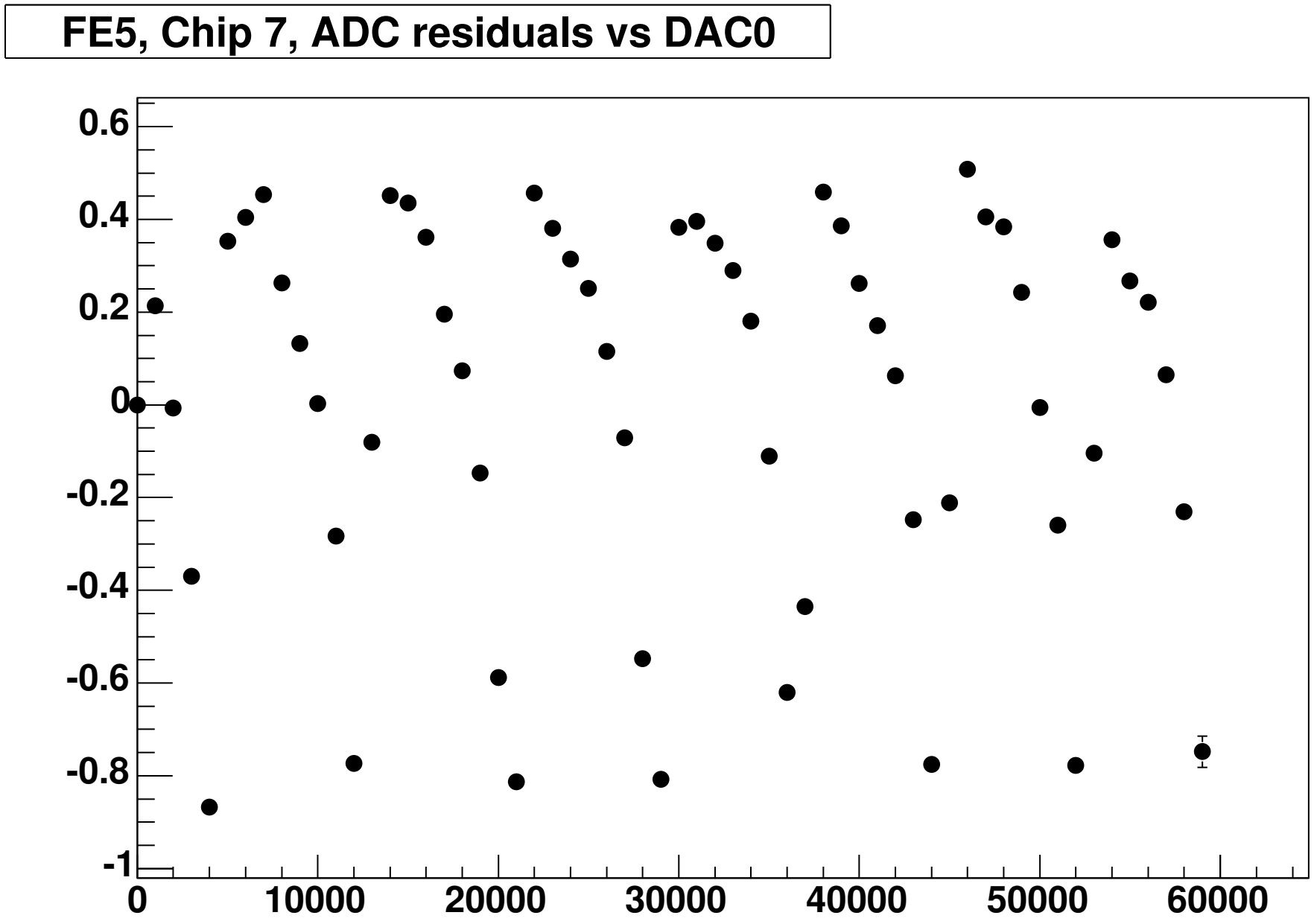

FE5, Chip 6, ADC mean vs DAC1
χ² / ndf 1.098e+05 / 57
p0 -3.567 ± 0.007454
p1 0.2302 ± 2.353e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

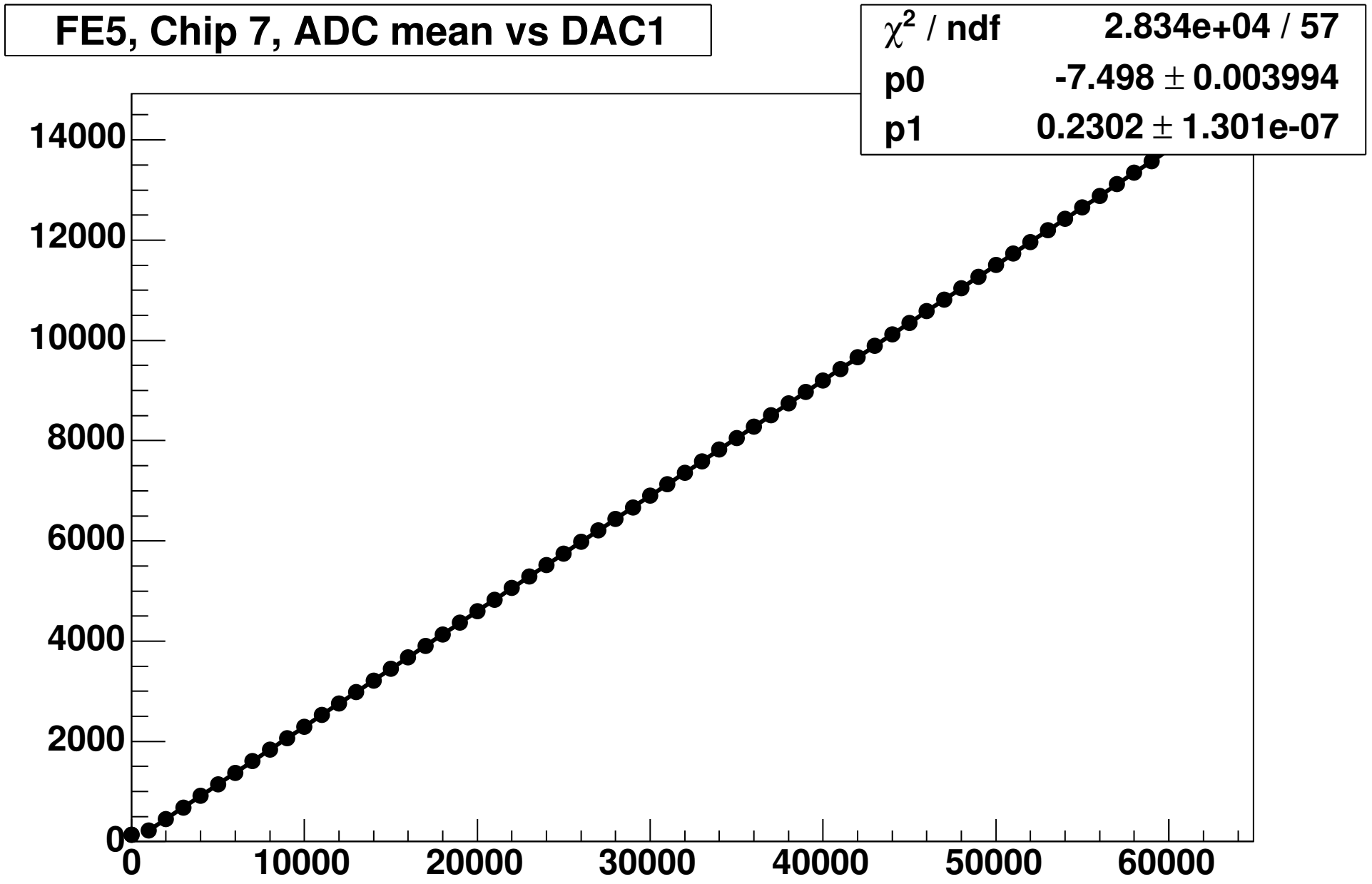

FE5, Chip 6, ADC noise vs DAC1
4.5
4
3.5
3
2.5
2
1.5
1
0
10000
20000
30000
40000
50000
60000

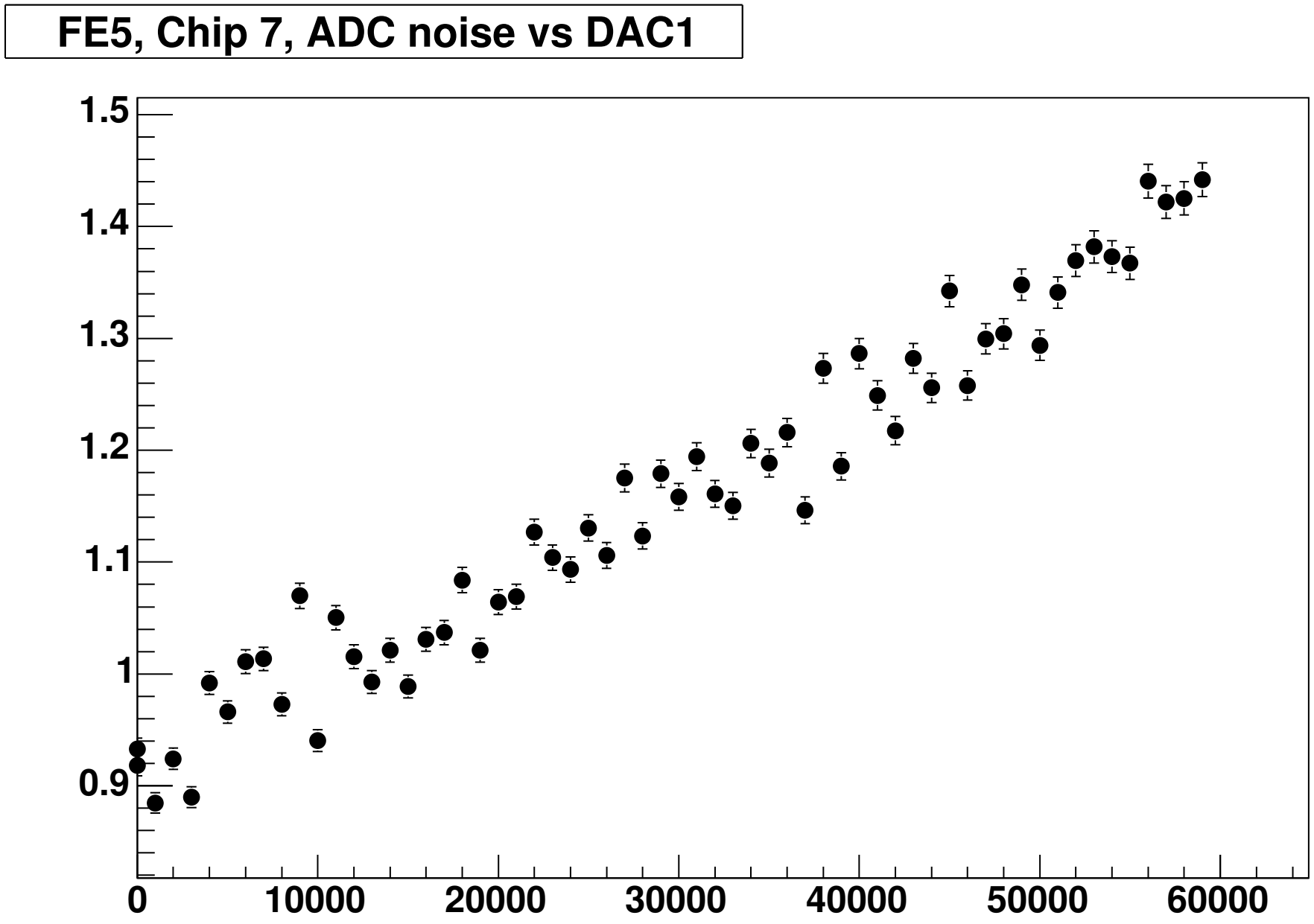

FE5, Chip 6, ADC residuals vs DAC1
4
3
2
1
0
-1
-2
0
10000
20000
30000
40000
50000
60000

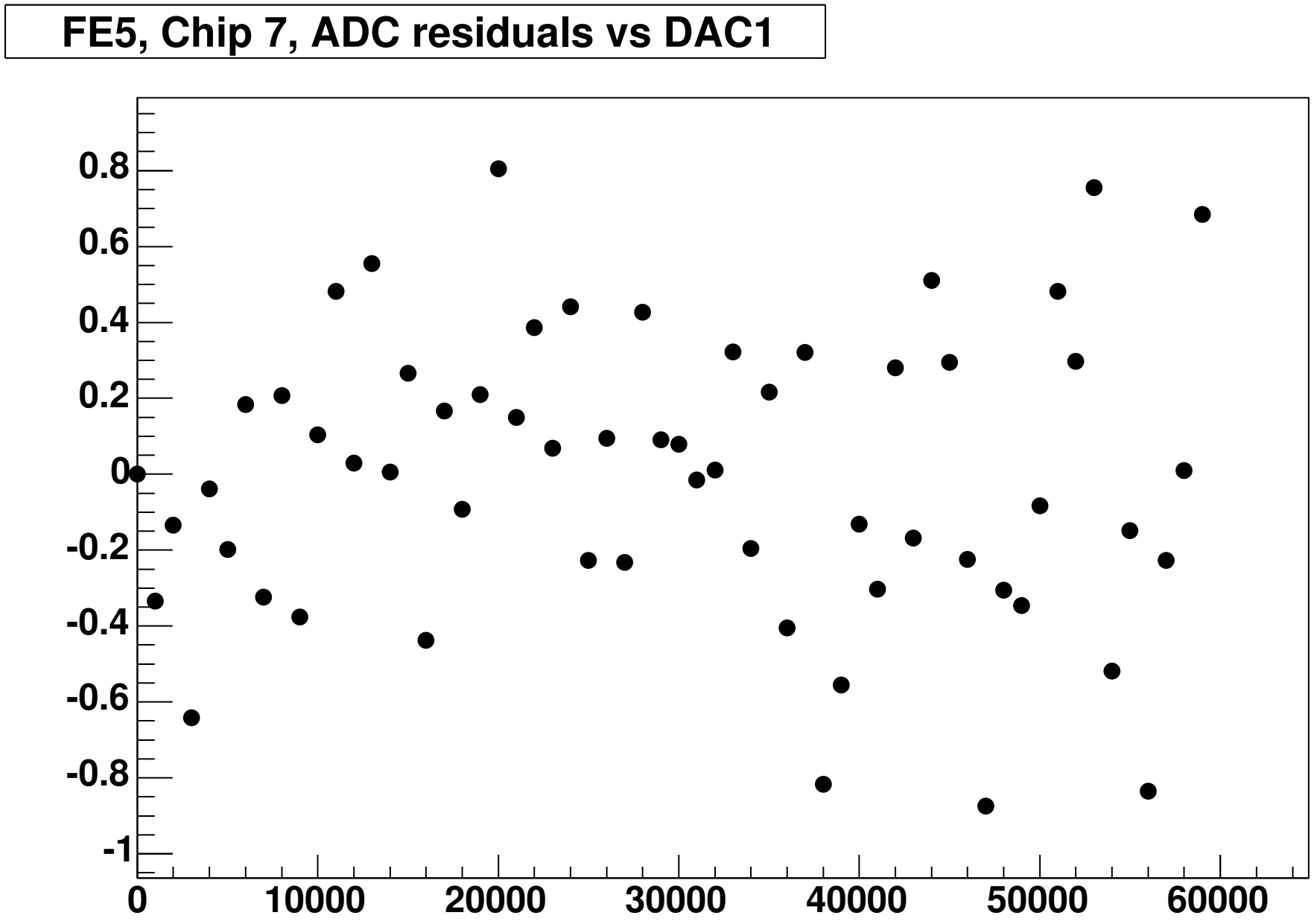

FE5, Chip 7, ADC mean vs DAC0
χ² / ndf 5.24e+04 / 57
p0 135.4 ± 0.003567
p1 3.561e-06 ± 1.053e-07
136.2
136
135.8
135.6
135.4
135.2
135
134.8
134.6
0
10000
20000
30000
40000
50000
60000

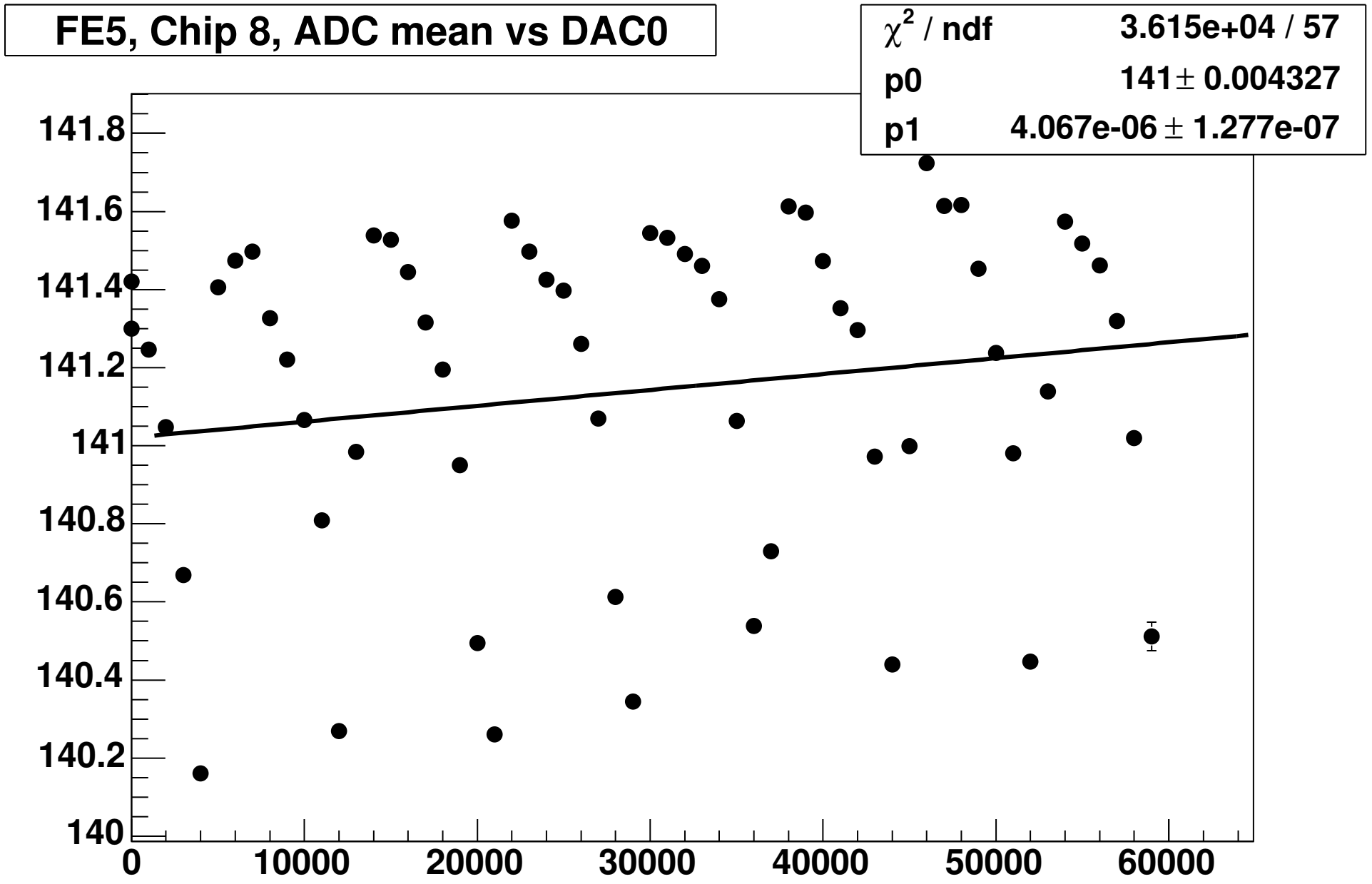

FE5, Chip 7, ADC noise vs DAC0
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0
10000
20000
30000
40000
50000
60000

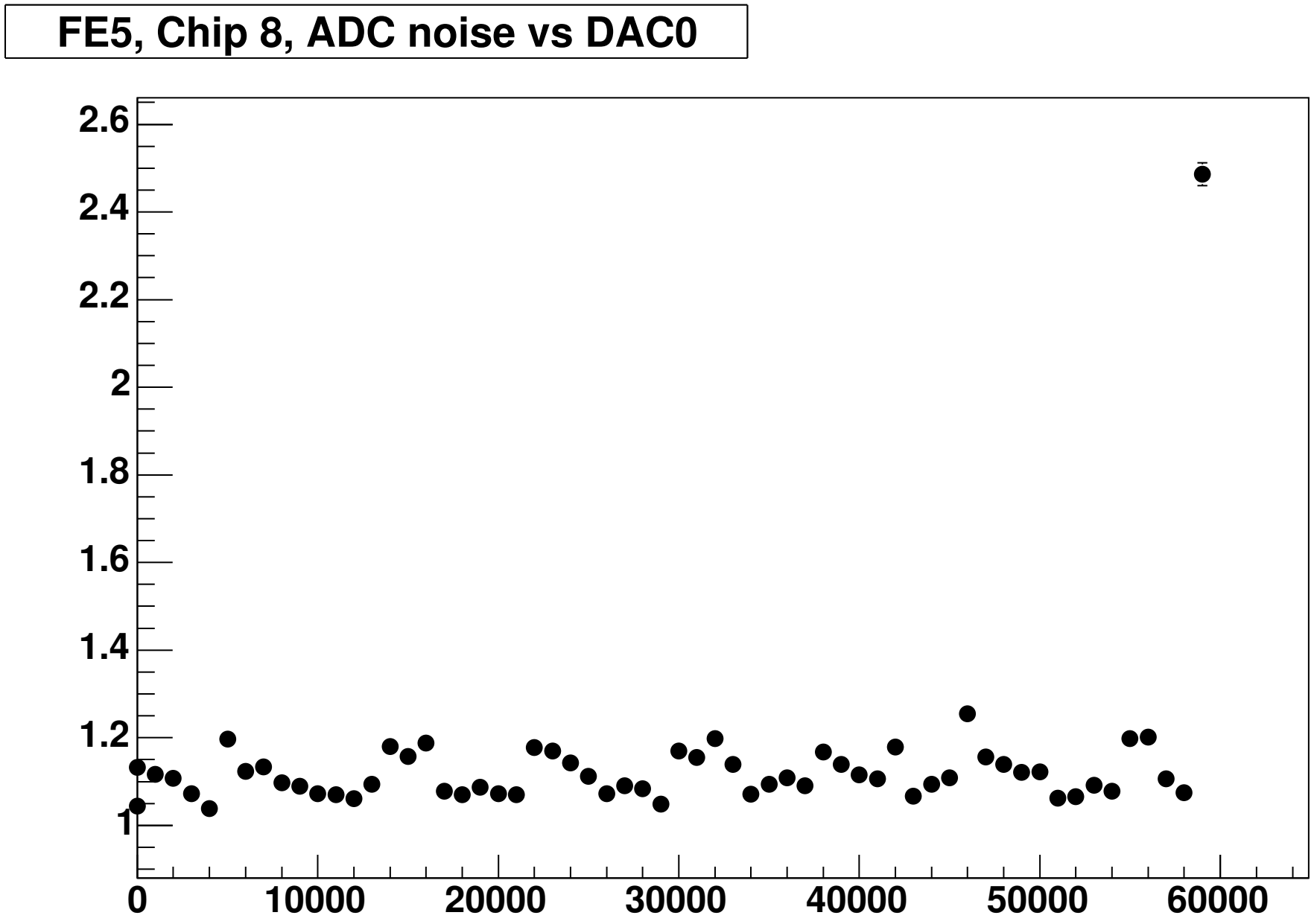

FE5, Chip 7, ADC residuals vs DAC0
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
0
10000
20000
30000
40000
50000
60000

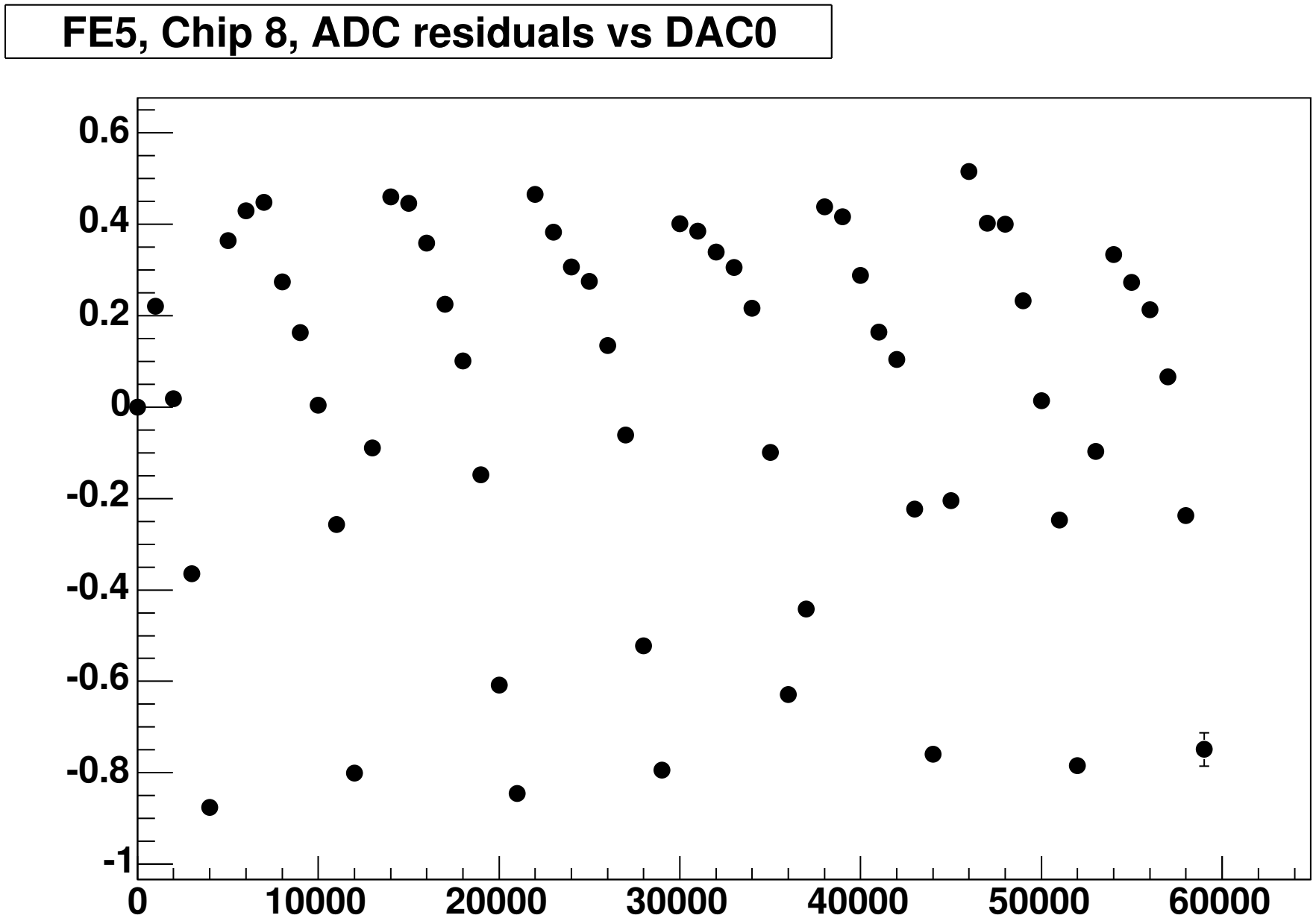

FE5, Chip 7, ADC mean vs DAC1
χ² / ndf 2.834e+04 / 57
p0 -7.498 ± 0.003994
p1 0.2302 ± 1.301e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

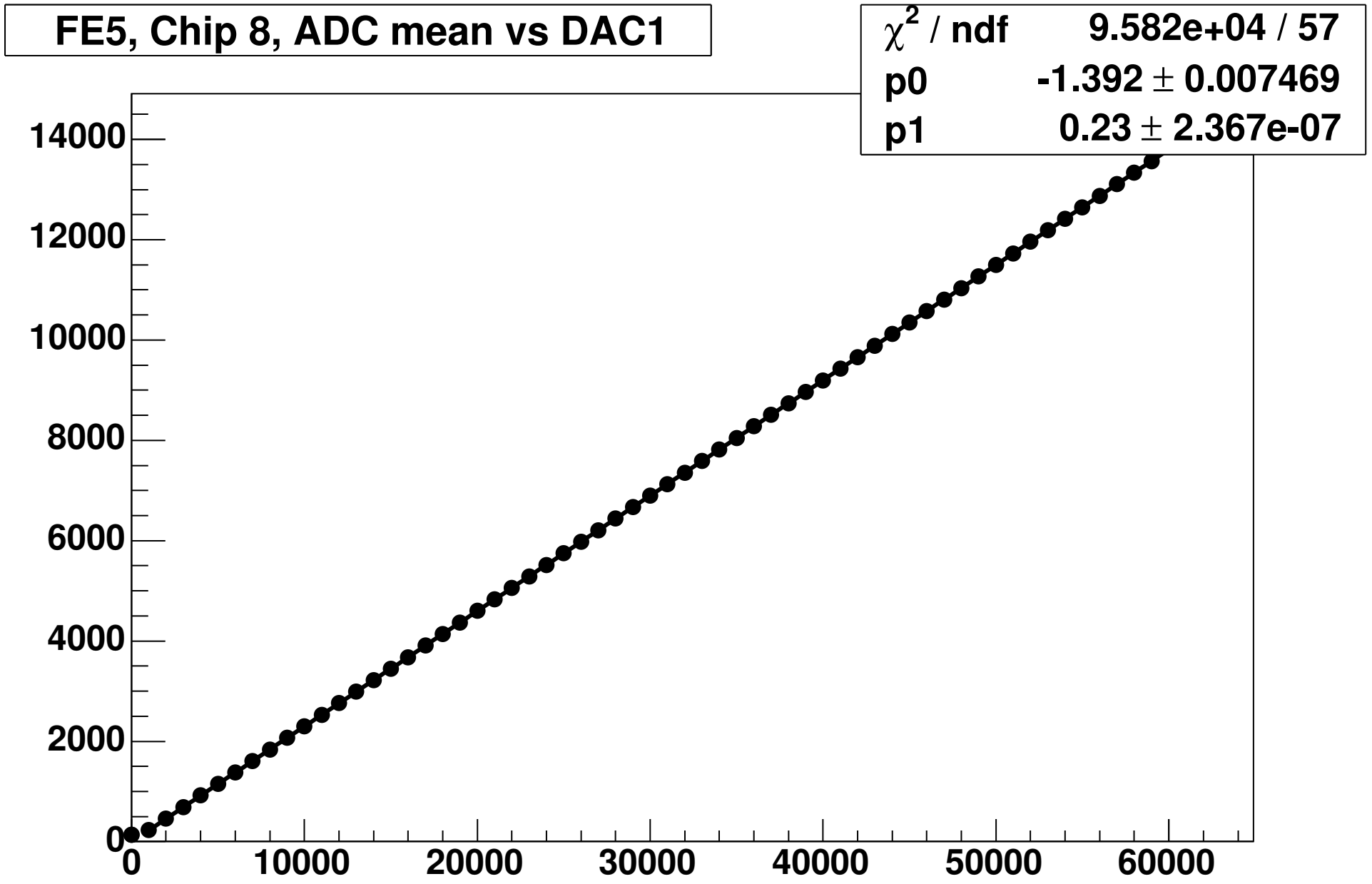

FE5, Chip 7, ADC noise vs DAC1
1.5
1.4
1.3
1.2
1.1
1
0.9
0
10000
20000
30000
40000
50000
60000

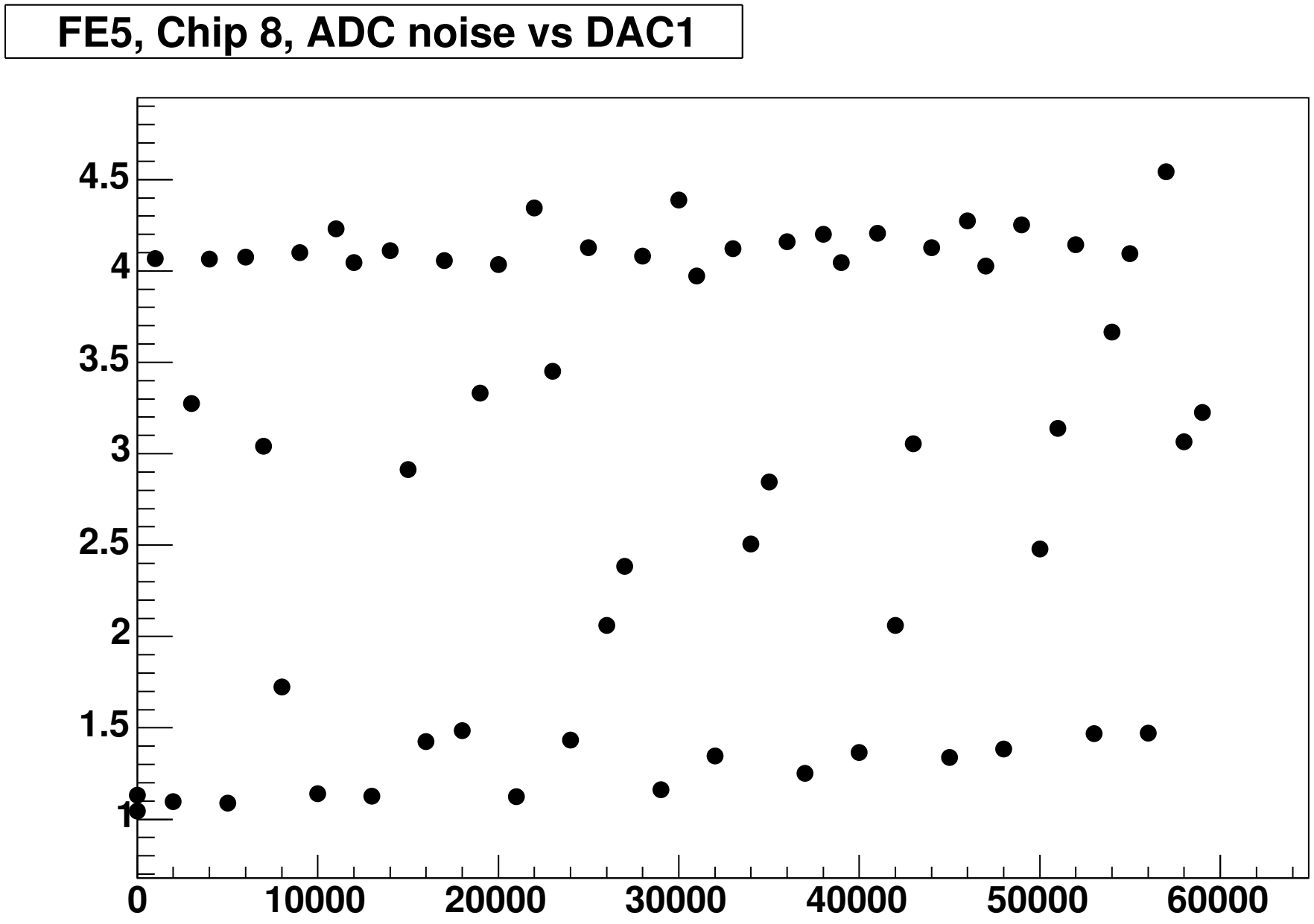

FE5, Chip 7, ADC residuals vs DAC1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
0
10000
20000
30000
40000
50000
60000

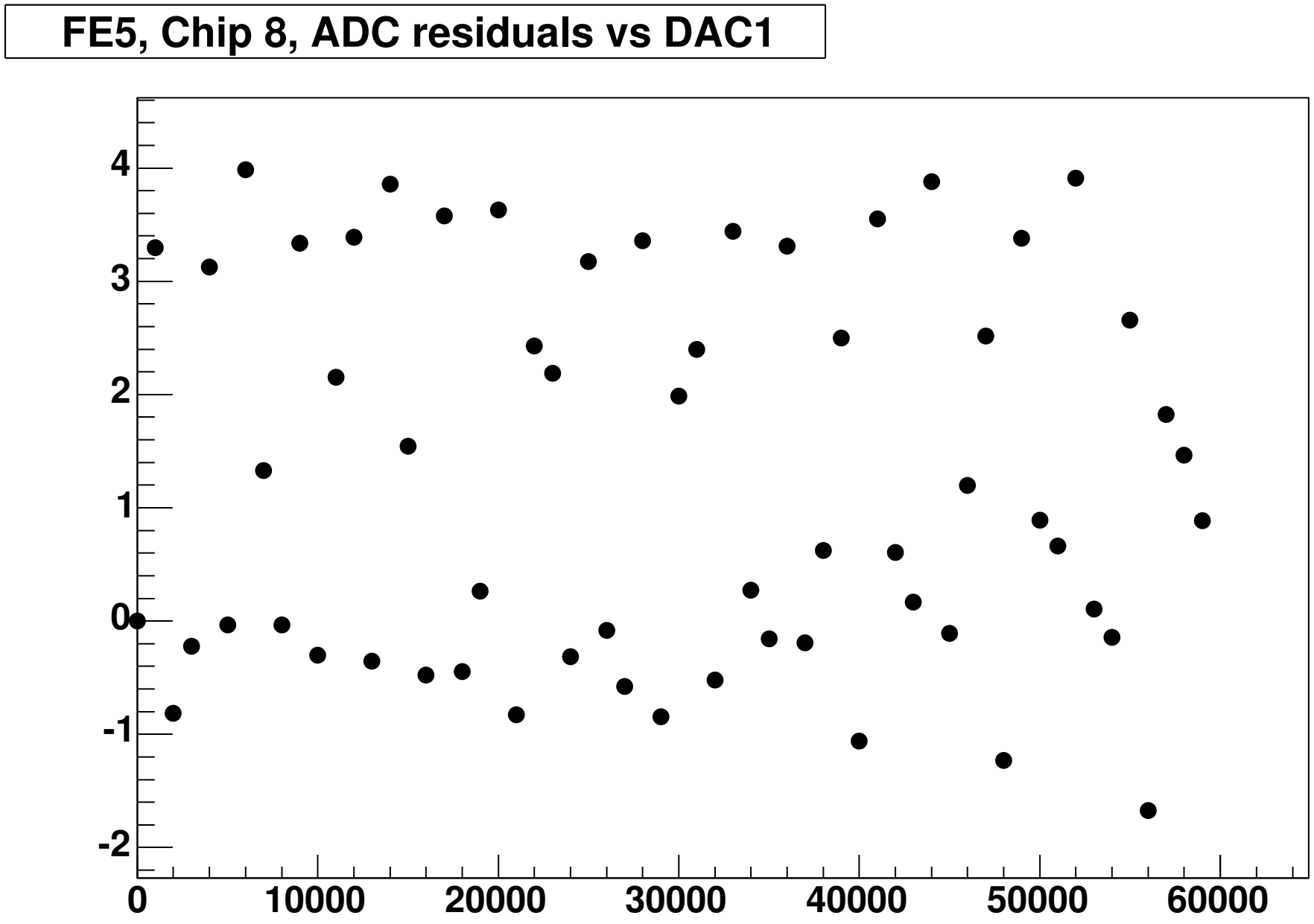

FE5, Chip 8, ADC mean vs DAC0
χ² / ndf 3.615e+04 / 57
p0 141 ± 0.004327
p1 4.067e-06 ± 1.277e-07
141.8
141.6
141.4
141.2
141
140.8
140.6
140.4
140.2
140
0
10000
20000
30000
40000
50000
60000

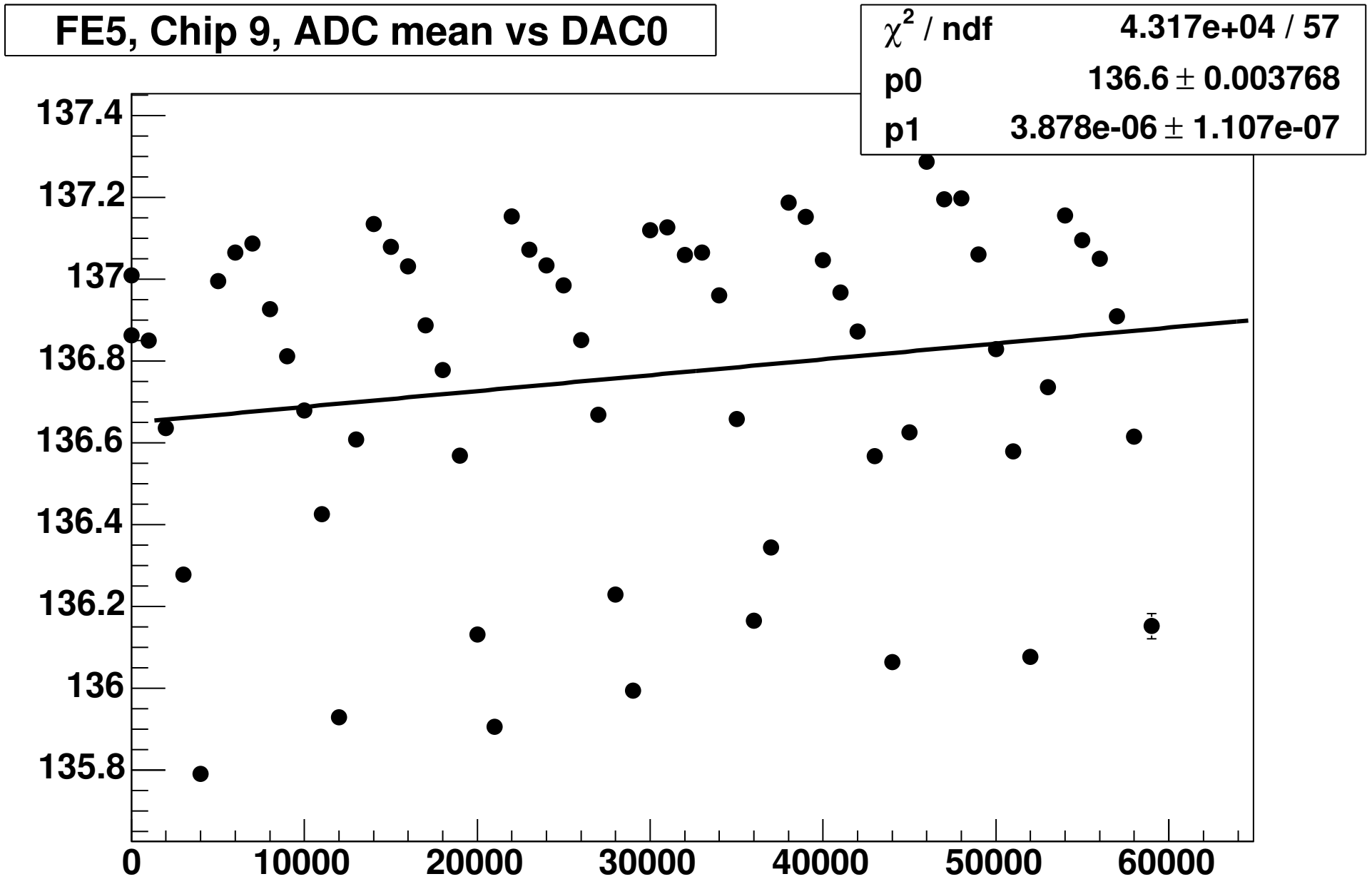

FE5, Chip 8, ADC noise vs DAC0
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0
10000
20000
30000
40000
50000
60000

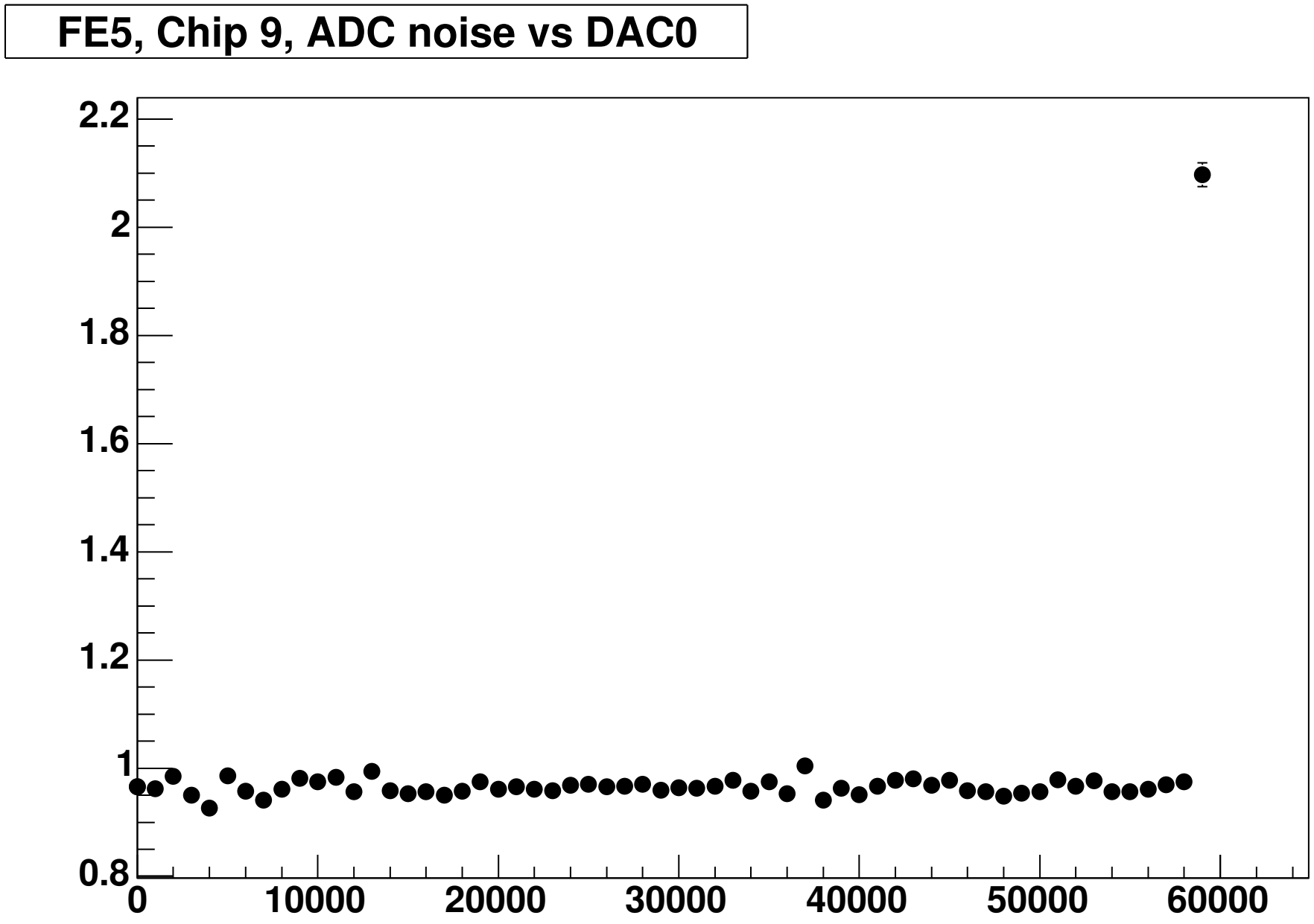

FE5, Chip 8, ADC residuals vs DAC0
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
0
10000
20000
30000
40000
50000
60000

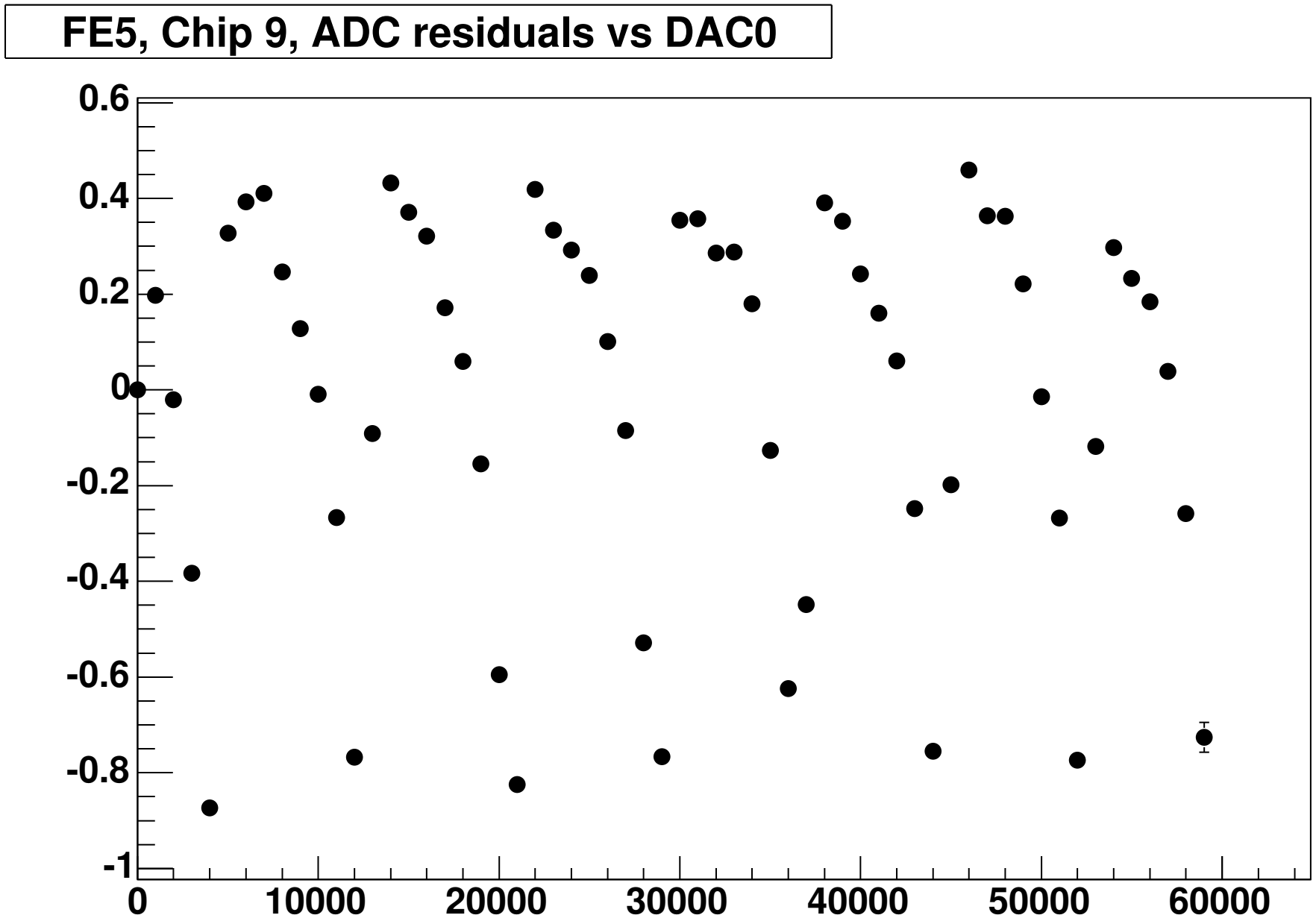

FE5, Chip 8, ADC mean vs DAC1
χ^2 / ndf 9.582e+04 / 57
p0 -1.392 ± 0.007469
p1 0.23 ± 2.367e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

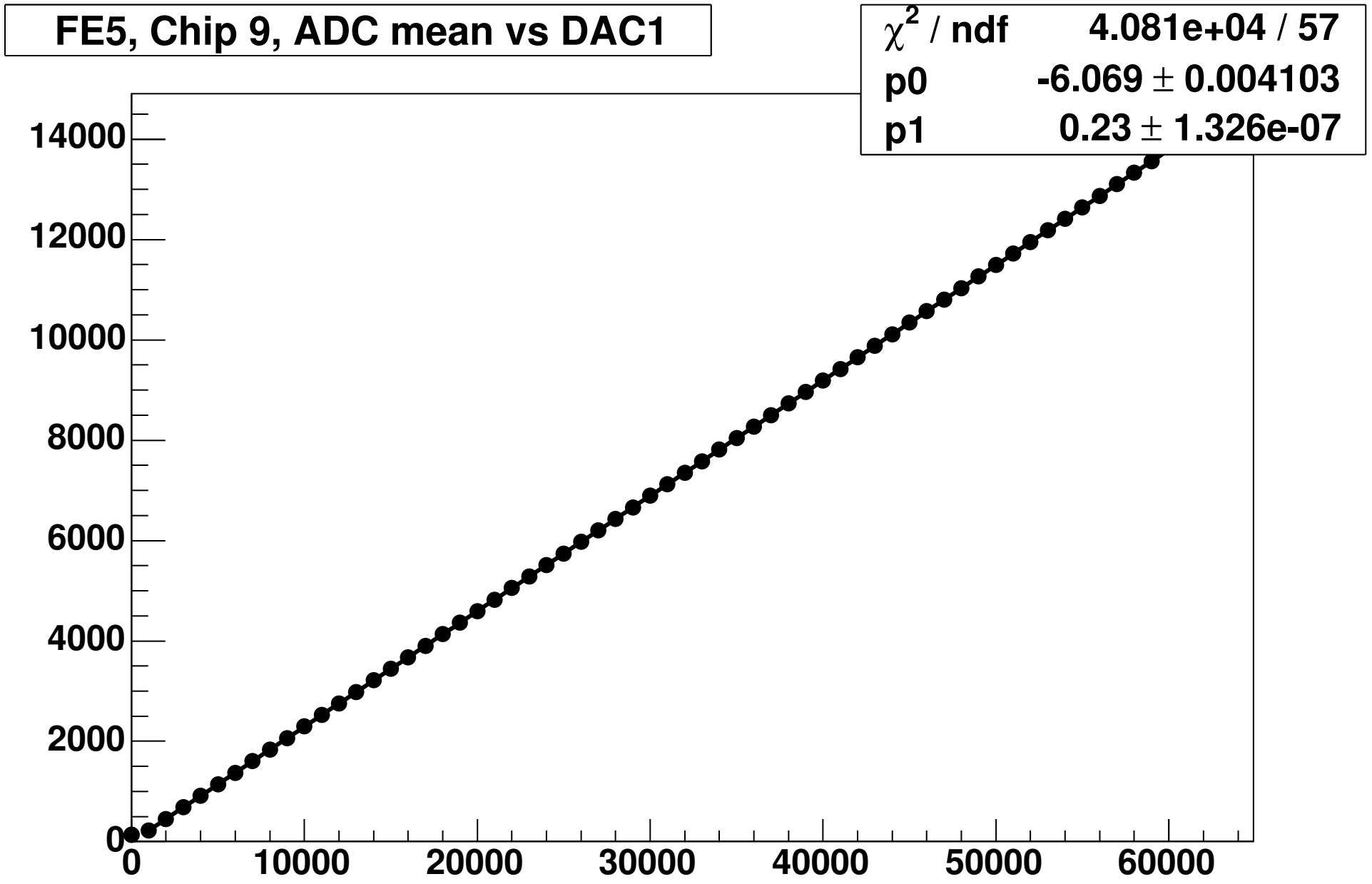

FE5, Chip 8, ADC noise vs DAC1
4.5
4
3.5
3
2.5
2
1.5
1
0
10000
20000
30000
40000
50000
60000

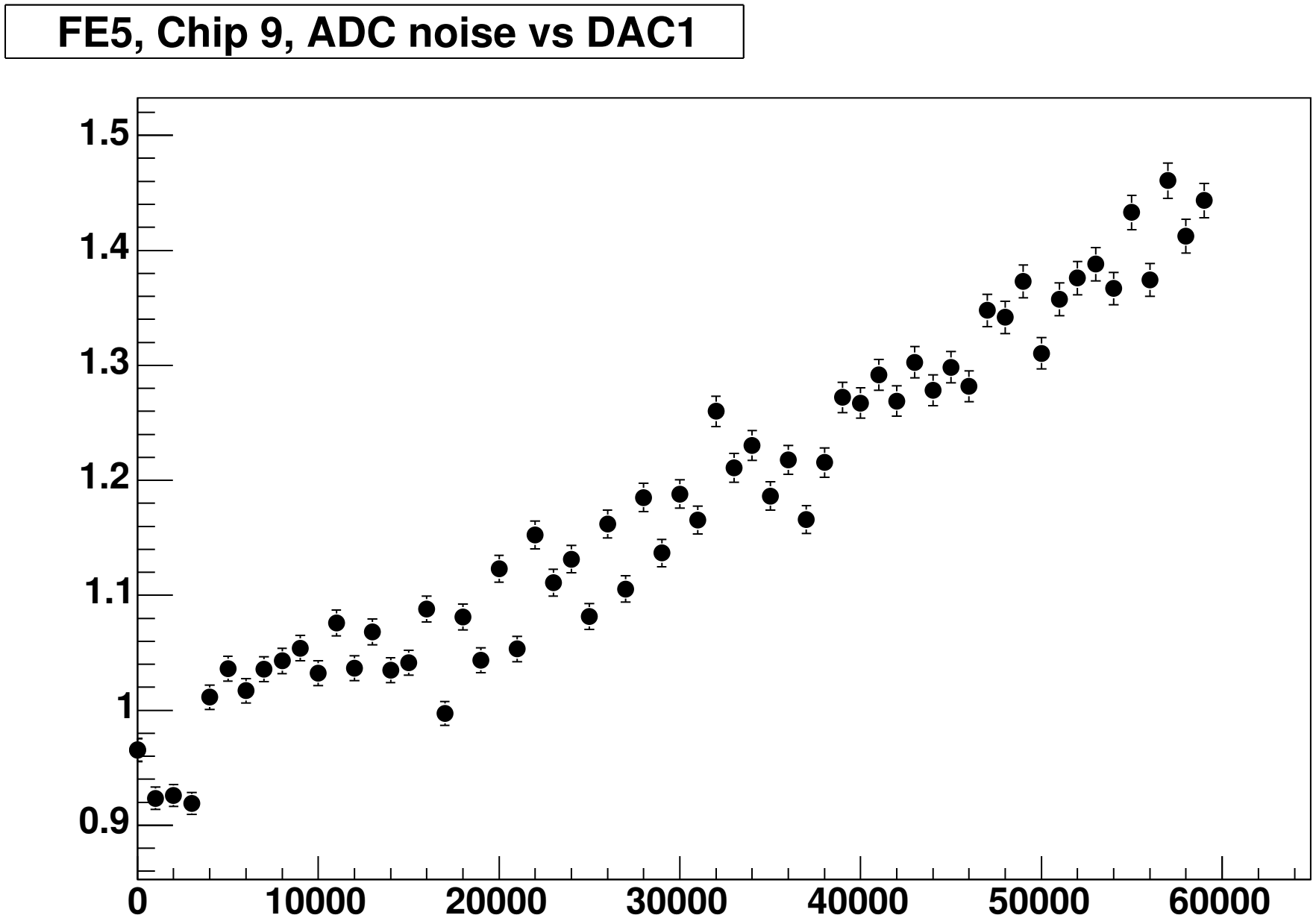

FE5, Chip 8, ADC residuals vs DAC1
4
3
2
1
0
-1
-2
0
10000
20000
30000
40000
50000
60000

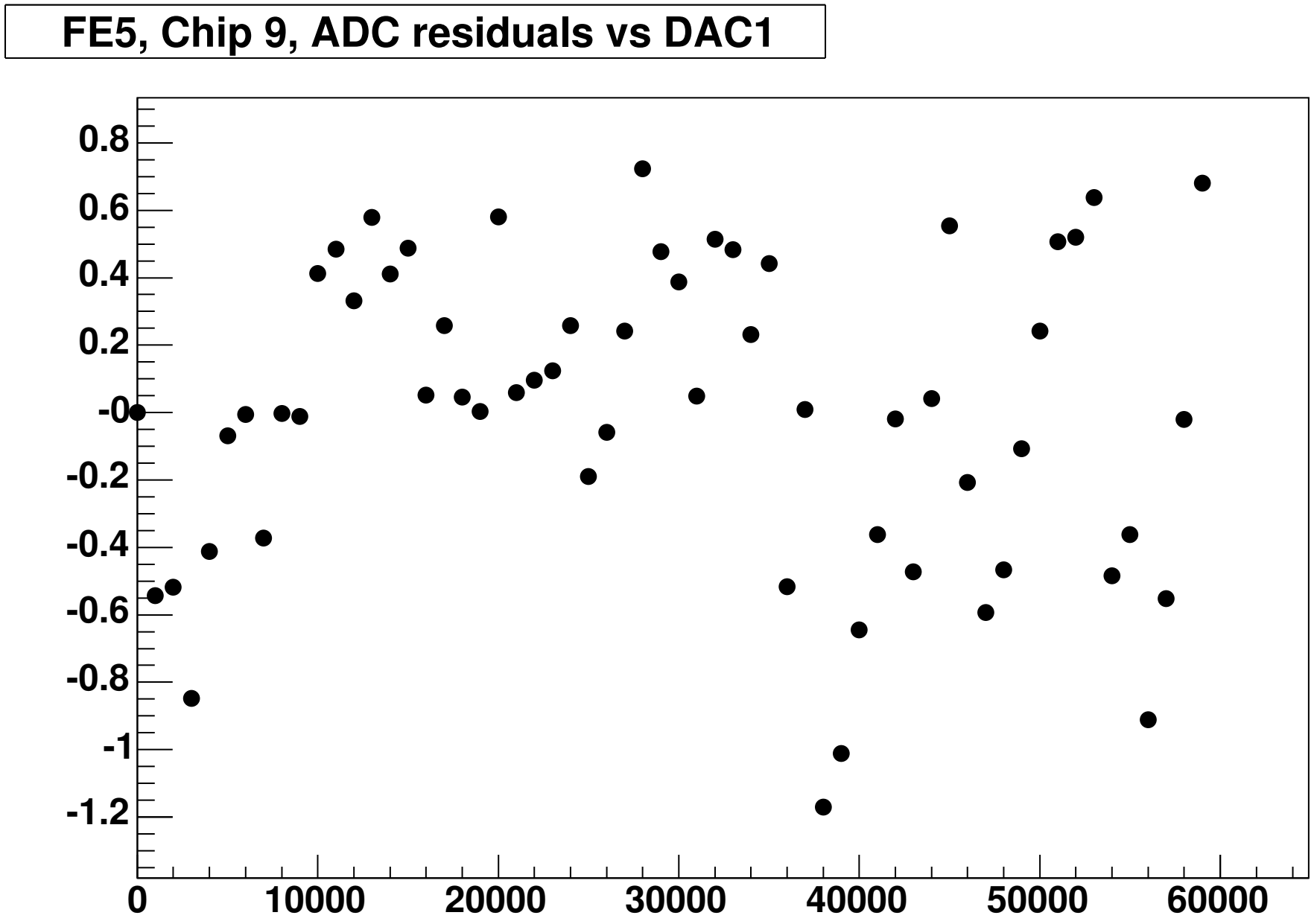

FE5, Chip 9, ADC mean vs DAC0
χ² / ndf 4.317e+04 / 57
p0 136.6 ± 0.003768
p1 3.878e-06 ± 1.107e-07
137.4
137.2
137
136.8
136.6
136.4
136.2
136
135.8
0
10000
20000
30000
40000
50000
60000

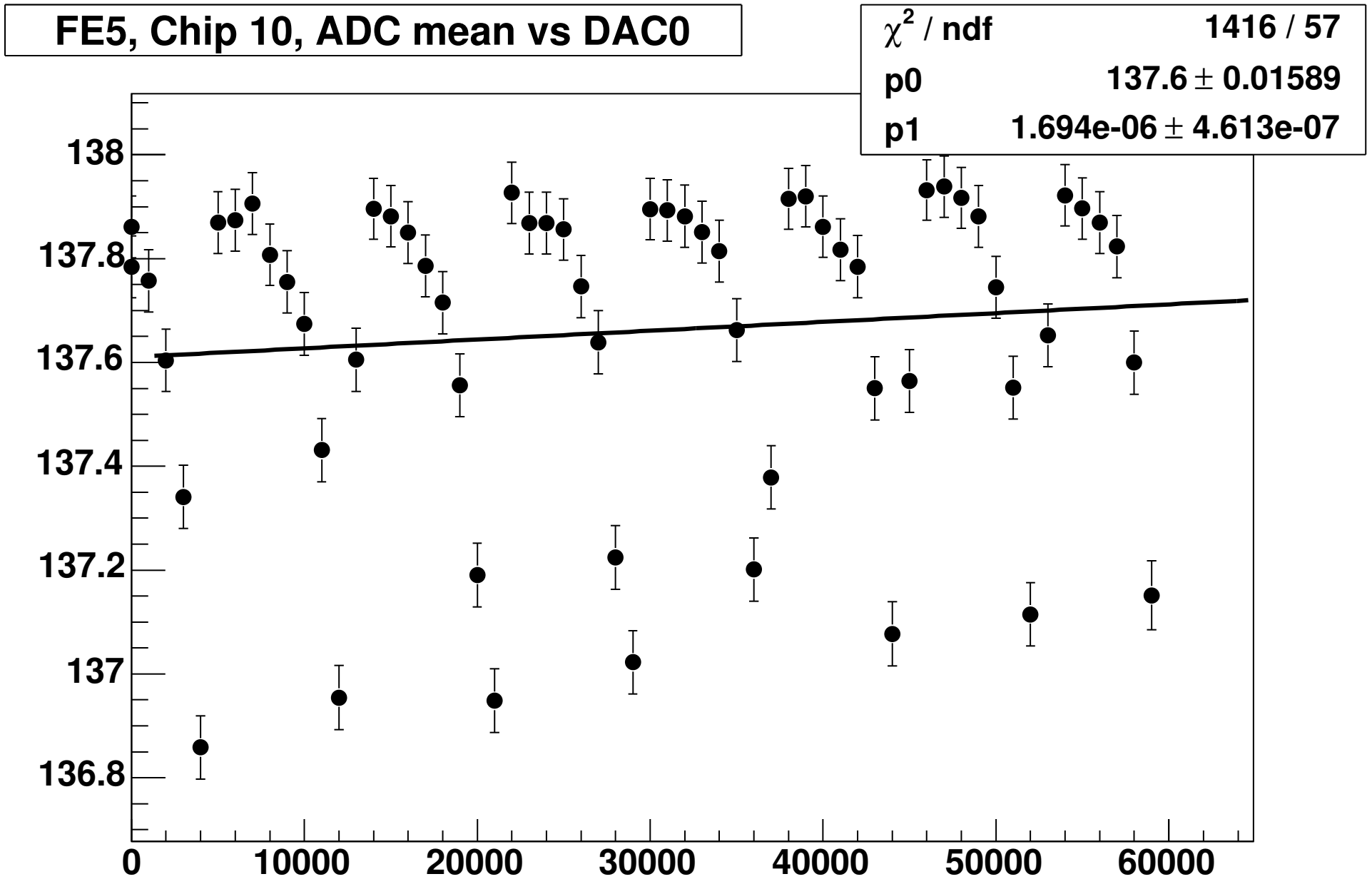

FE5, Chip 9, ADC noise vs DAC0
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0
10000
20000
30000
40000
50000
60000

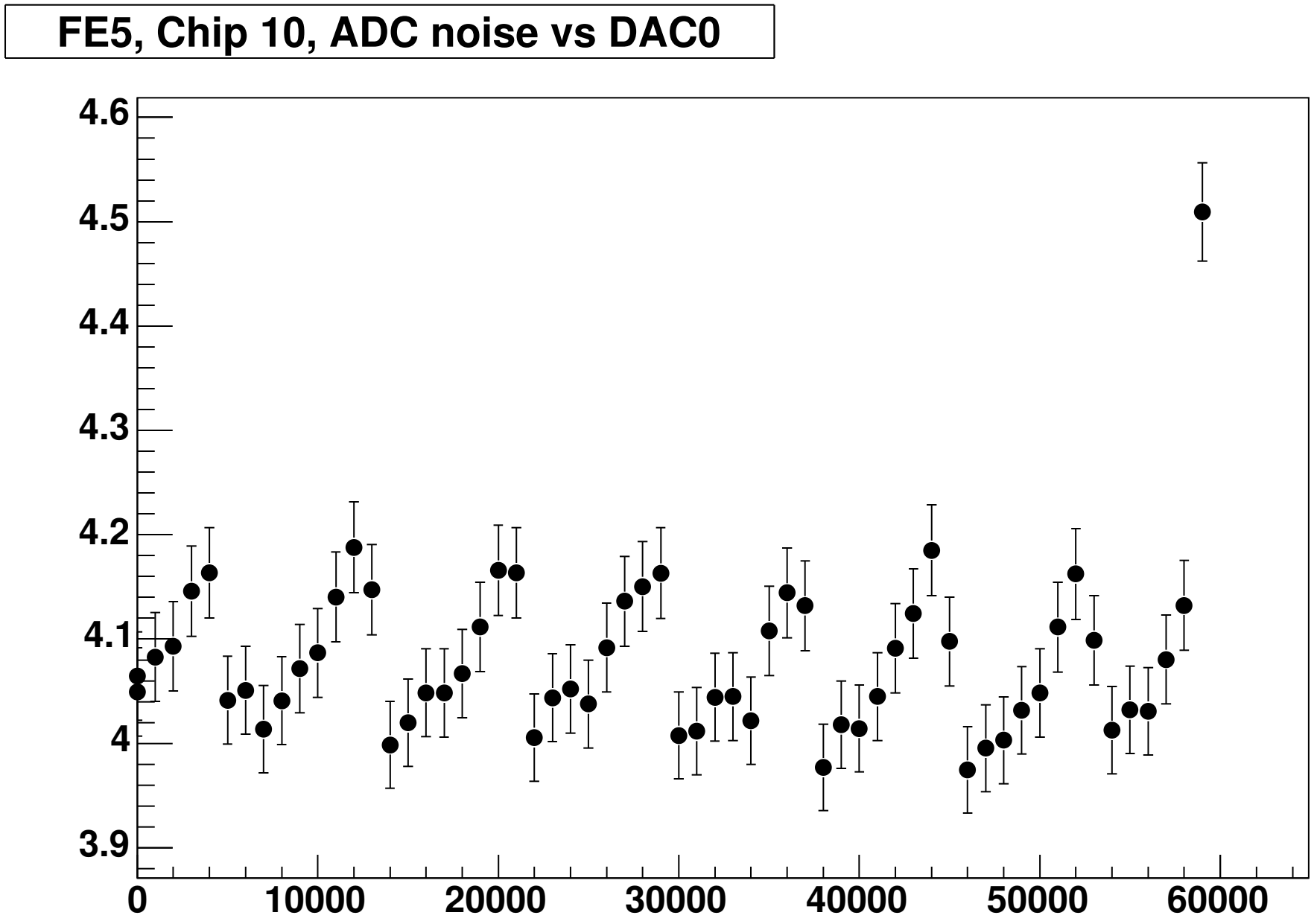

FE5, Chip 9, ADC residuals vs DAC0
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
0
10000
20000
30000
40000
50000
60000

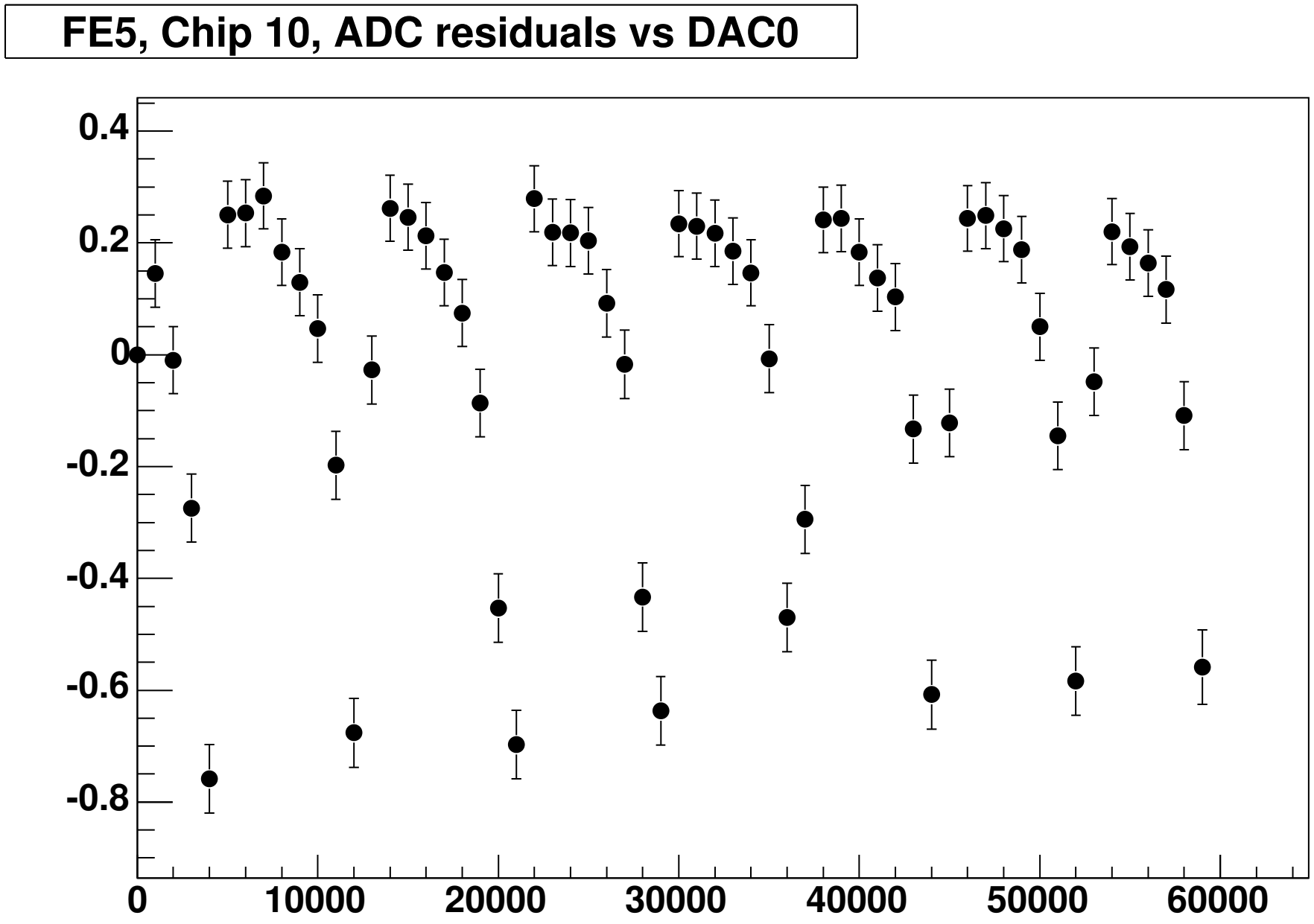

FE5, Chip 9, ADC mean vs DAC1
χ² / ndf 4.081e+04 / 57
p0 -6.069 ± 0.004103
p1 0.23 ± 1.326e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

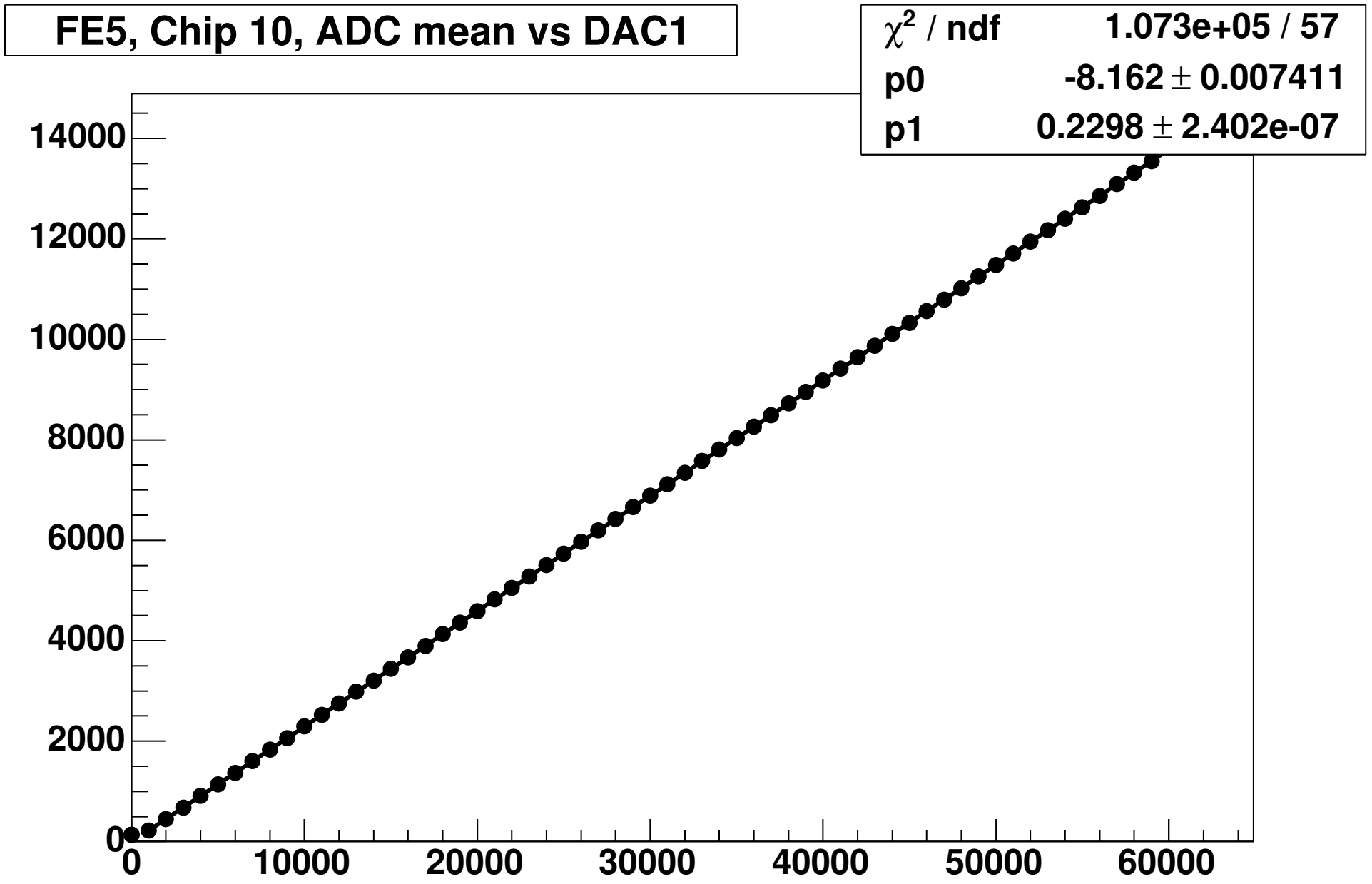

FE5, Chip 9, ADC noise vs DAC1
1.5
1.4
1.3
1.2
1.1
1
0.9
0
10000
20000
30000
40000
50000
60000

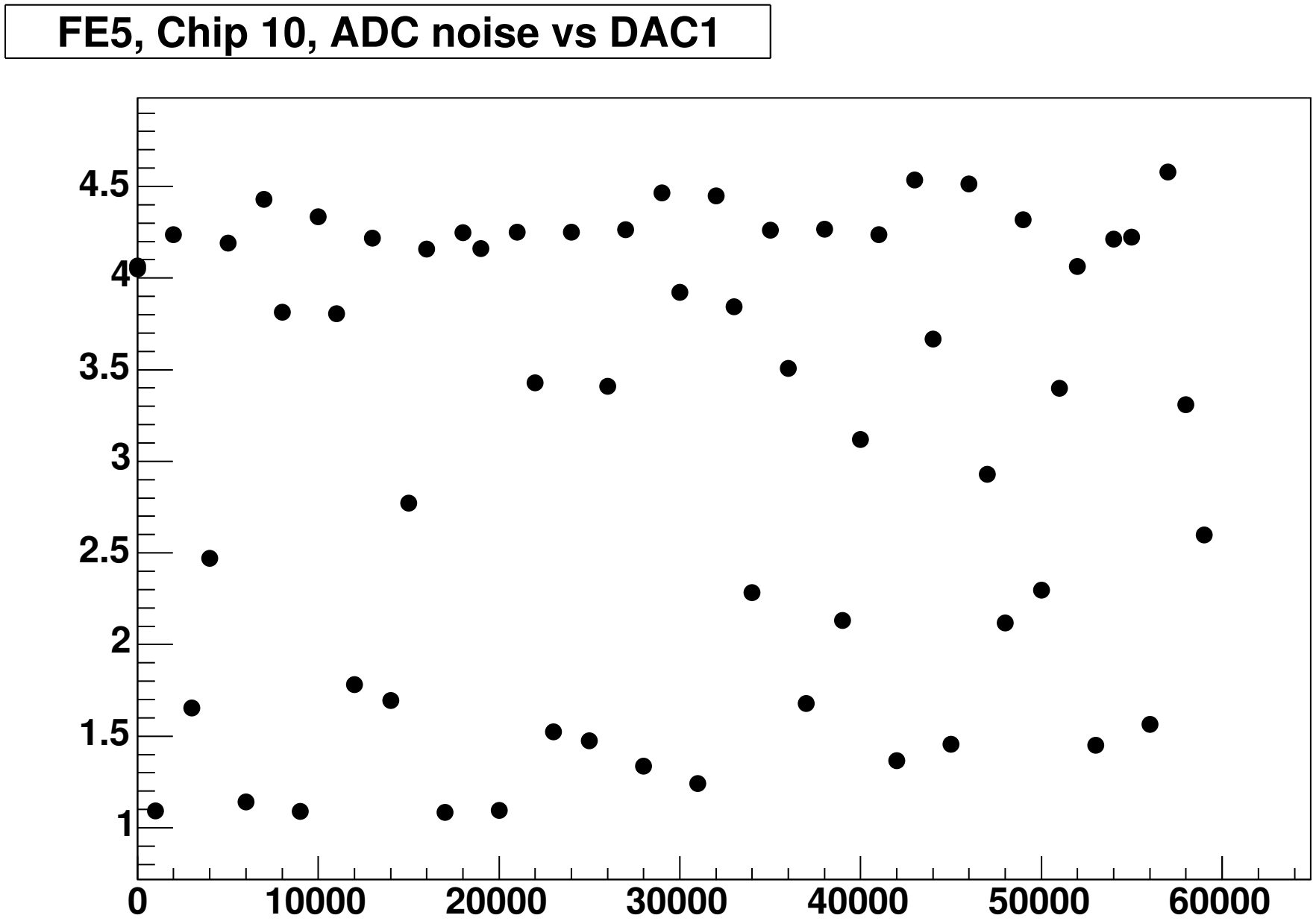

FE5, Chip 9, ADC residuals vs DAC1
0.8
0.6
0.4
0.2
-0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
0
10000
20000
30000
40000
50000
60000

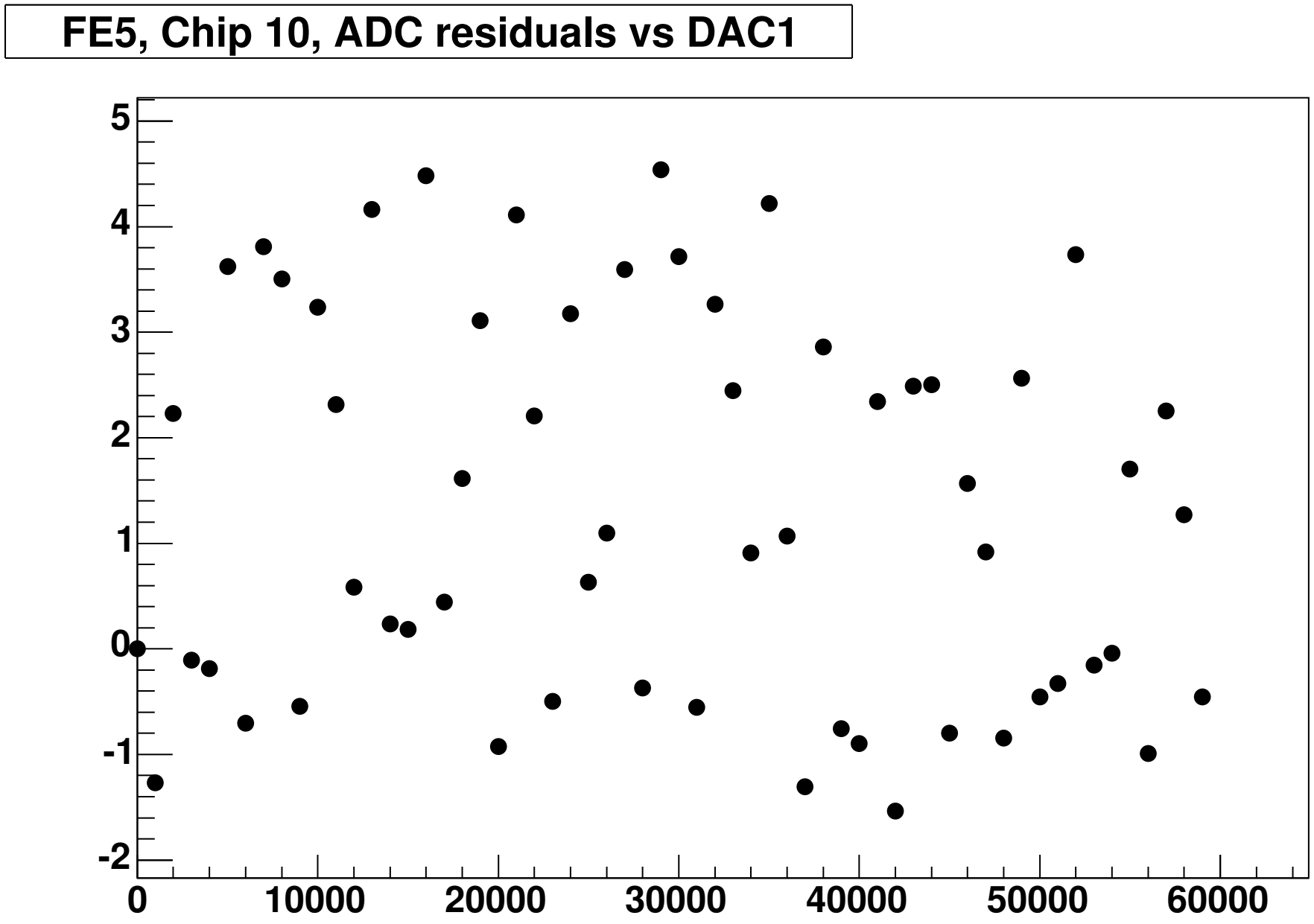

FE5, Chip 10, ADC mean vs DAC0
χ² / ndf 1416 / 57
p0 137.6 ± 0.01589
p1 1.694e-06 ± 4.613e-07
138
137.8
137.6
137.4
137.2
137
136.8
0
10000
20000
30000
40000
50000
60000

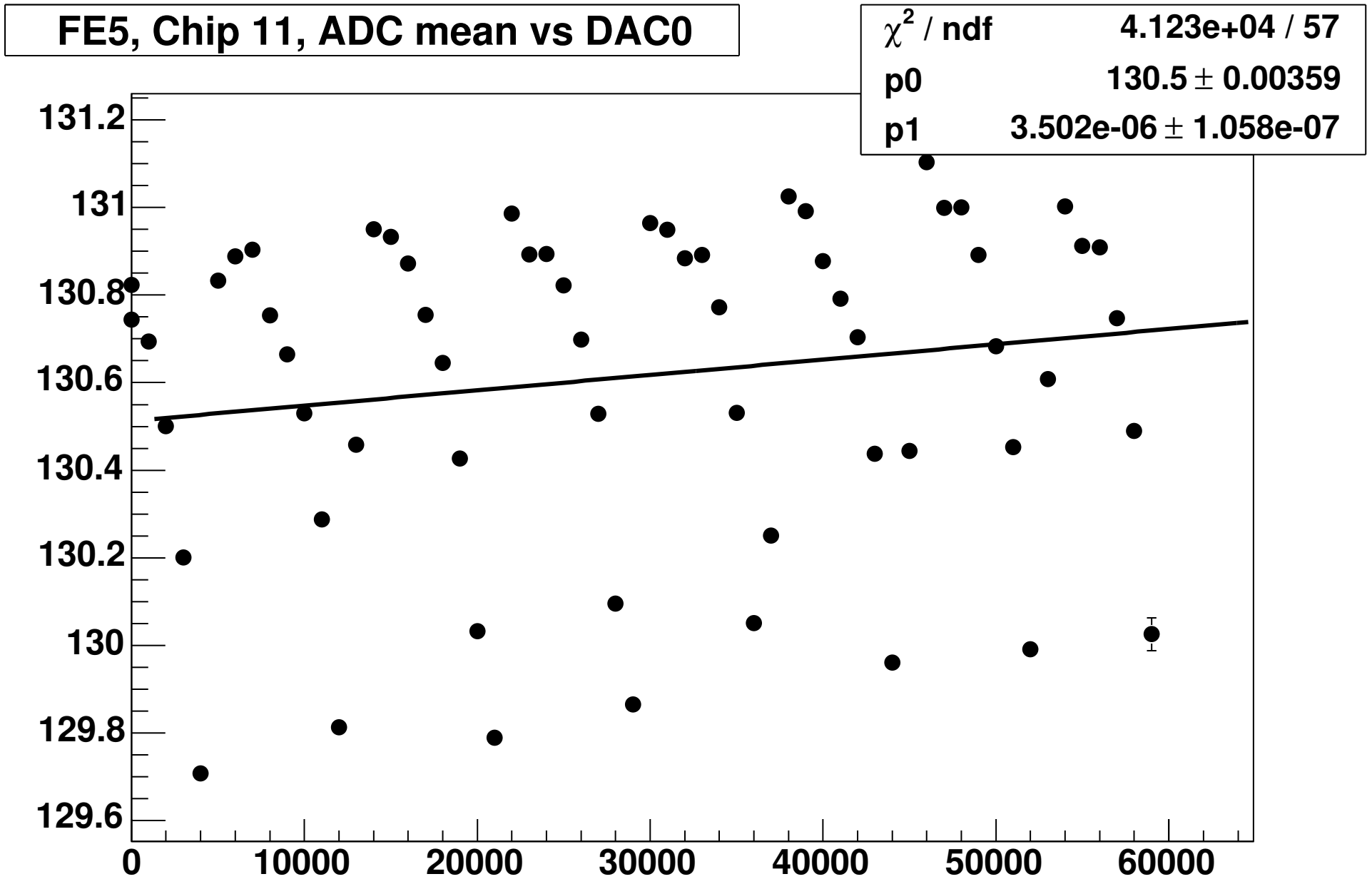

FE5, Chip 10, ADC noise vs DAC0
4.6
4.5
4.4
4.3
4.2
4.1
4
3.9
0
10000
20000
30000
40000
50000
60000

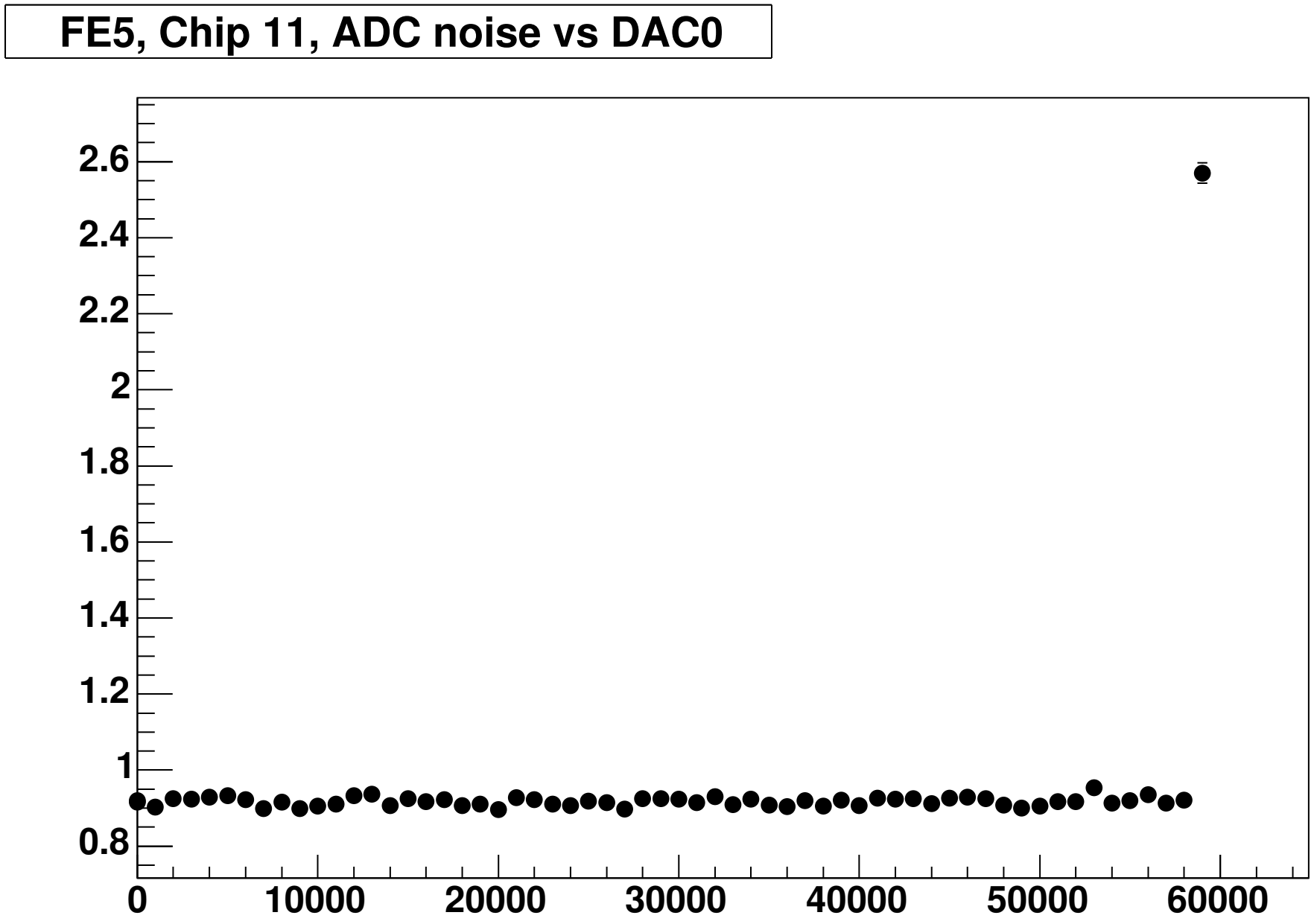

FE5, Chip 10, ADC residuals vs DAC0
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
0
10000
20000
30000
40000
50000
60000

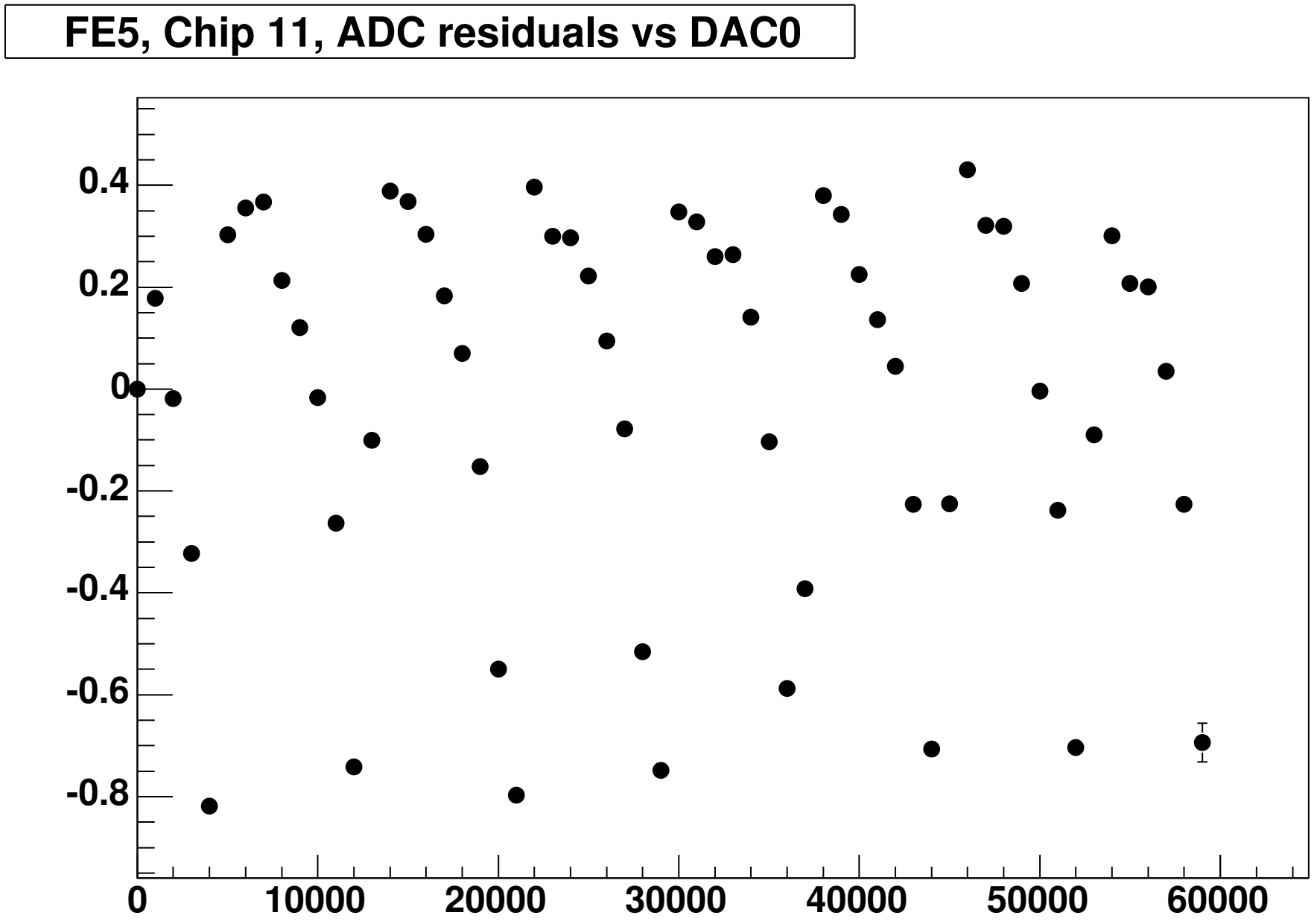

FE5, Chip 10, ADC mean vs DAC1
χ² / ndf 1.073e+05 / 57
p0 -8.162 ± 0.007411
p1 0.2298 ± 2.402e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

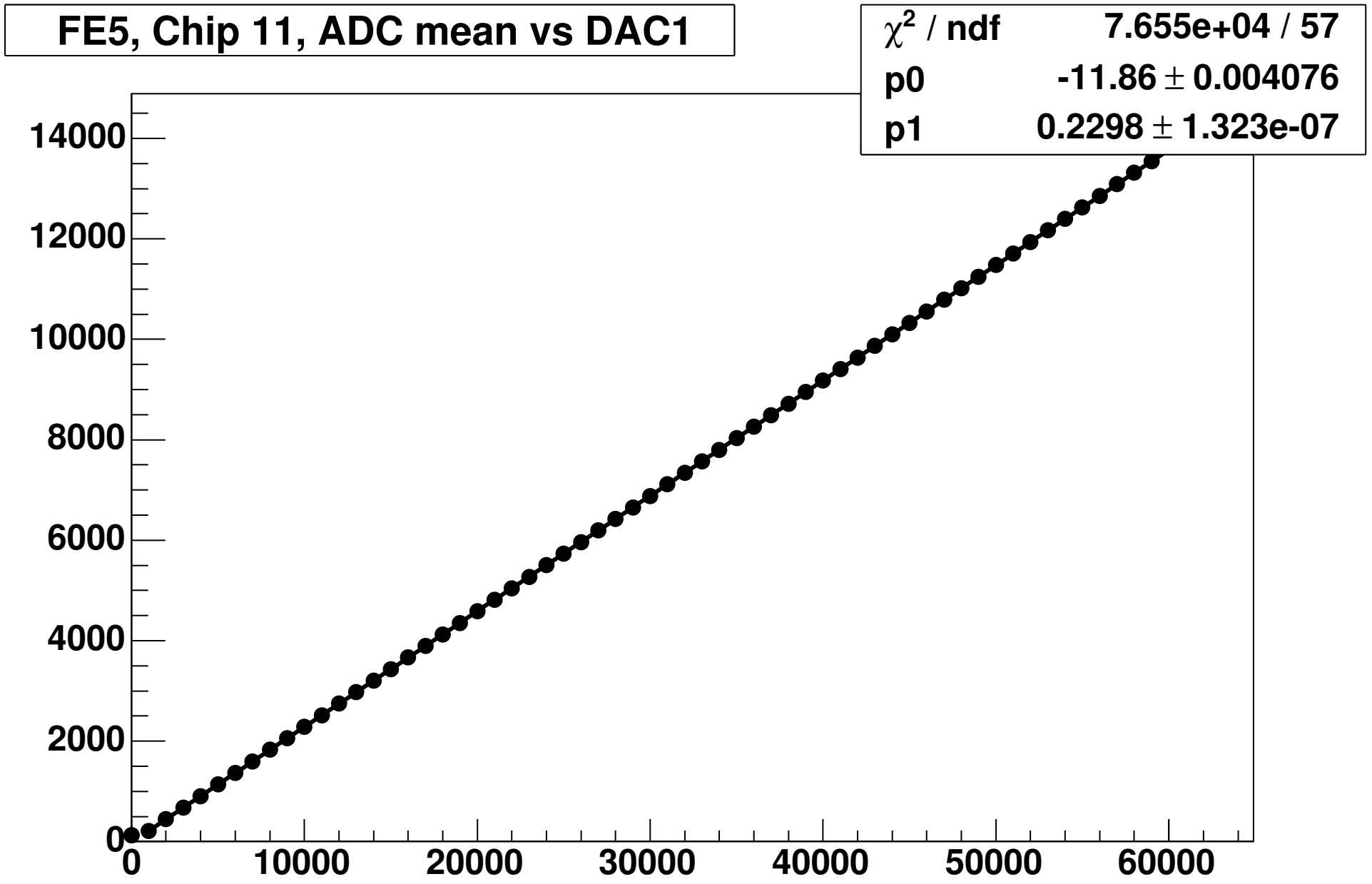

FE5, Chip 10, ADC noise vs DAC1
4.5
4
3.5
3
2.5
2
1.5
1
0
10000
20000
30000
40000
50000
60000

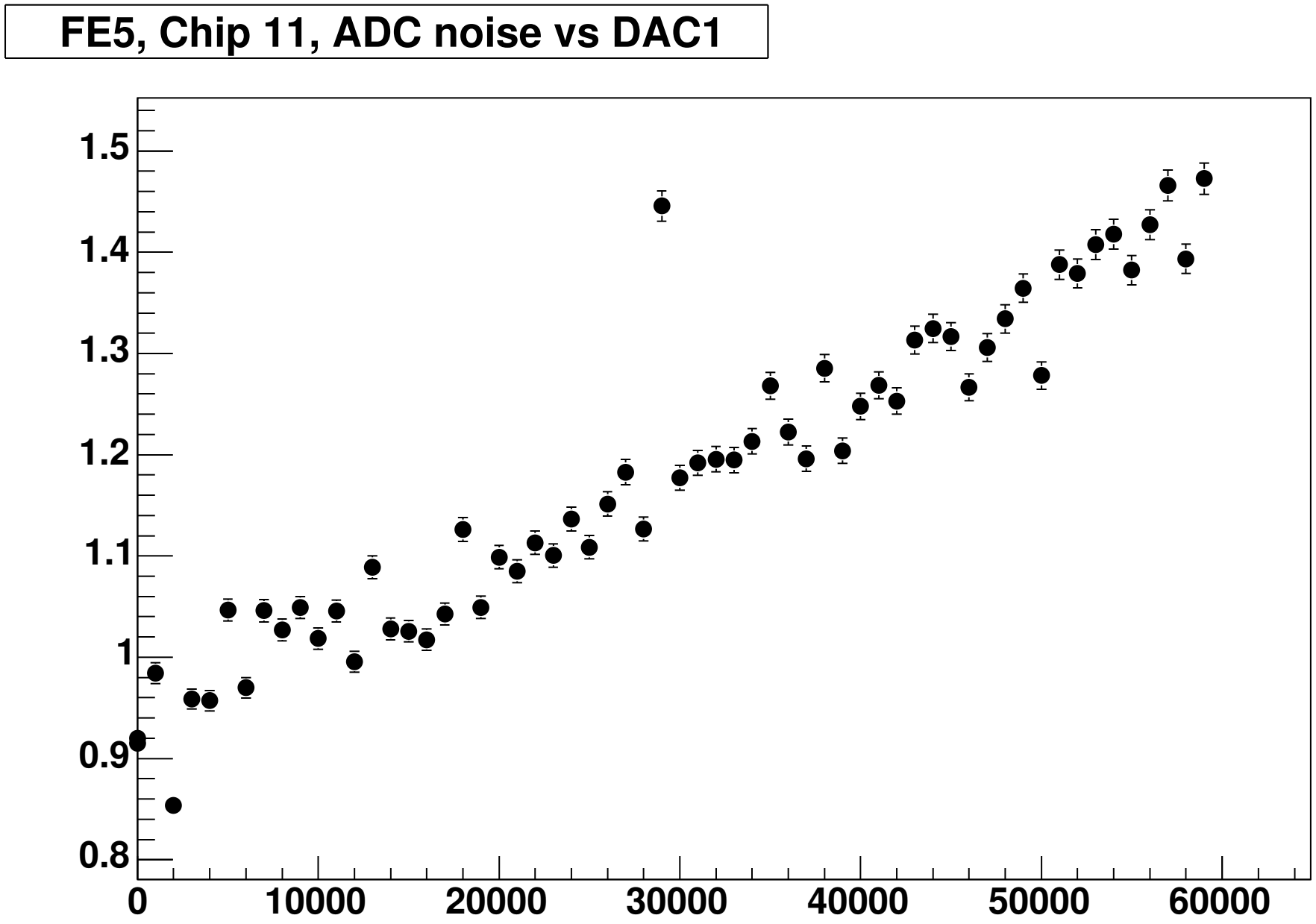

FE5, Chip 10, ADC residuals vs DAC1
5
4
3
2
1
0
-1
-2
0
10000
20000
30000
40000
50000
60000

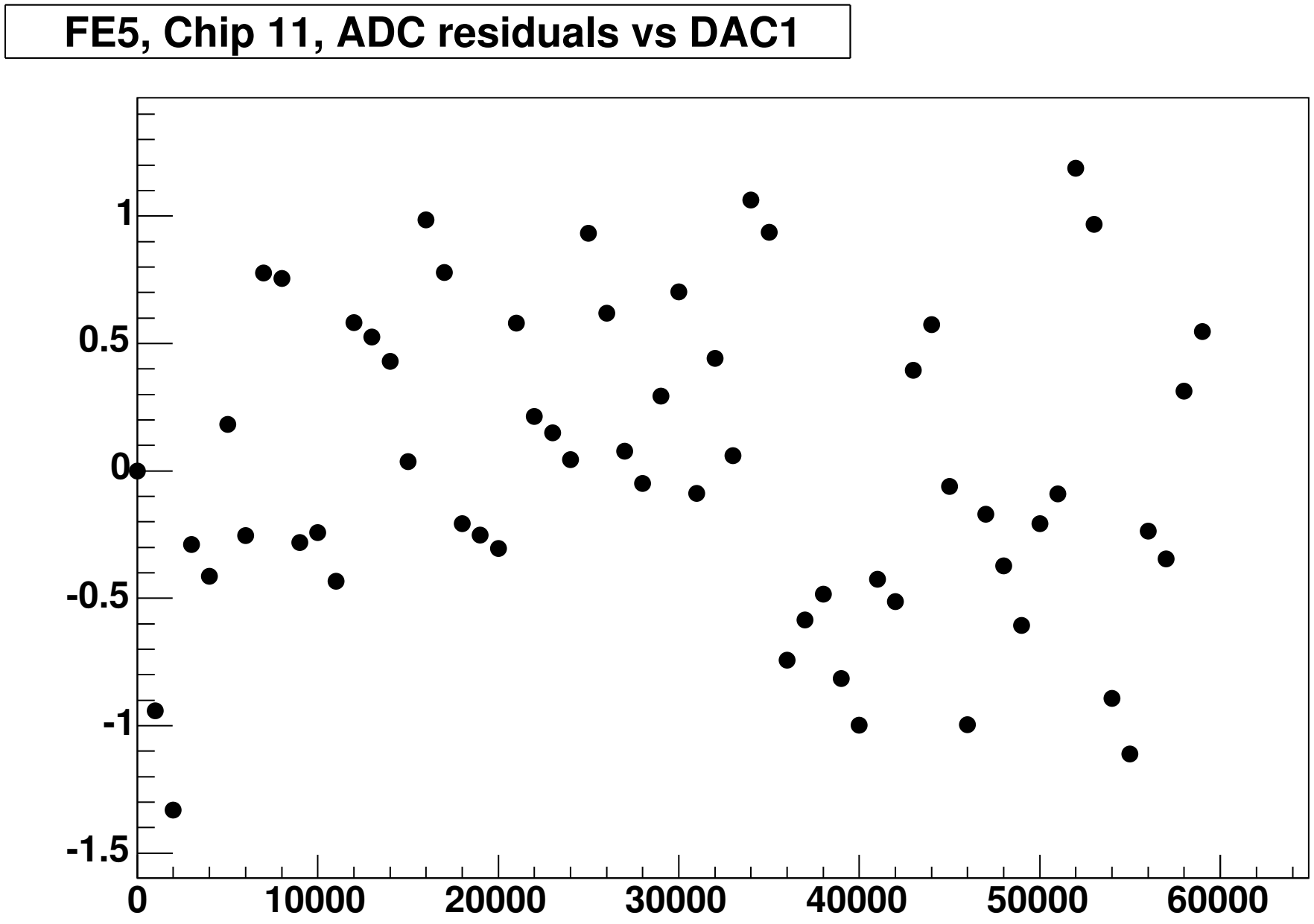

FE5, Chip 11, ADC mean vs DAC0
χ² / ndf 4.123e+04 / 57
p0 130.5 ± 0.00359
p1 3.502e-06 ± 1.058e-07
131.2
131
130.8
130.6
130.4
130.2
130
129.8
129.6
0
10000
20000
30000
40000
50000
60000

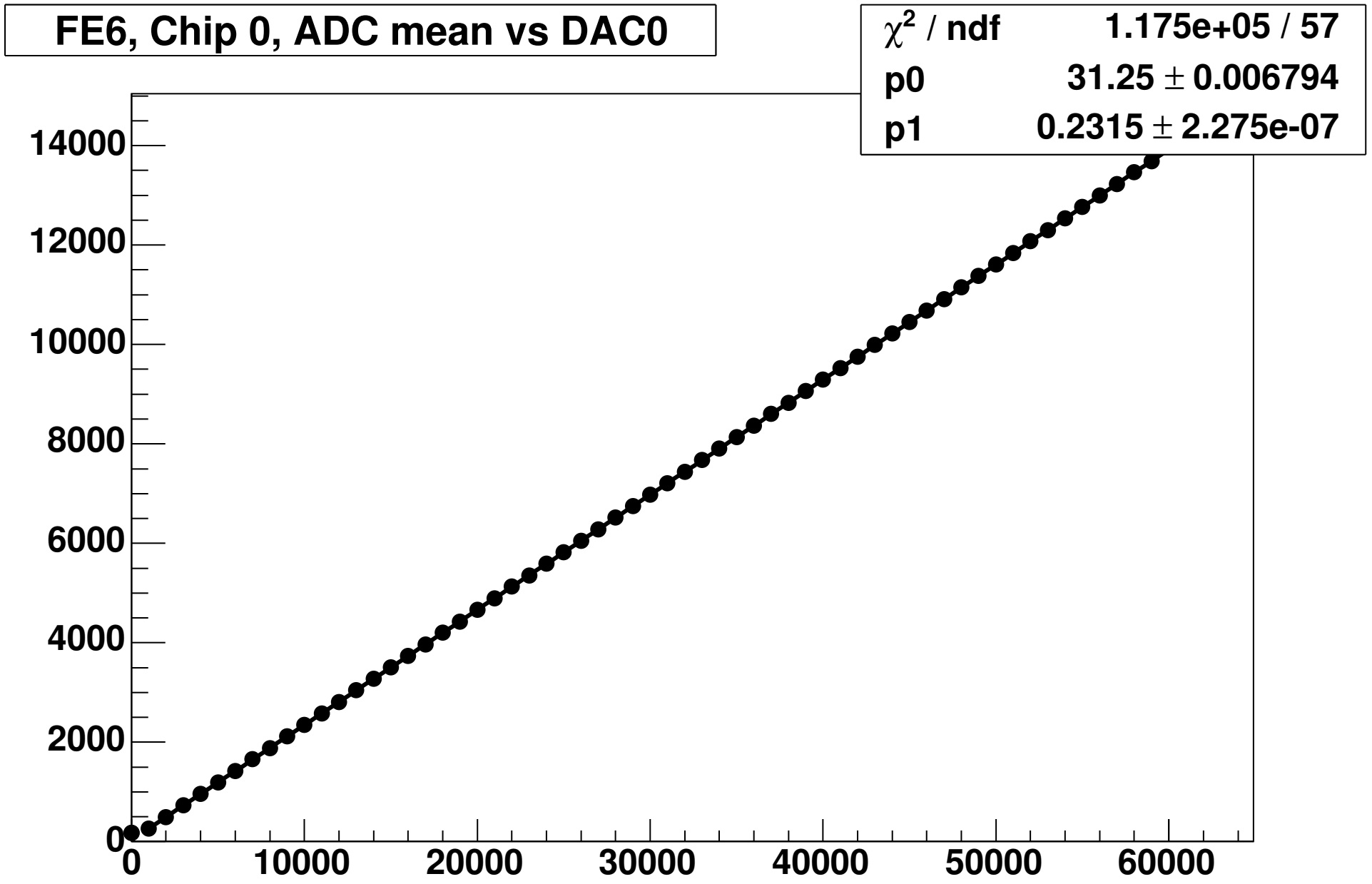

FE5, Chip 11, ADC noise vs DAC0
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0
10000
20000
30000
40000
50000
60000

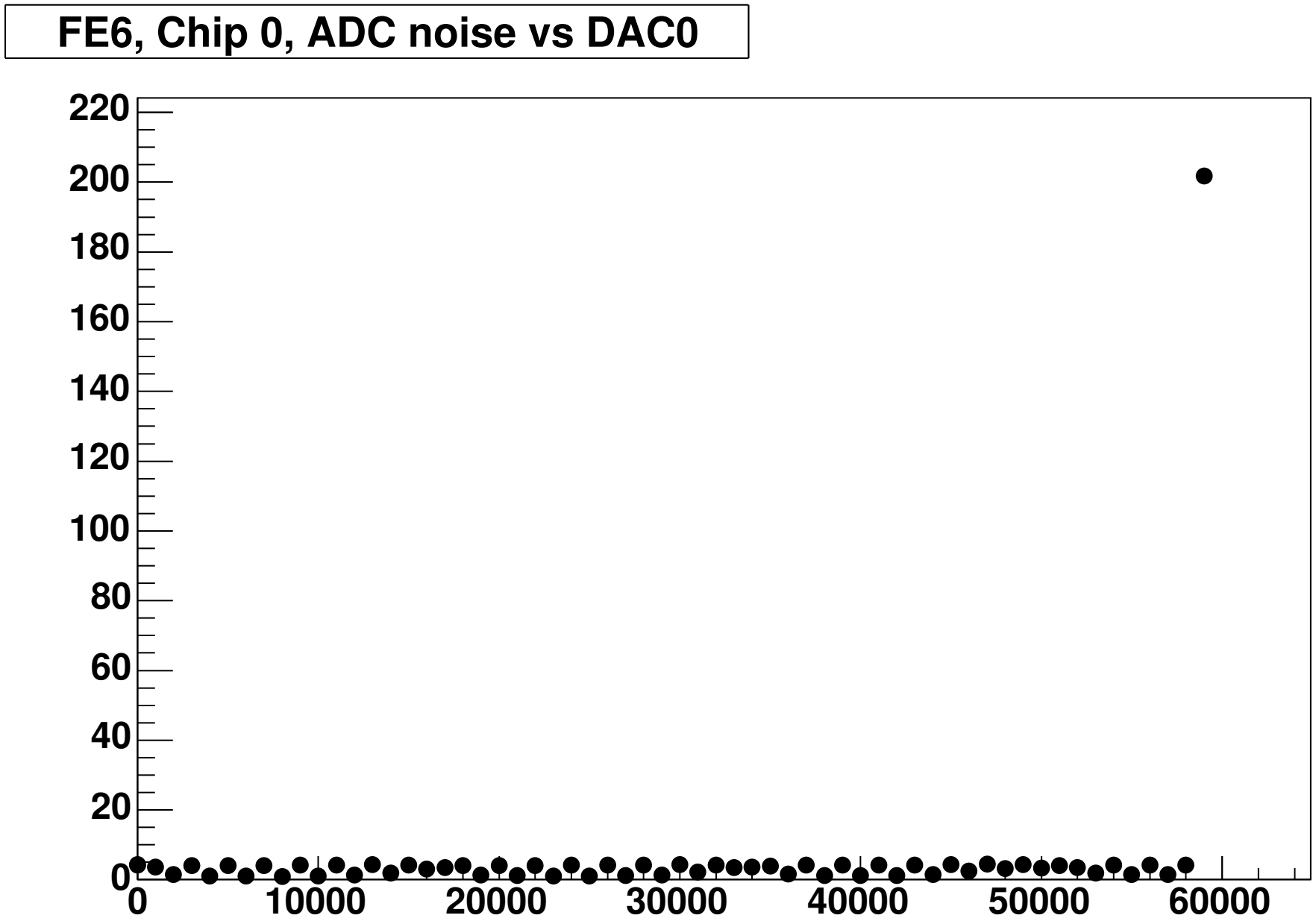

FE5, Chip 11, ADC residuals vs DAC0
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
0
10000
20000
30000
40000
50000
60000

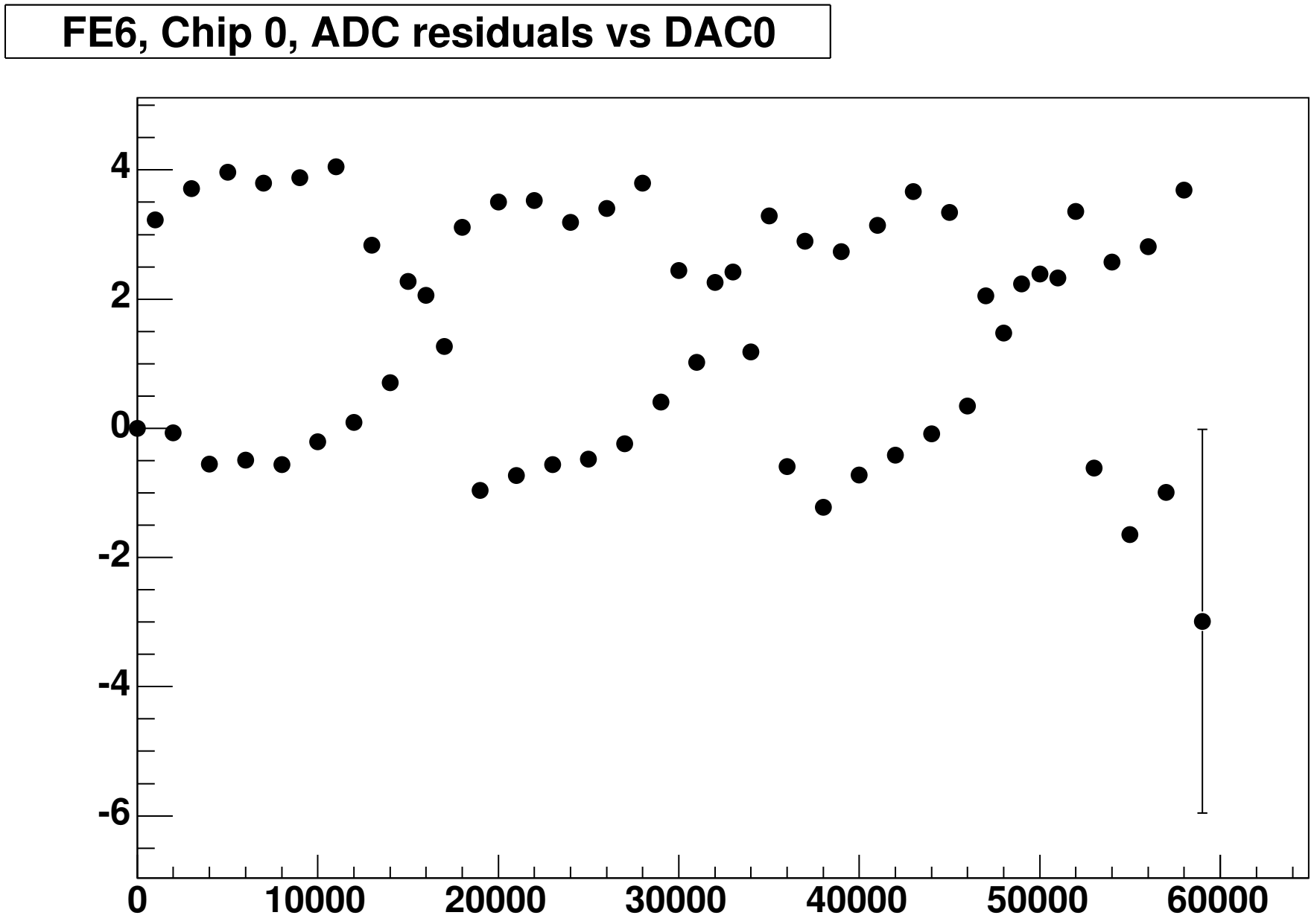

FE5, Chip 11, ADC mean vs DAC1
χ² / ndf 7.655e+04 / 57
p0 -11.86 ± 0.004076
p1 0.2298 ± 1.323e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

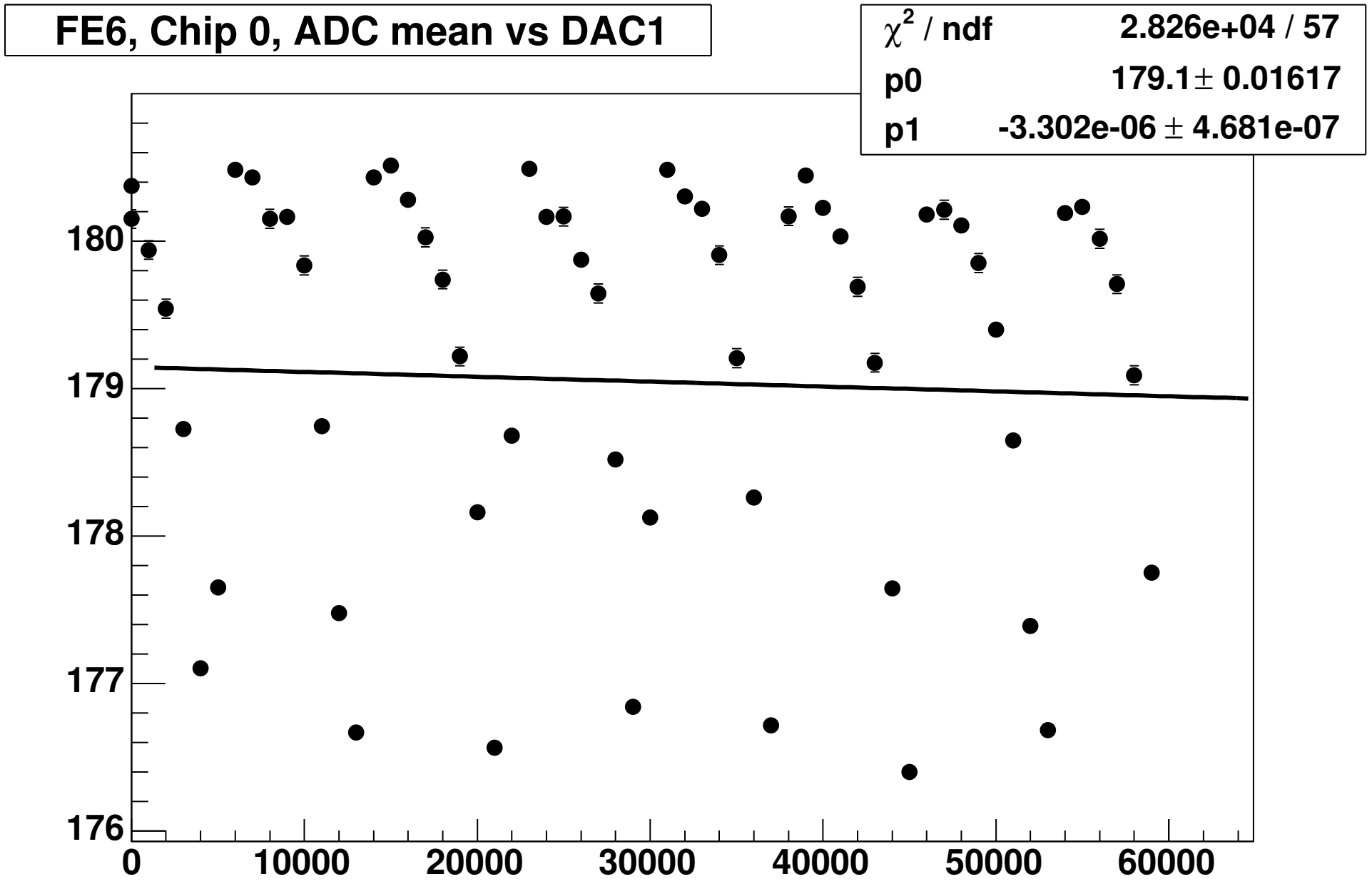

FE5, Chip 11, ADC noise vs DAC1
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0
10000
20000
30000
40000
50000
60000

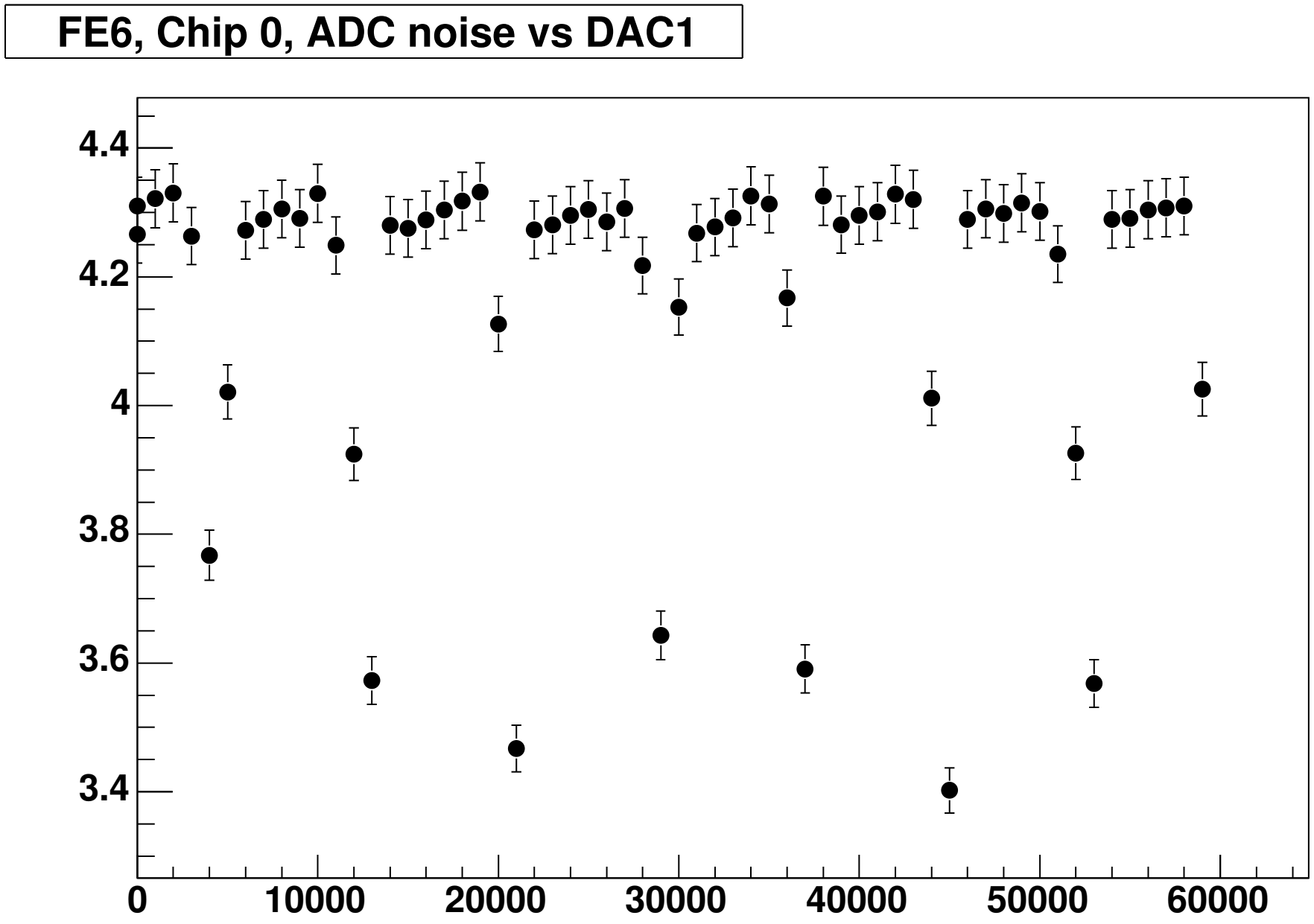

FE5, Chip 11, ADC residuals vs DAC1
1
0.5
0
-0.5
-1
-1.5
0
10000
20000
30000
40000
50000
60000

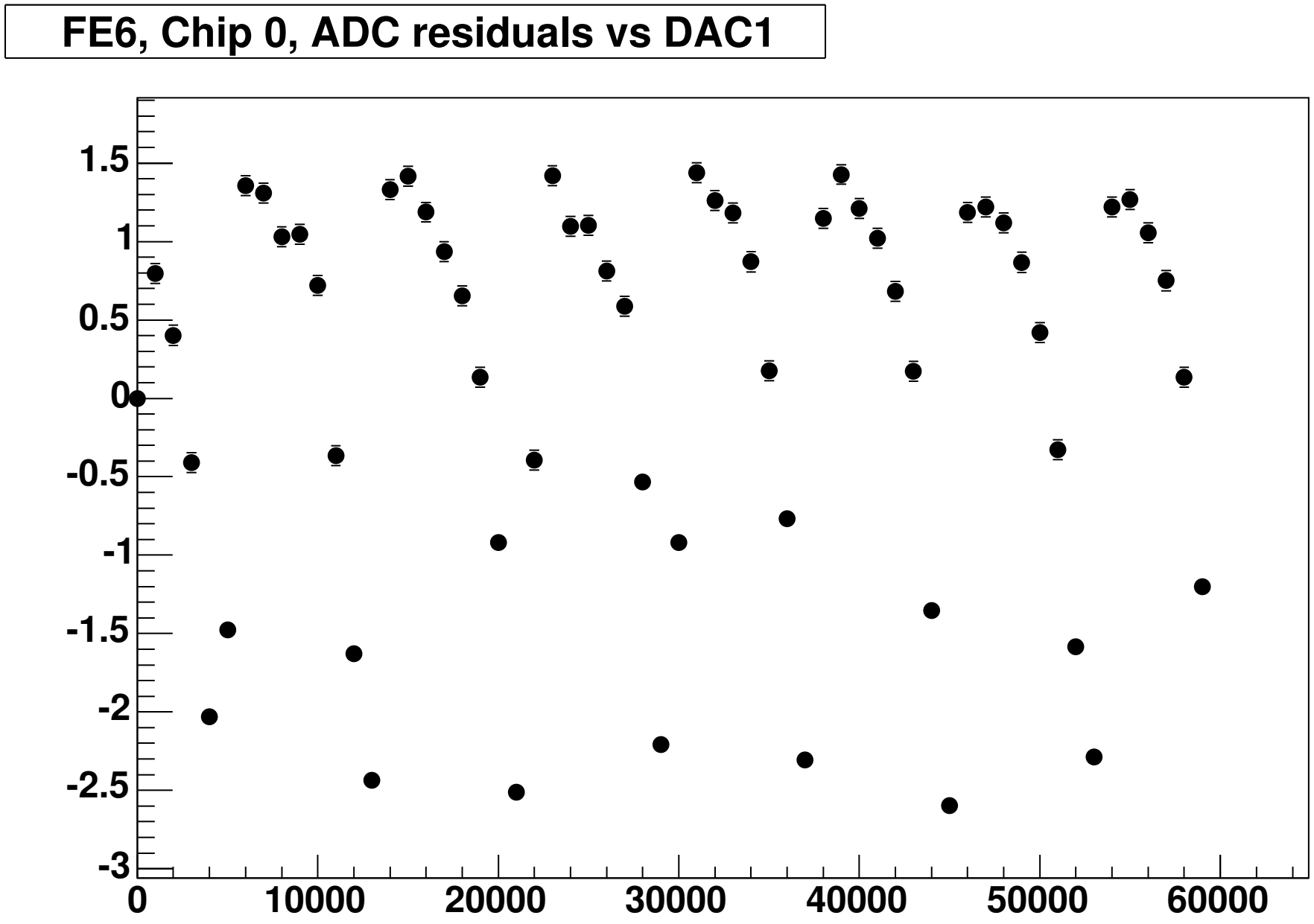

FE6, Chip 0, ADC mean vs DAC0
χ² / ndf 1.175e+05 / 57
p0 31.25 ± 0.006794
p1 0.2315 ± 2.275e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

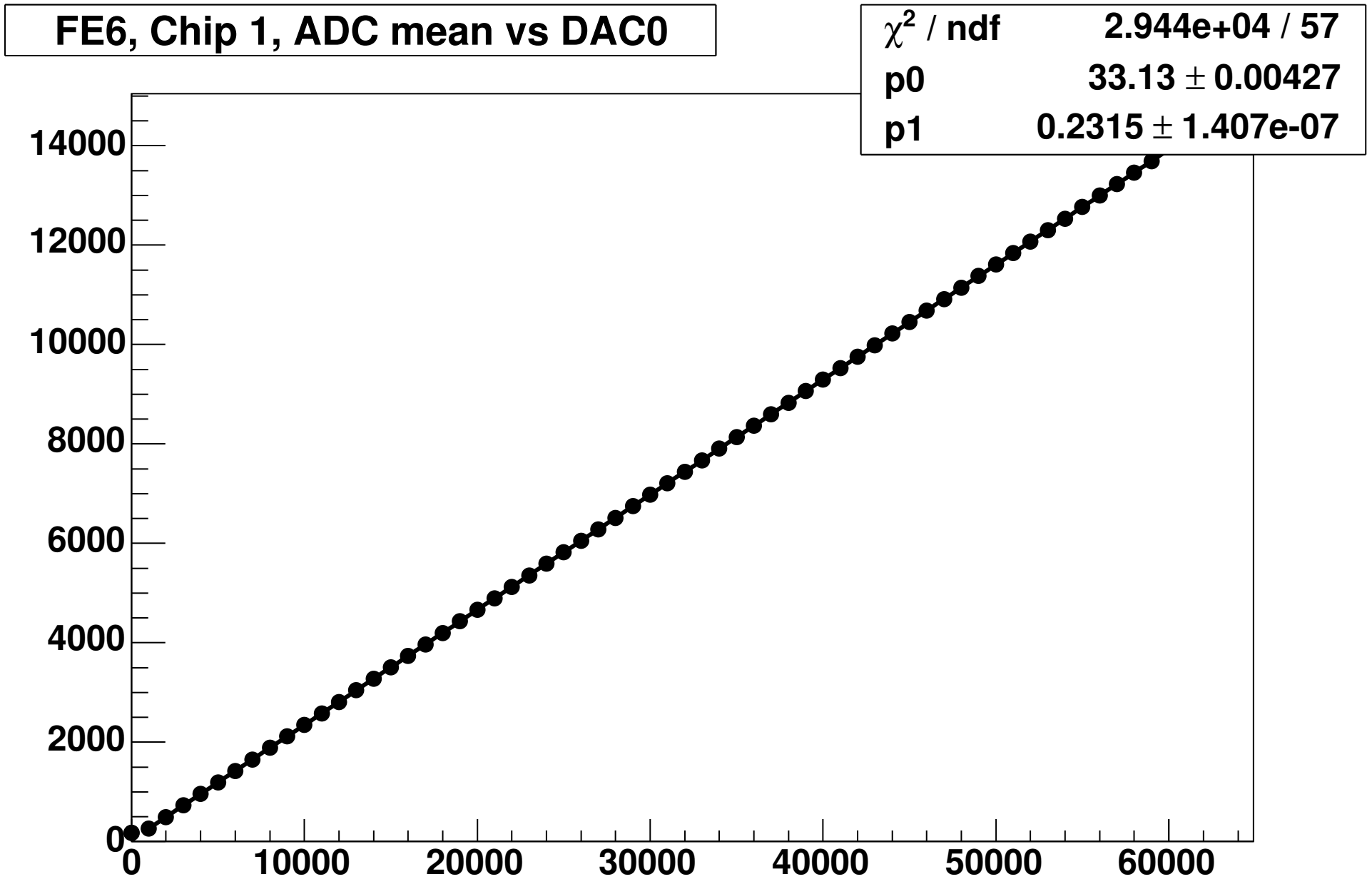

FE6, Chip 0, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

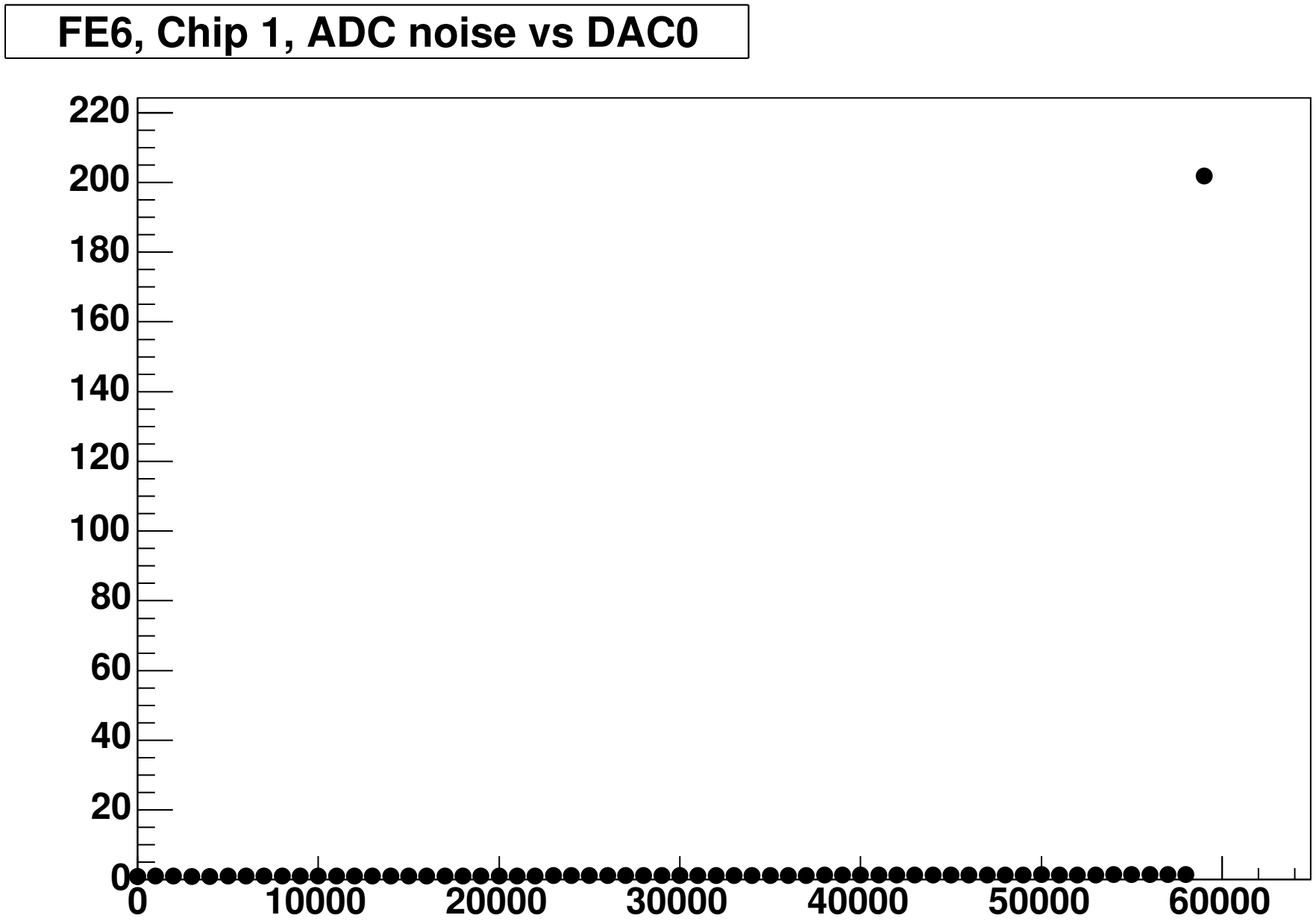

FE6, Chip 0, ADC residuals vs DAC0
4
2
0
-2
-4
-6
0
10000
20000
30000
40000
50000
60000


FE6, Chip 0, ADC mean vs DAC1
χ² / ndf 2.826e+04 / 57
p0 179.1 ± 0.01617
p1 -3.302e-06 ± 4.681e-07
180
179
178
177
176
0
10000
20000
30000
40000
50000
60000

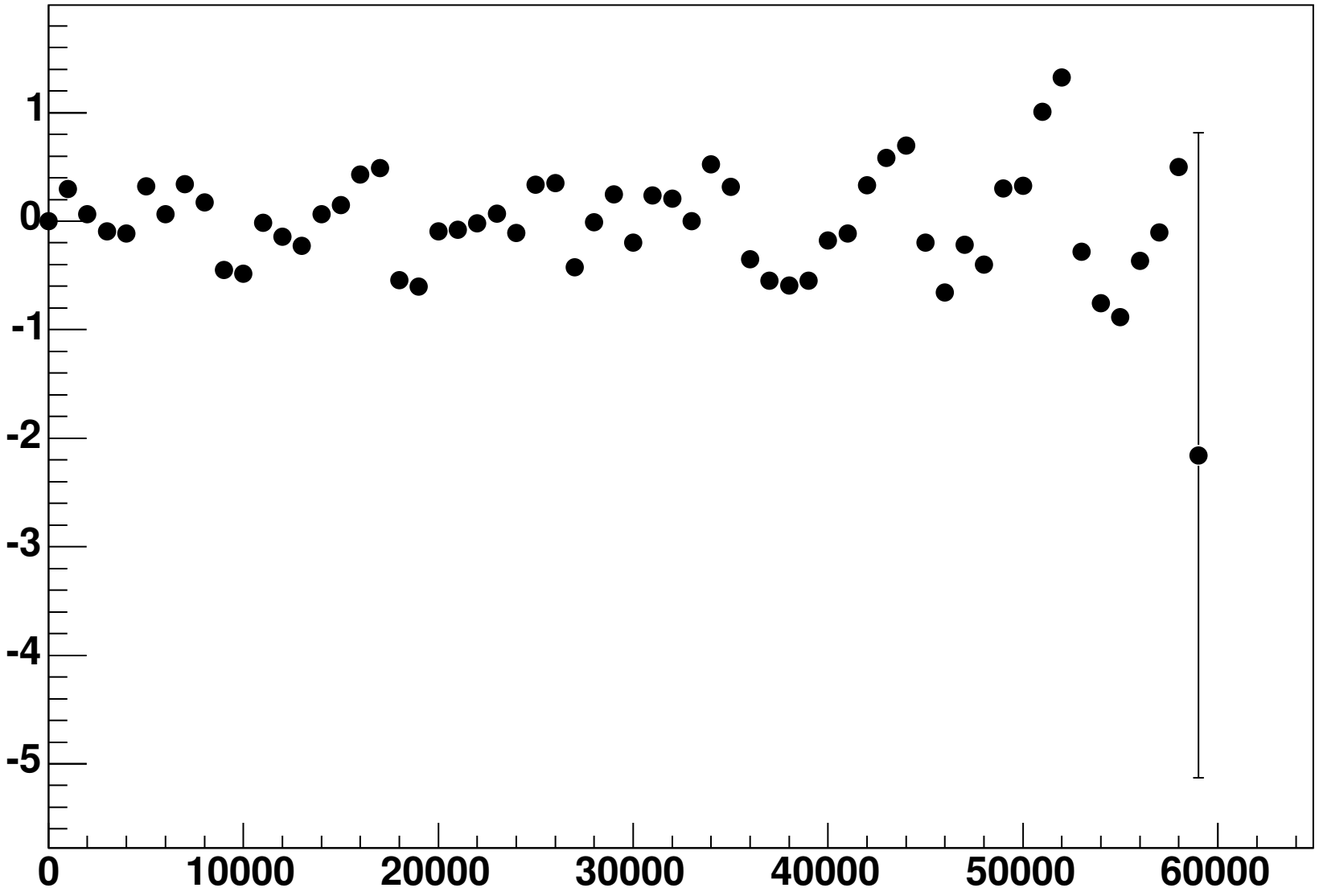

FE6, Chip 0, ADC noise vs DAC1
4.4
4.2
4
3.8
3.6
3.4
0
10000
20000
30000
40000
50000
60000

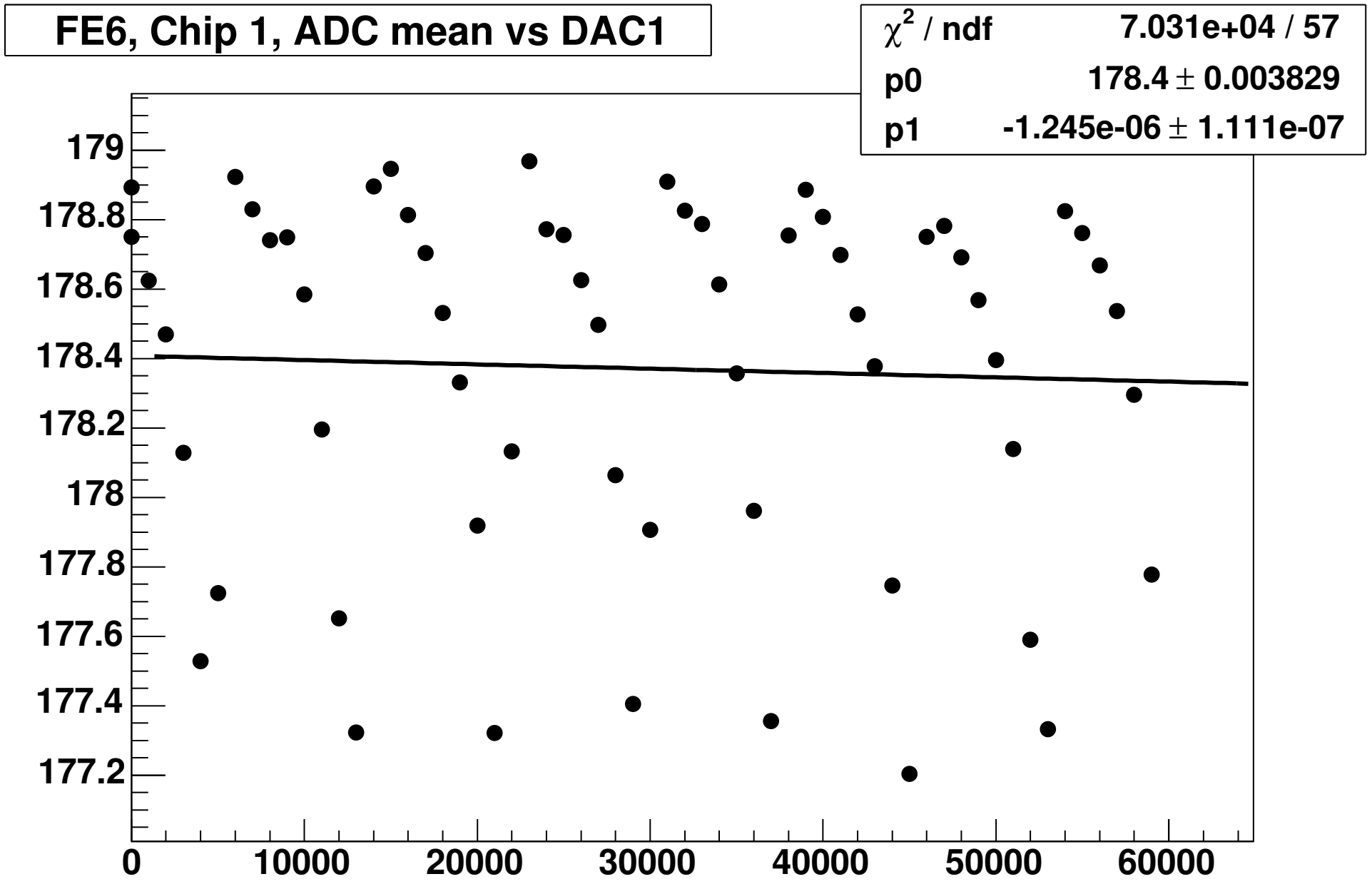

FE6, Chip 0, ADC residuals vs DAC1
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
-3
0
10000
20000
30000
40000
50000
60000

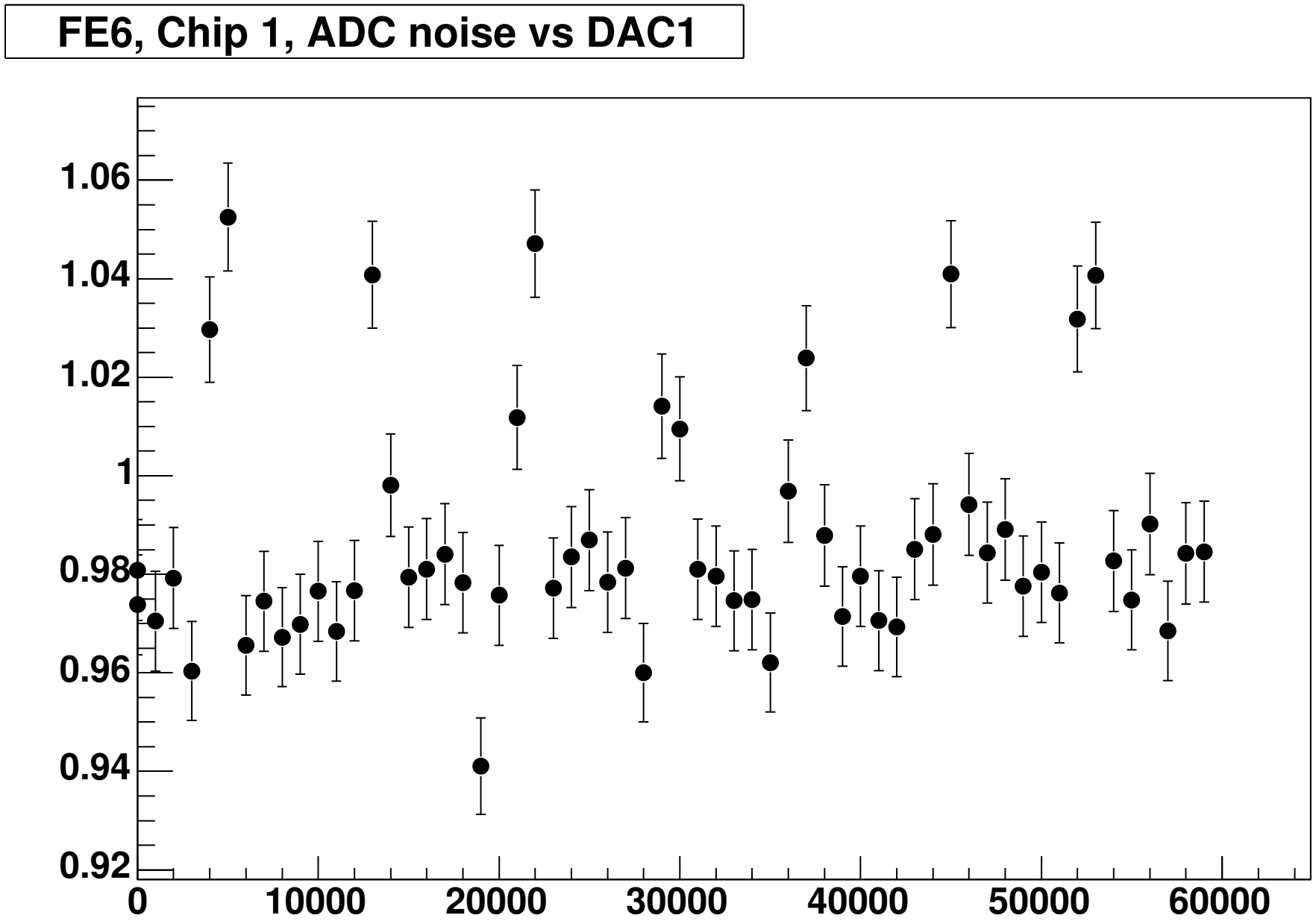

FE6, Chip 1, ADC mean vs DAC0
χ² / ndf 2.944e+04 / 57
p0 33.13 ± 0.00427
p1 0.2315 ± 1.407e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

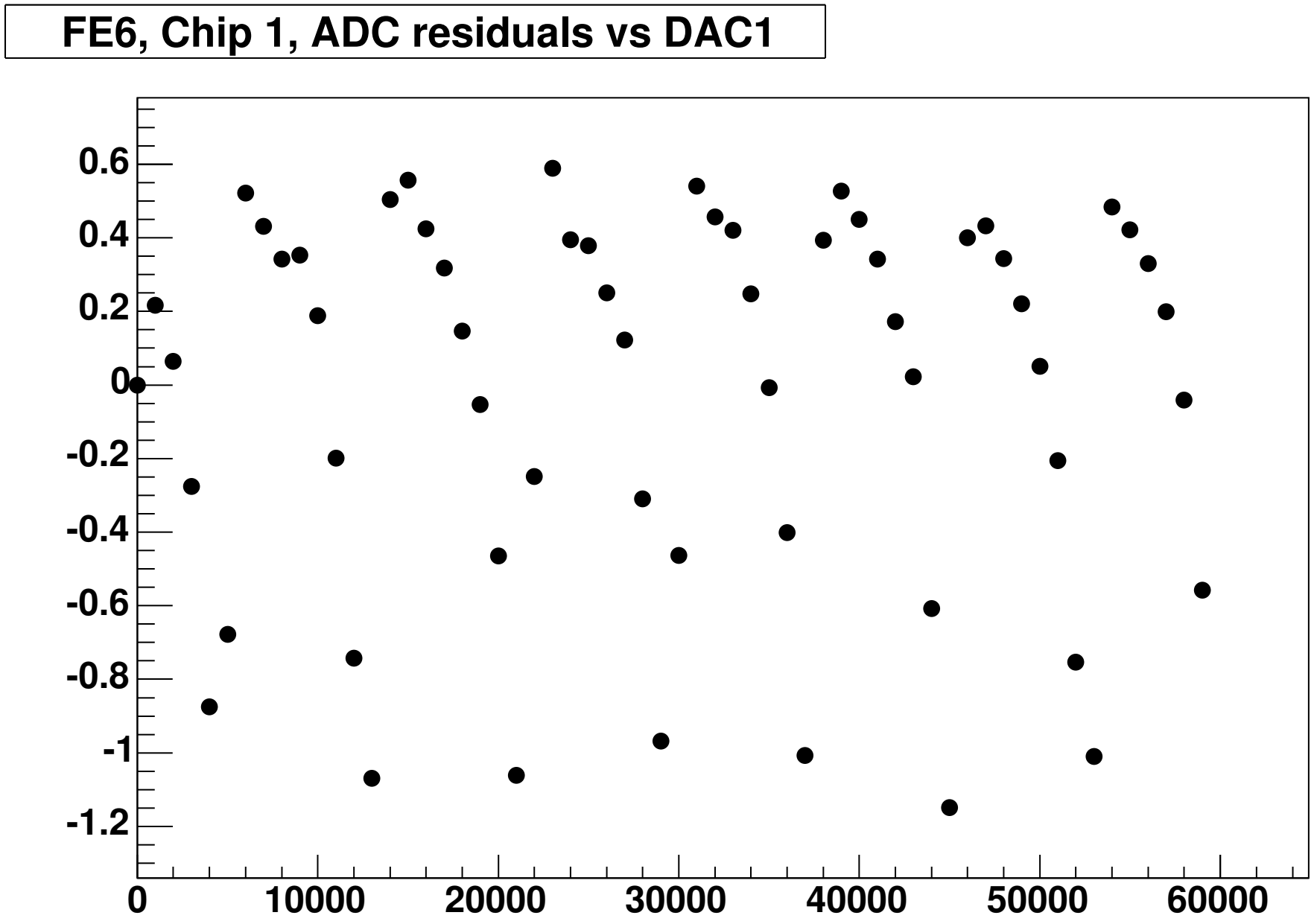

FE6, Chip 1, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

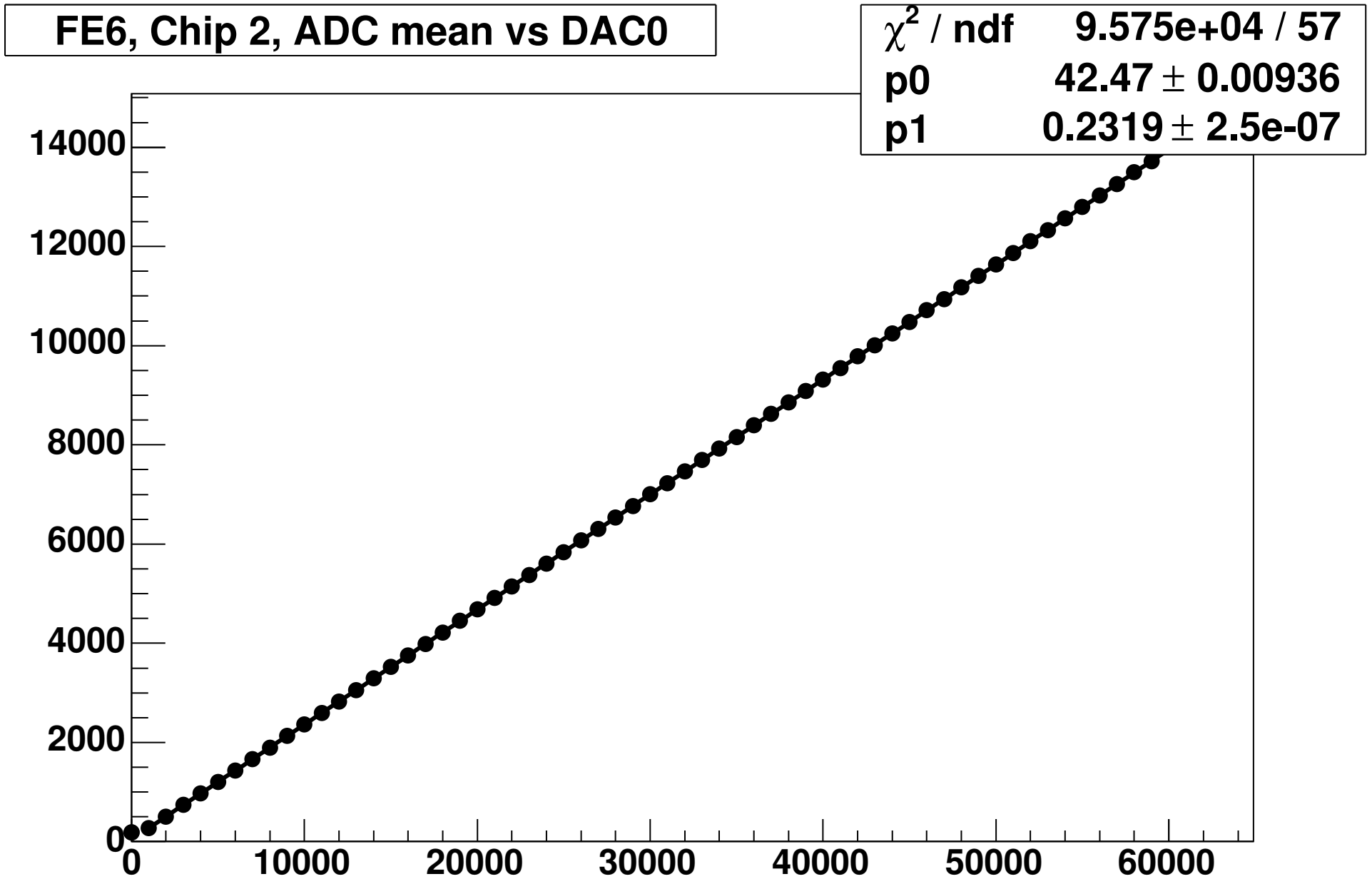
FE6, Chip 1, ADC residuals vs DAC0

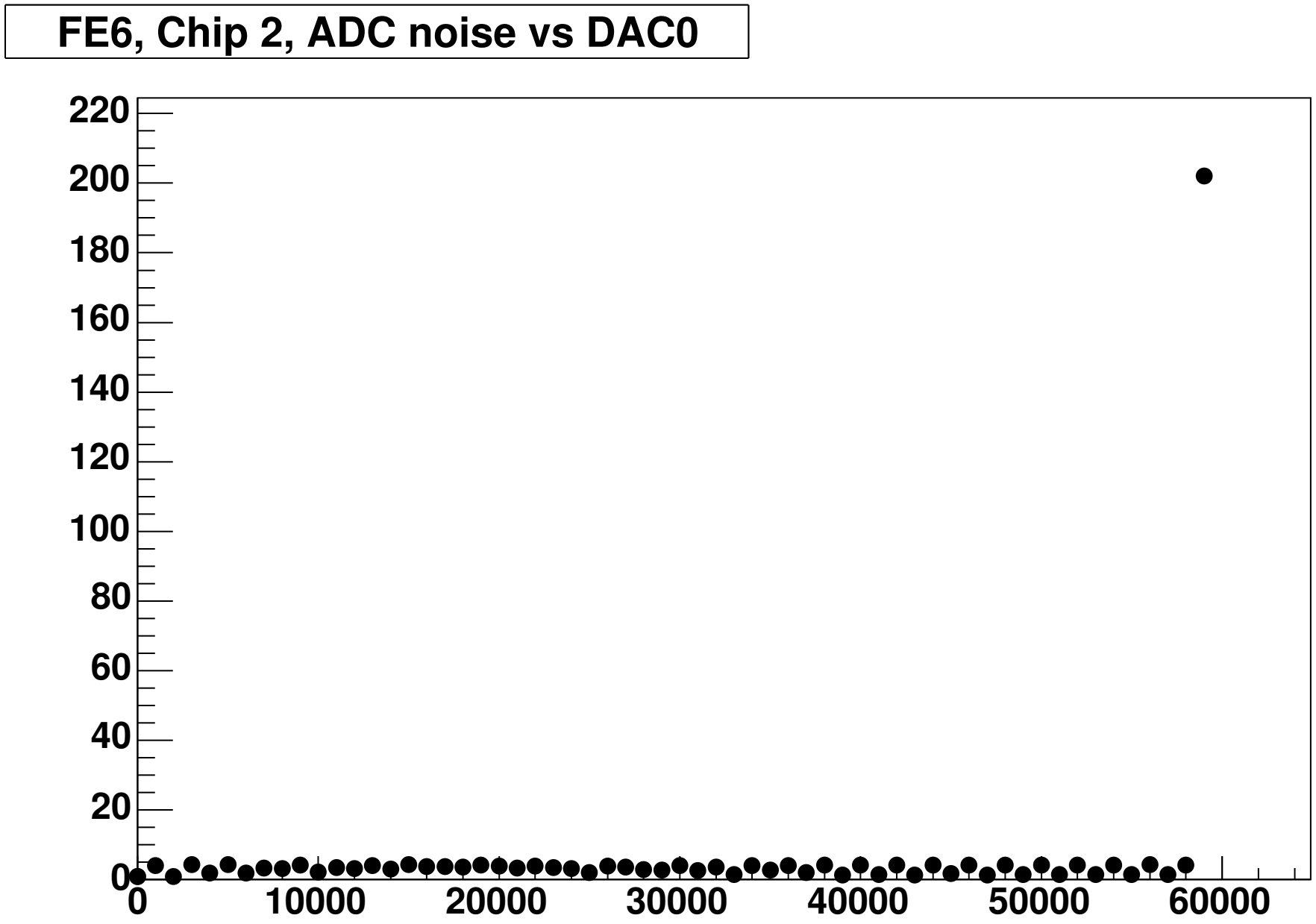


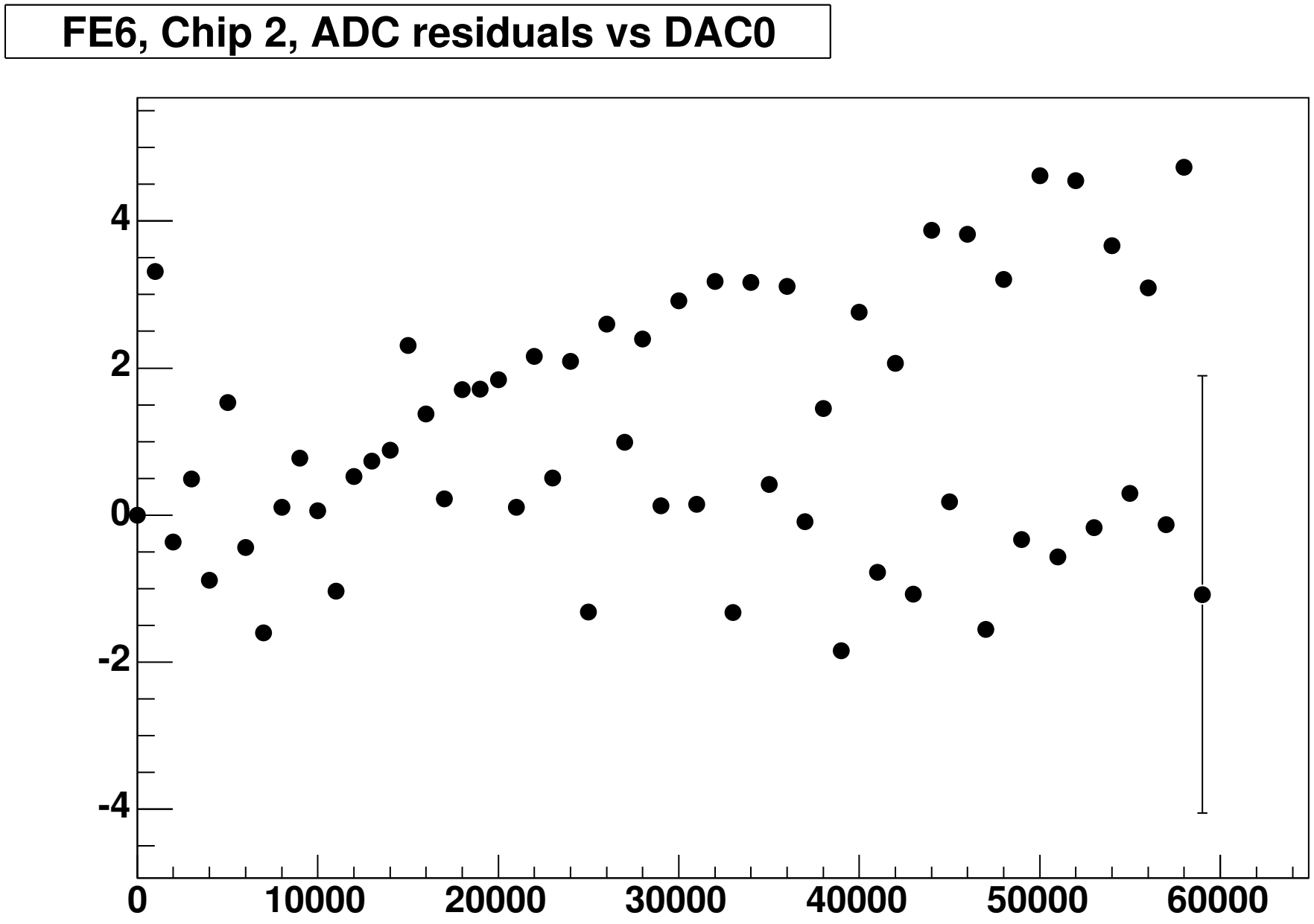

FE6, Chip 1, ADC mean vs DAC1
χ² / ndf 7.031e+04 / 57
p0 178.4 ± 0.003829
p1 -1.245e-06 ± 1.111e-07
179
178.8
178.6
178.4
178.2
178
177.8
177.6
177.4
177.2
0
10000
20000
30000
40000
50000
60000

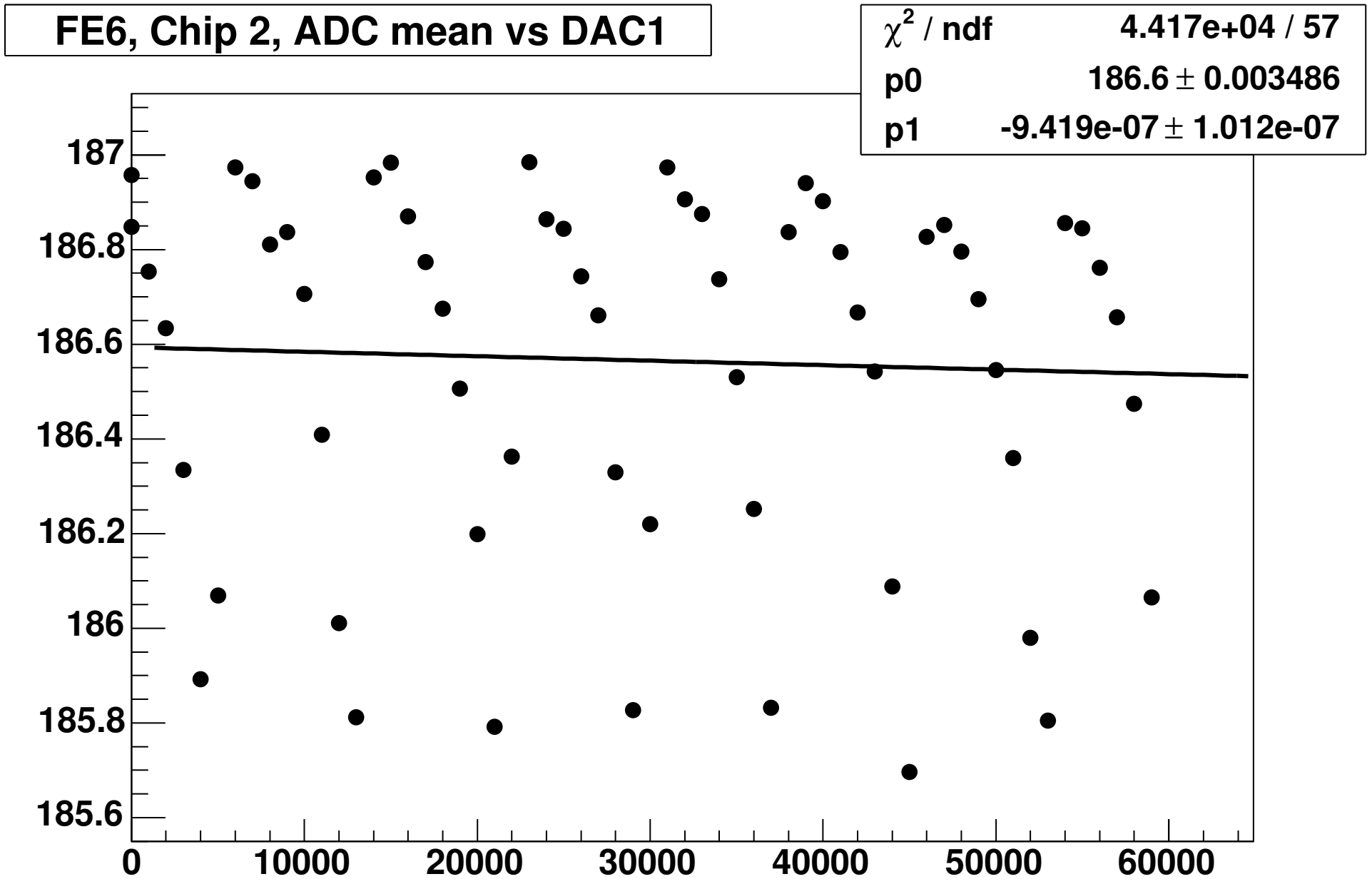

FE6, Chip 1, ADC noise vs DAC1
1.06
1.04
1.02
1
0.98
0.96
0.94
0.92
0
10000
20000
30000
40000
50000
60000

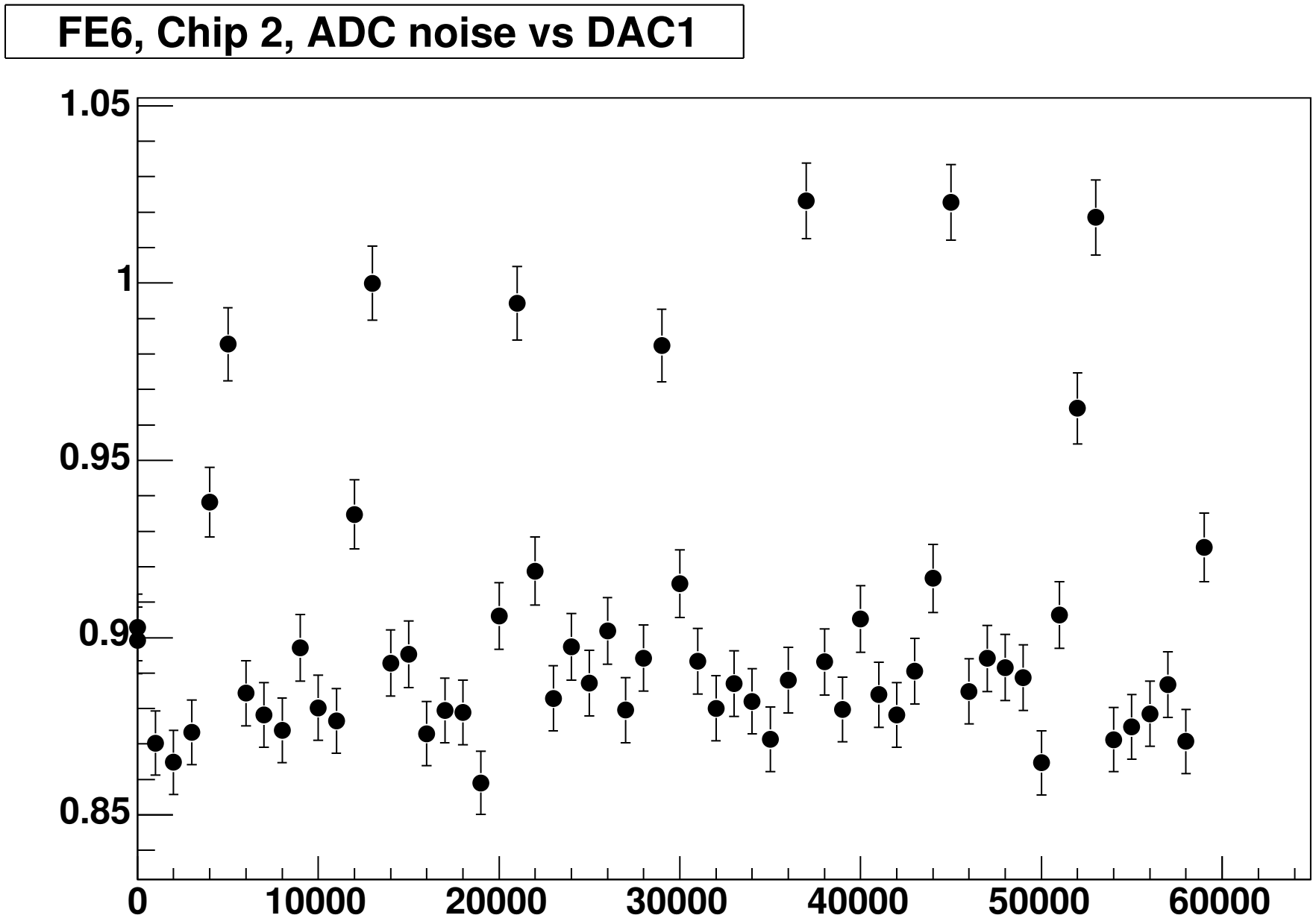

FE6, Chip 1, ADC residuals vs DAC1
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
0
10000
20000
30000
40000
50000
60000

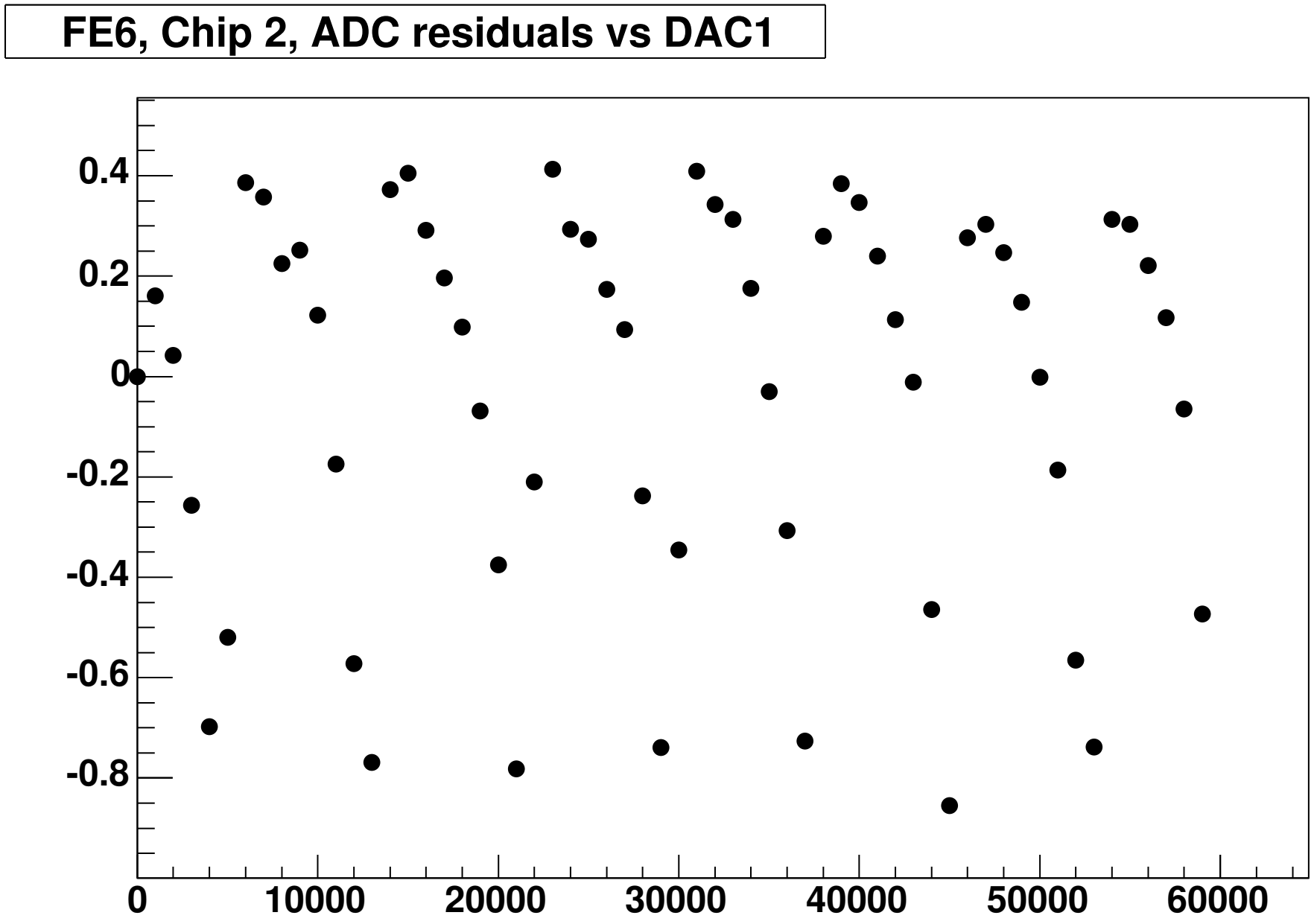

FE6, Chip 2, ADC mean vs DAC0
χ^2 / ndf 9.575e+04 / 57
p0 42.47 ± 0.00936
p1 0.2319 ± 2.5e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

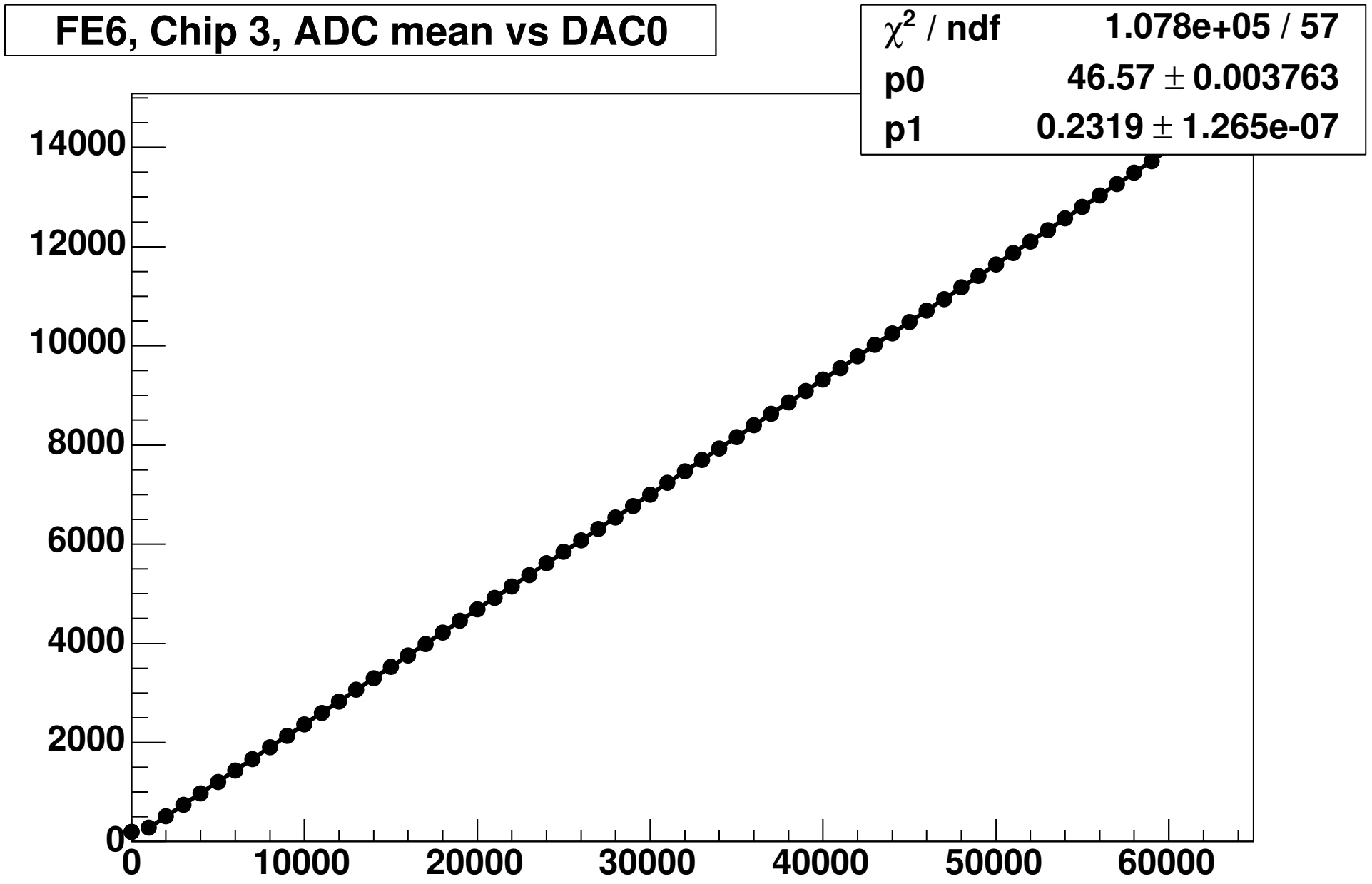

FE6, Chip 2, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

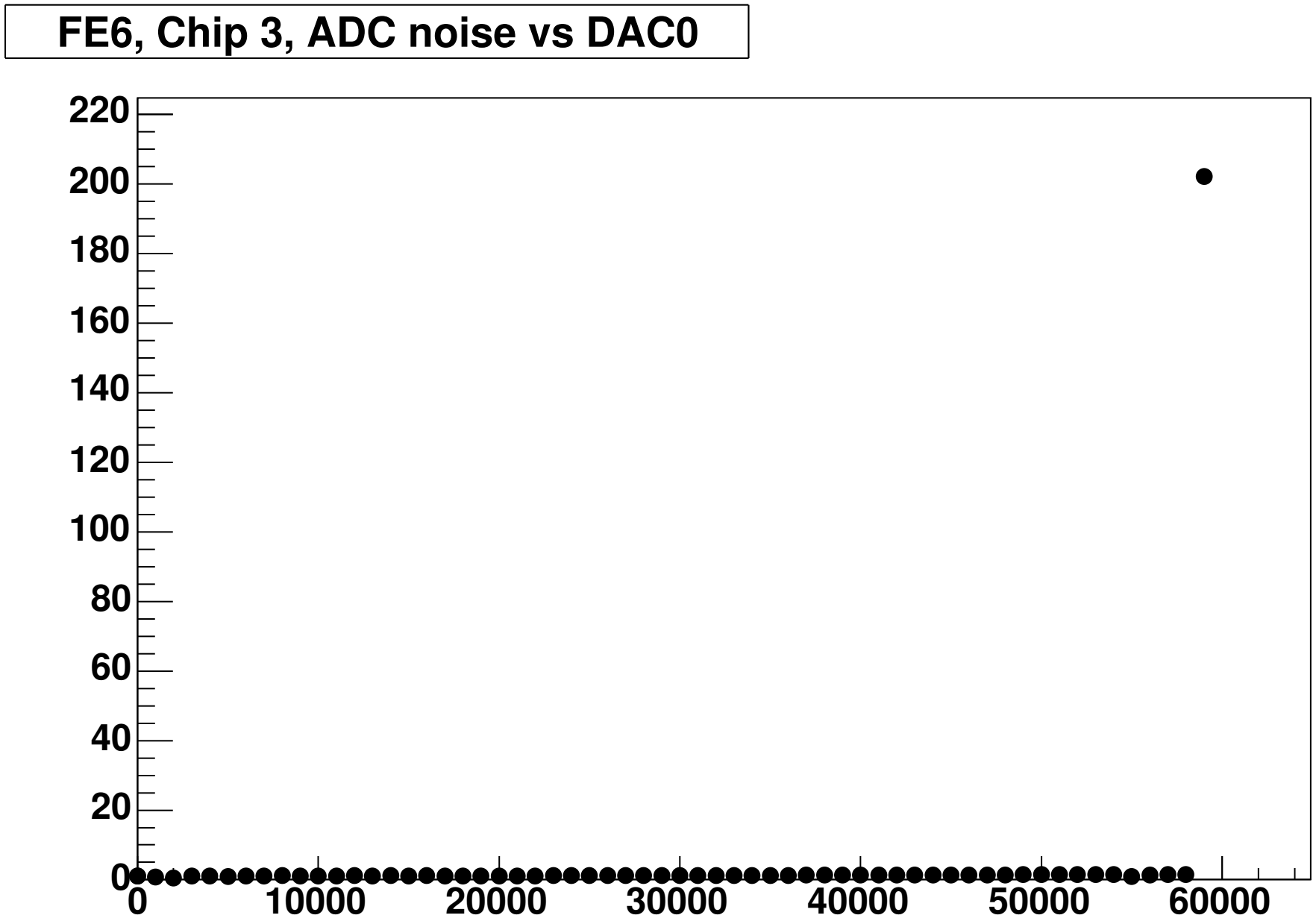

FE6, Chip 2, ADC residuals vs DAC0
4
2
0
-2
-4
0
10000
20000
30000
40000
50000
60000

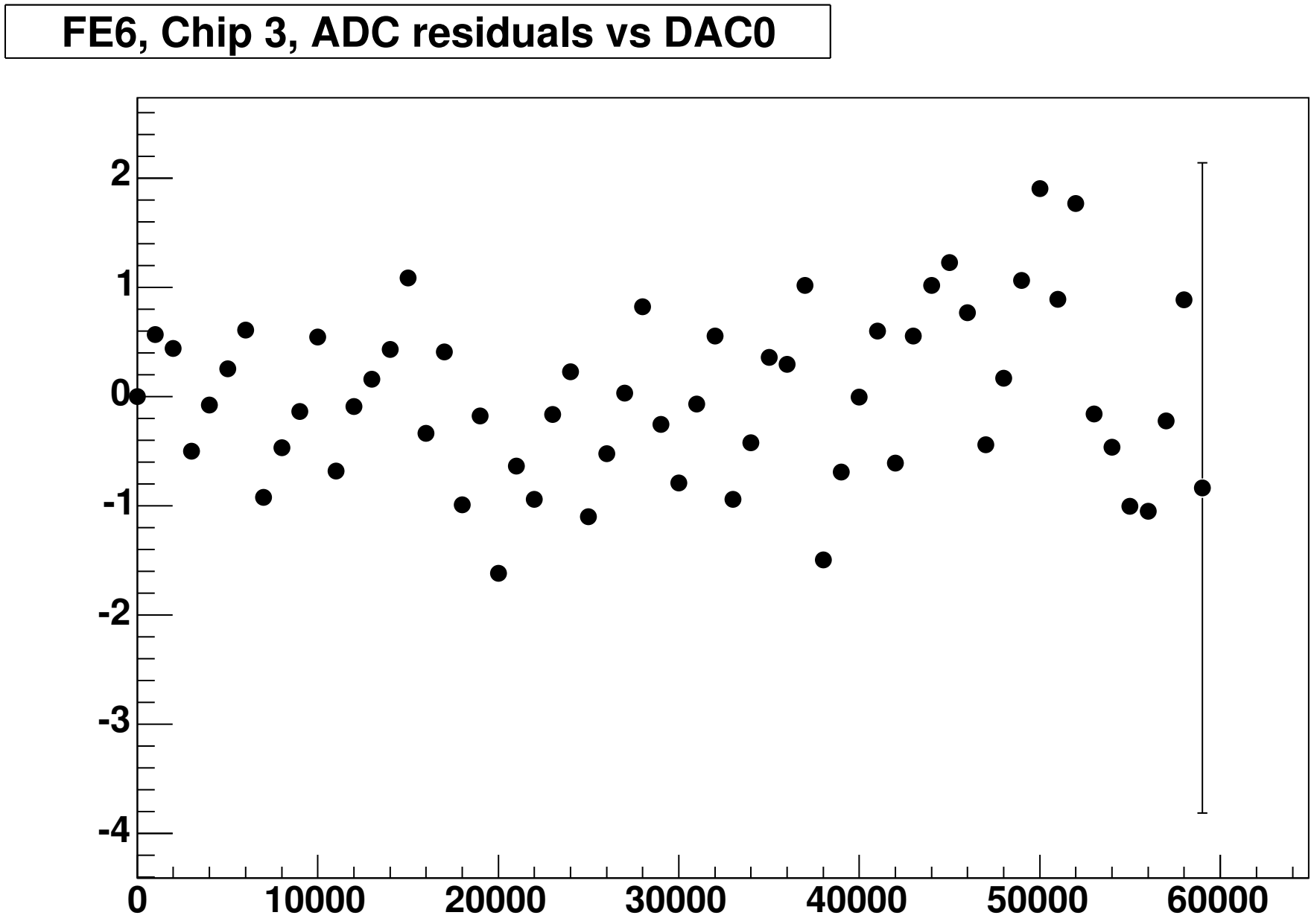

FE6, Chip 2, ADC mean vs DAC1
χ² / ndf 4.417e+04 / 57
p0 186.6 ± 0.003486
p1 -9.419e-07 ± 1.012e-07
187
186.8
186.6
186.4
186.2
186
185.8
185.6
0
10000
20000
30000
40000
50000
60000

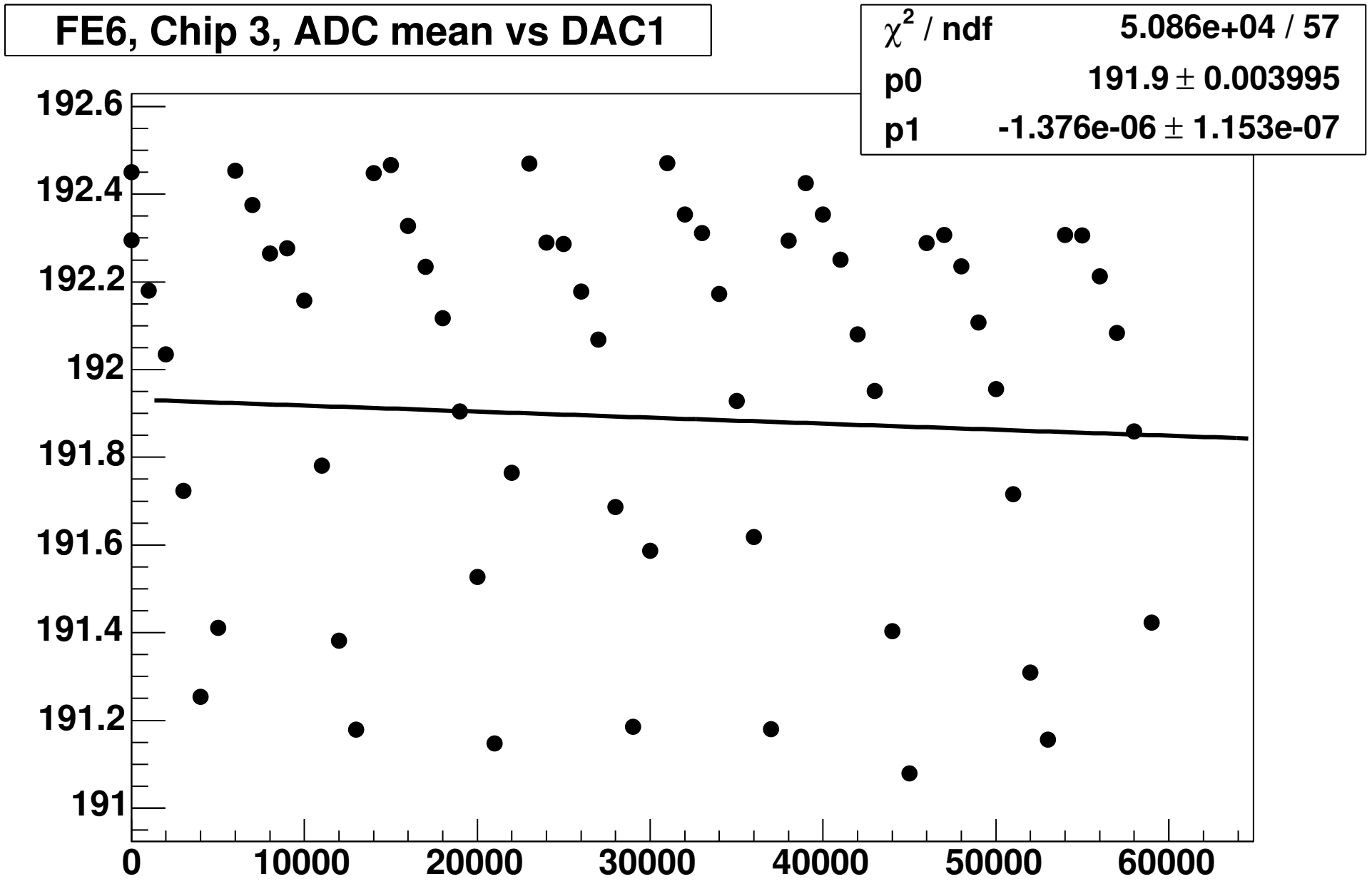

FE6, Chip 2, ADC noise vs DAC1
1.05
1
0.95
0.9
0.85
0
10000
20000
30000
40000
50000
60000

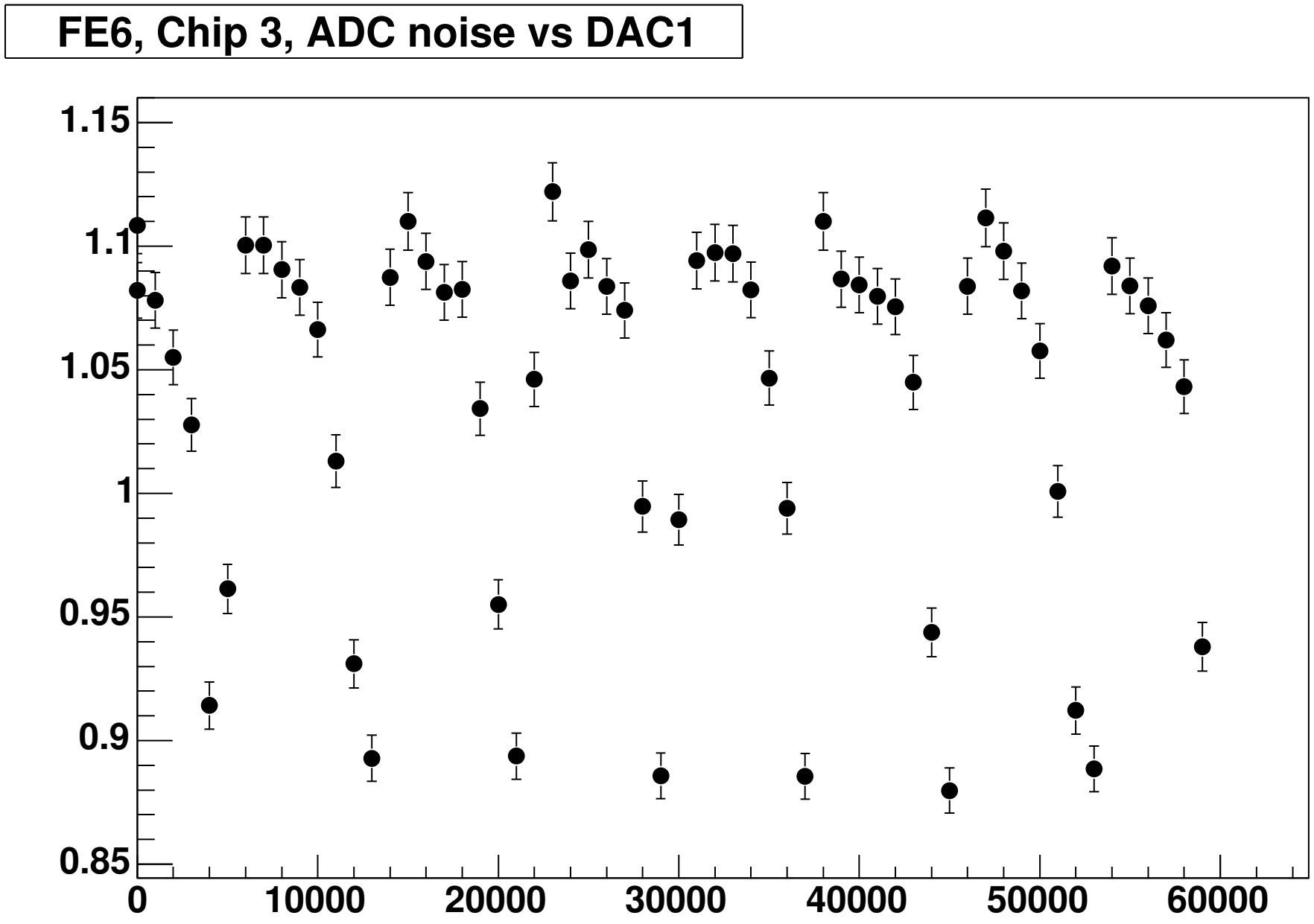

FE6, Chip 2, ADC residuals vs DAC1
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
0
10000
20000
30000
40000
50000
60000

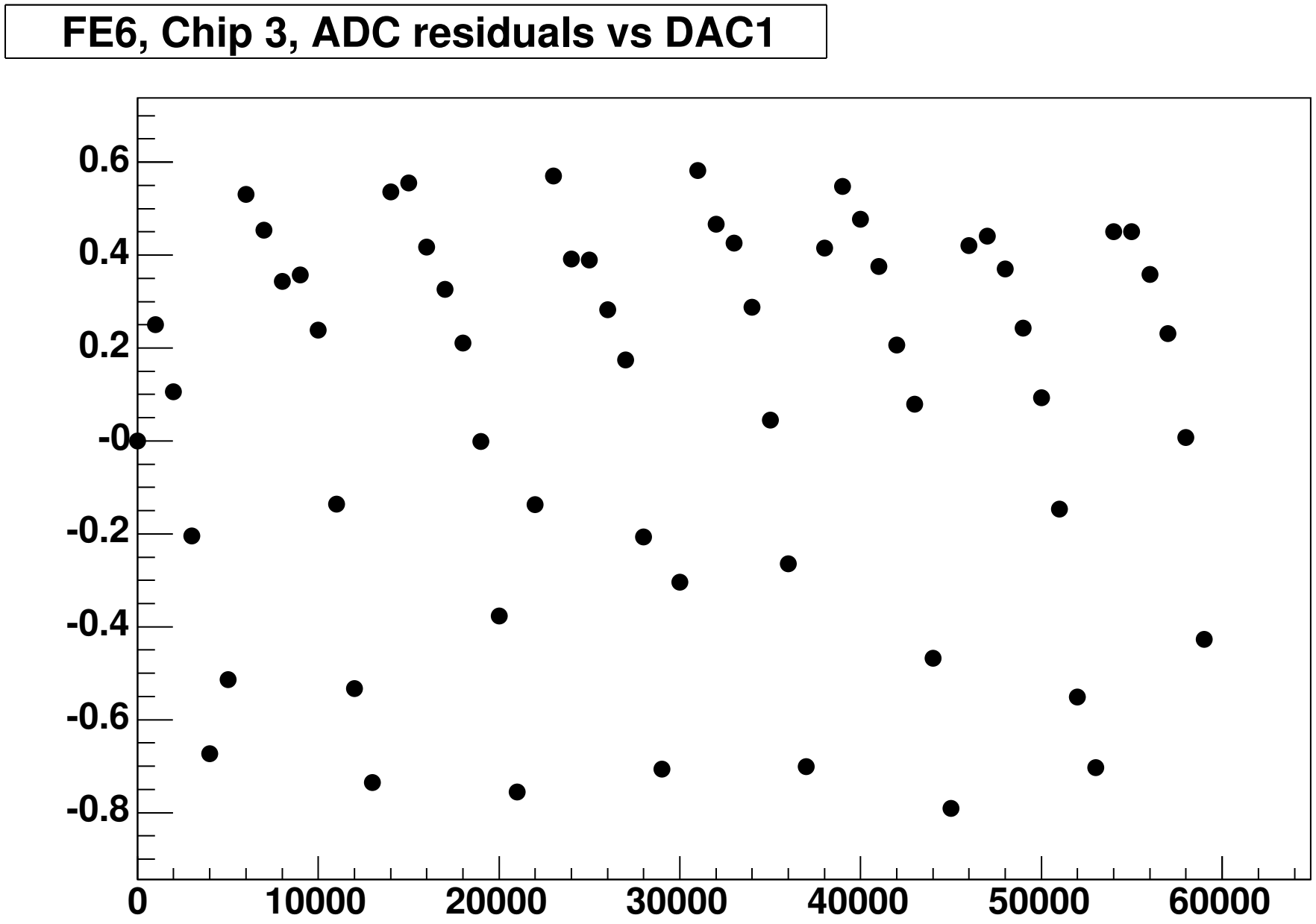

FE6, Chip 3, ADC mean vs DAC0
χ² / ndf 1.078e+05 / 57
p0 46.57 ± 0.003763
p1 0.2319 ± 1.265e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

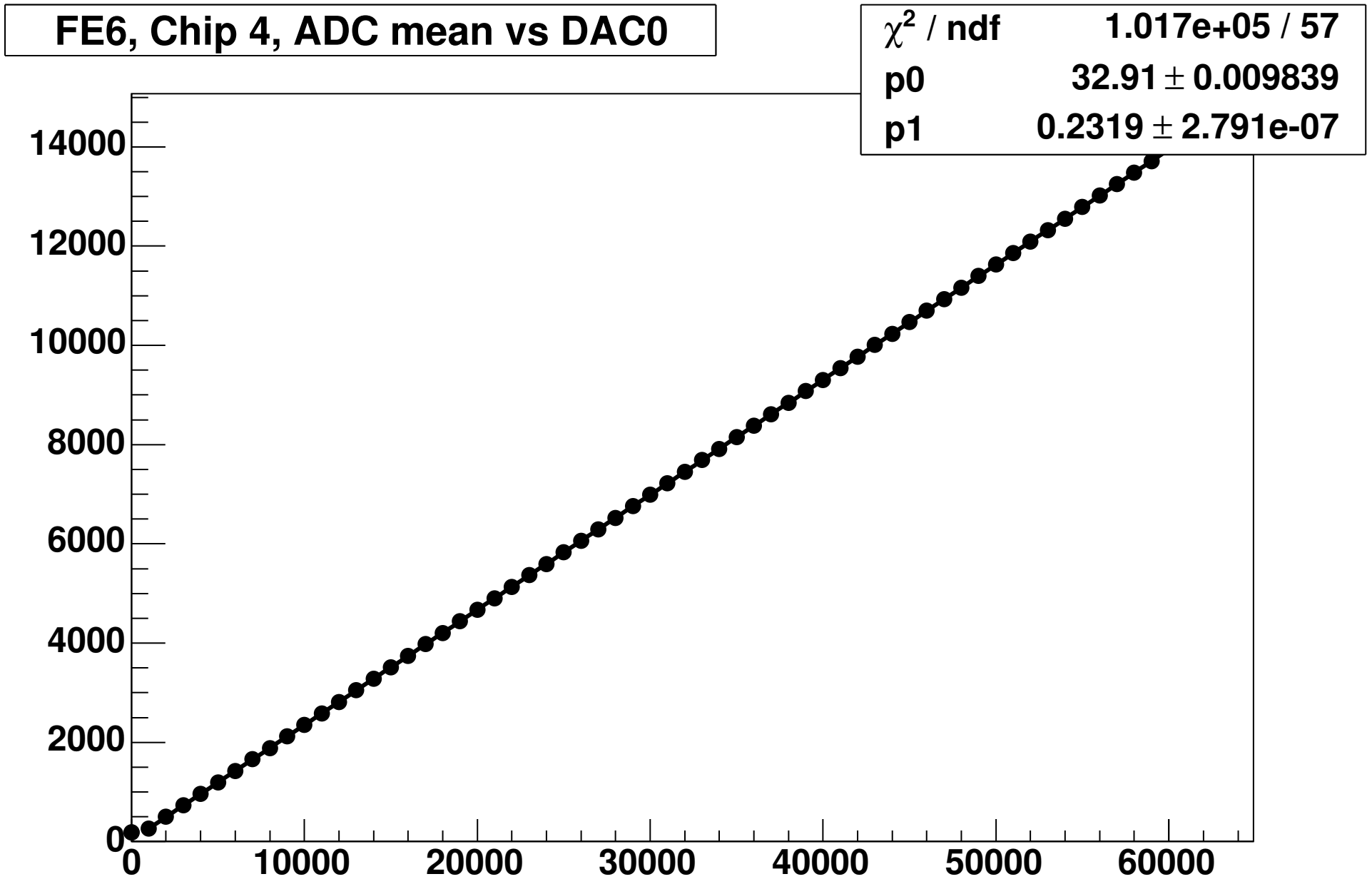

FE6, Chip 3, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

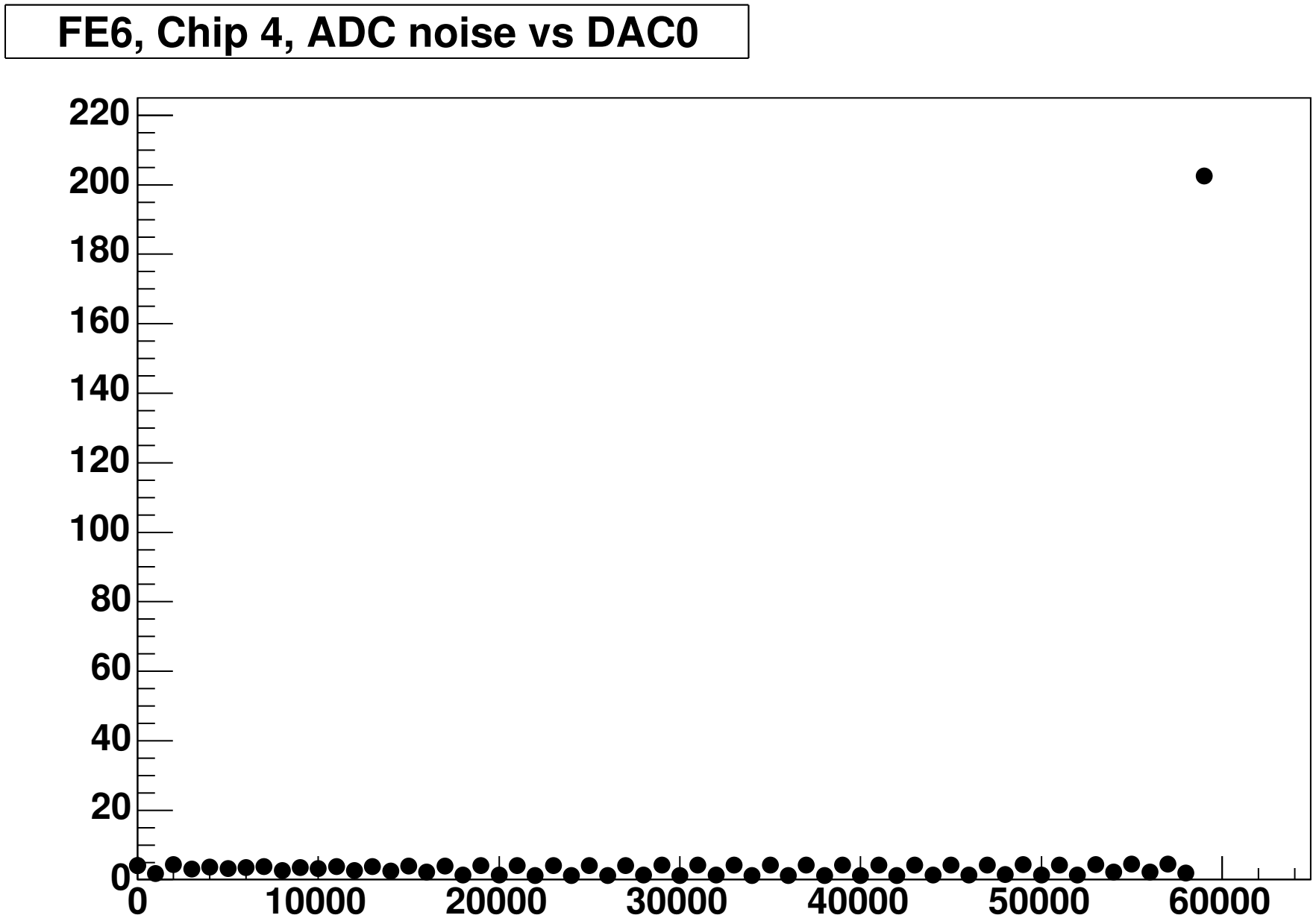

FE6, Chip 3, ADC residuals vs DAC0
2
1
0
-1
-2
-3
-4
0
10000
20000
30000
40000
50000
60000

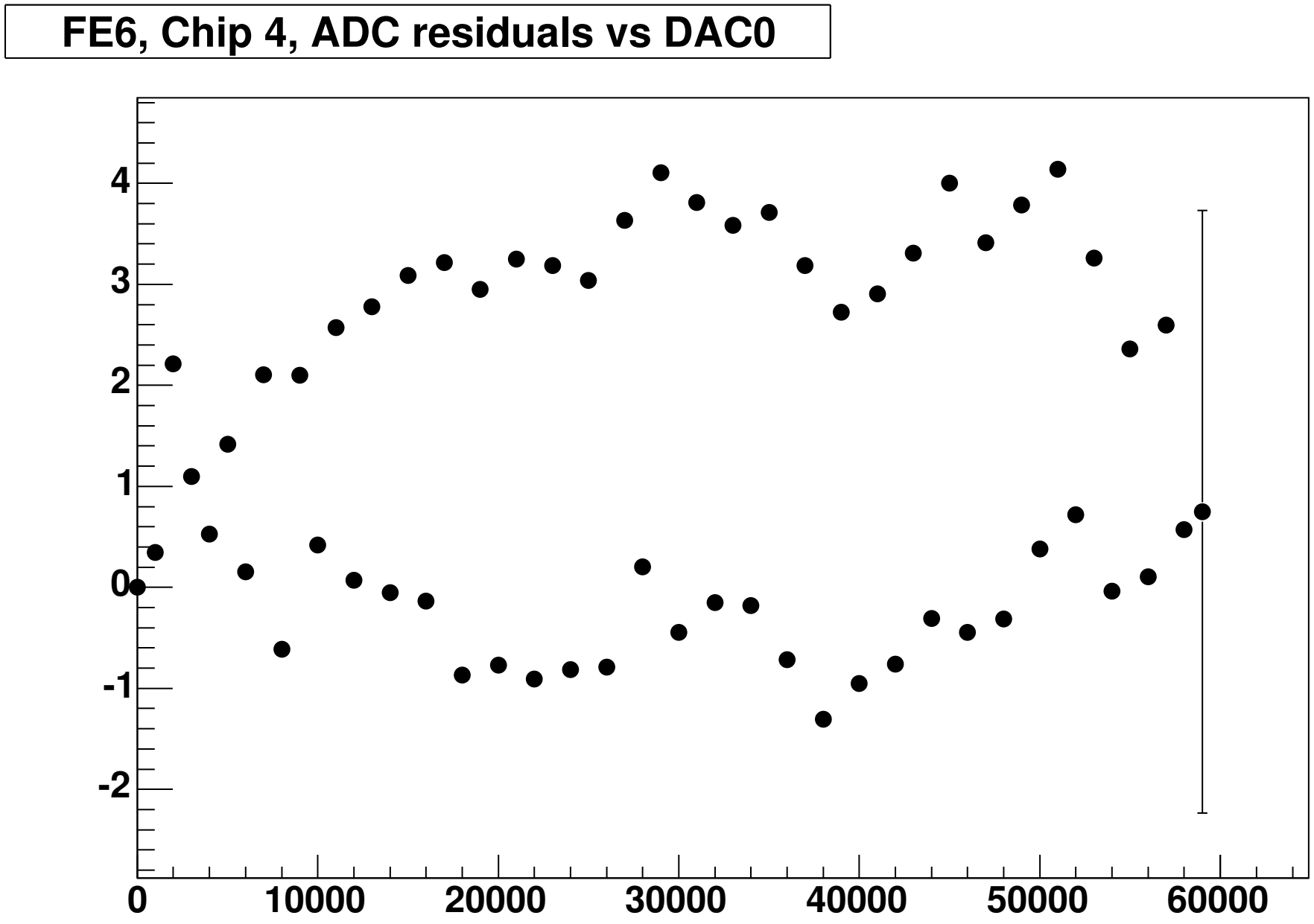

FE6, Chip 3, ADC mean vs DAC1
χ² / ndf 5.086e+04 / 57
p0 191.9 ± 0.003995
p1 -1.376e-06 ± 1.153e-07
192.6
192.4
192.2
192
191.8
191.6
191.4
191.2
191
0
10000
20000
30000
40000
50000
60000

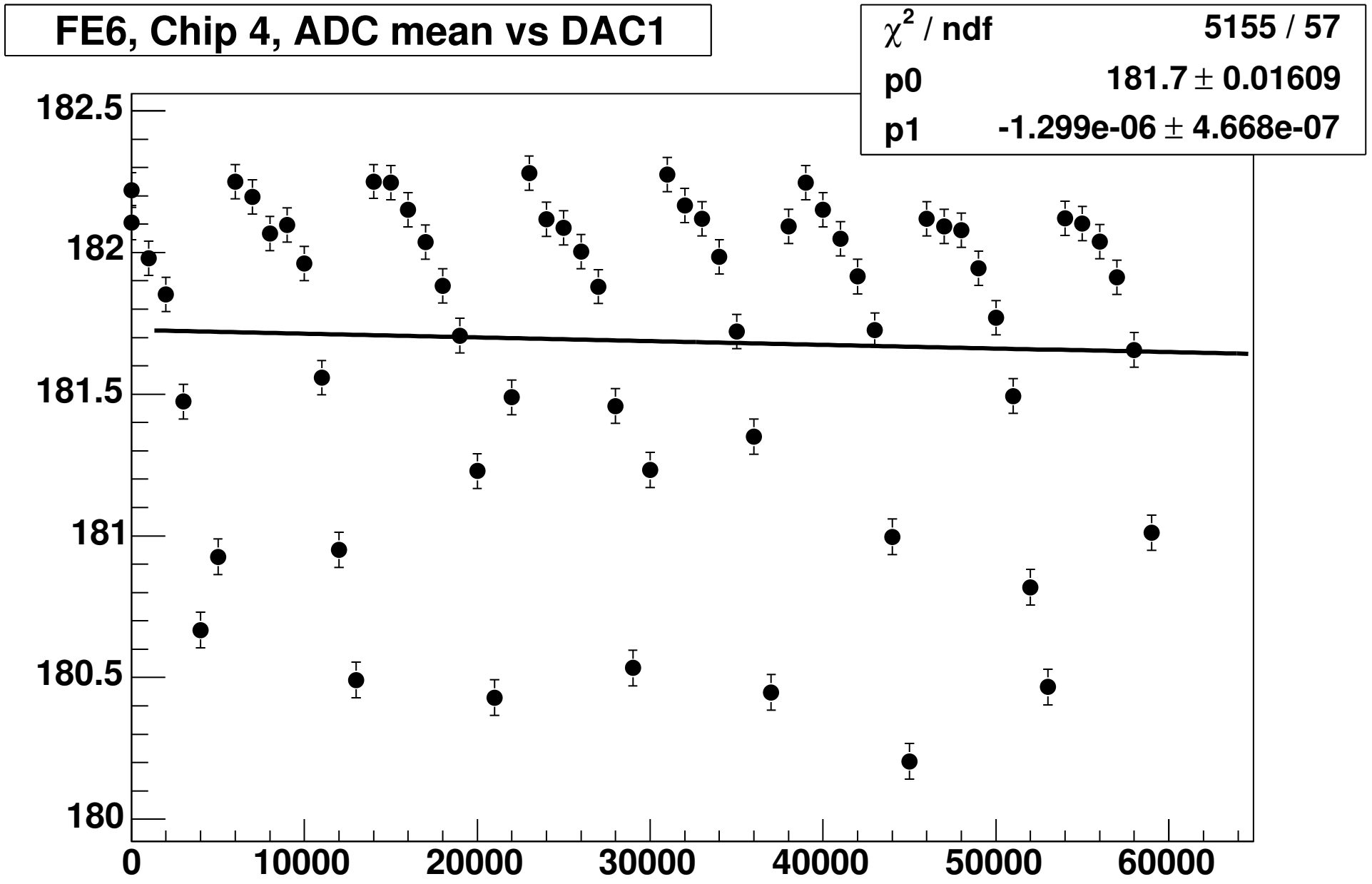

FE6, Chip 3, ADC noise vs DAC1
1.15
1.1
1.05
1
0.95
0.9
0.85
0
10000
20000
30000
40000
50000
60000

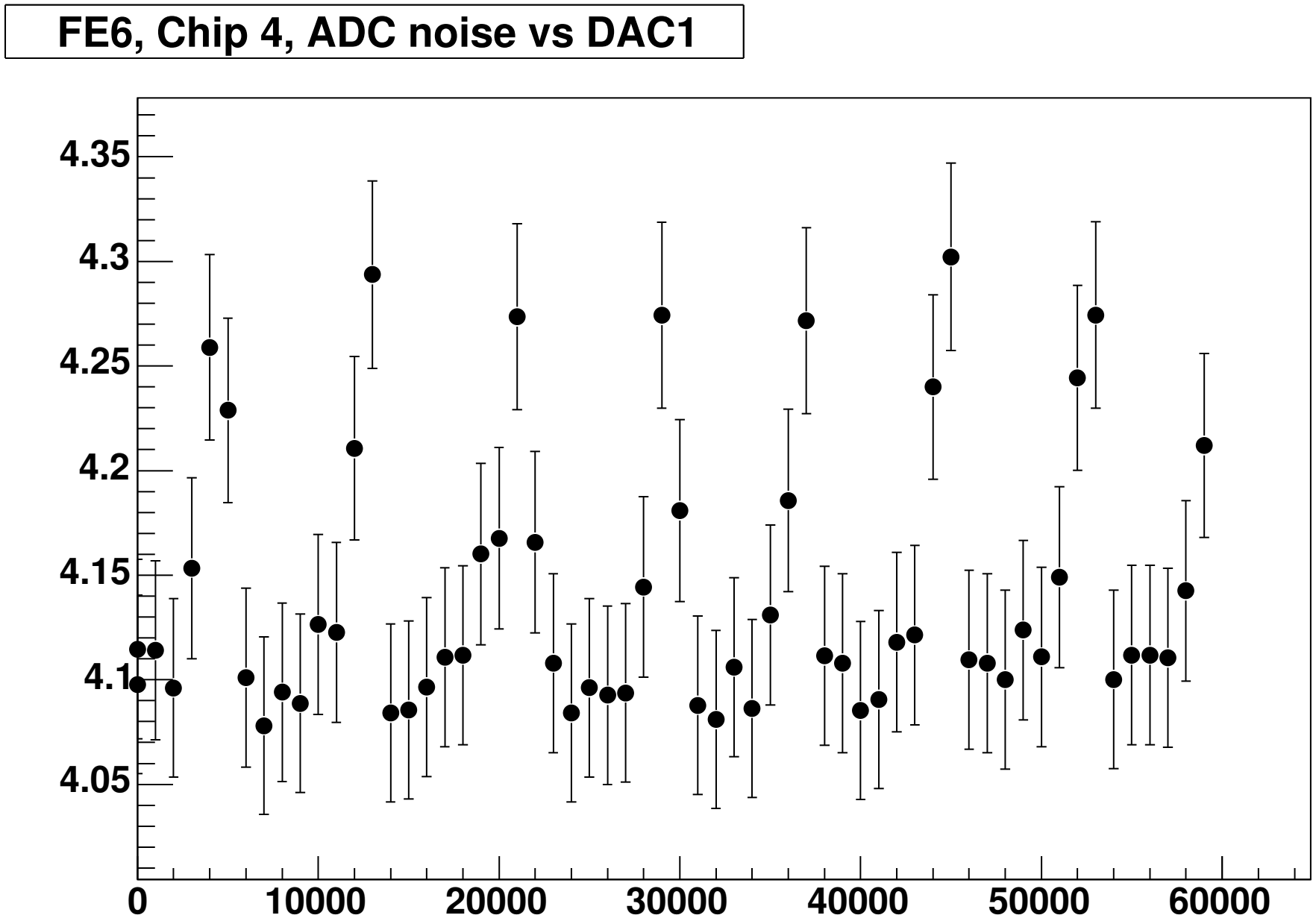

FE6, Chip 3, ADC residuals vs DAC1
0.6
0.4
0.2
-0
-0.2
-0.4
-0.6
-0.8
0
10000
20000
30000
40000
50000
60000

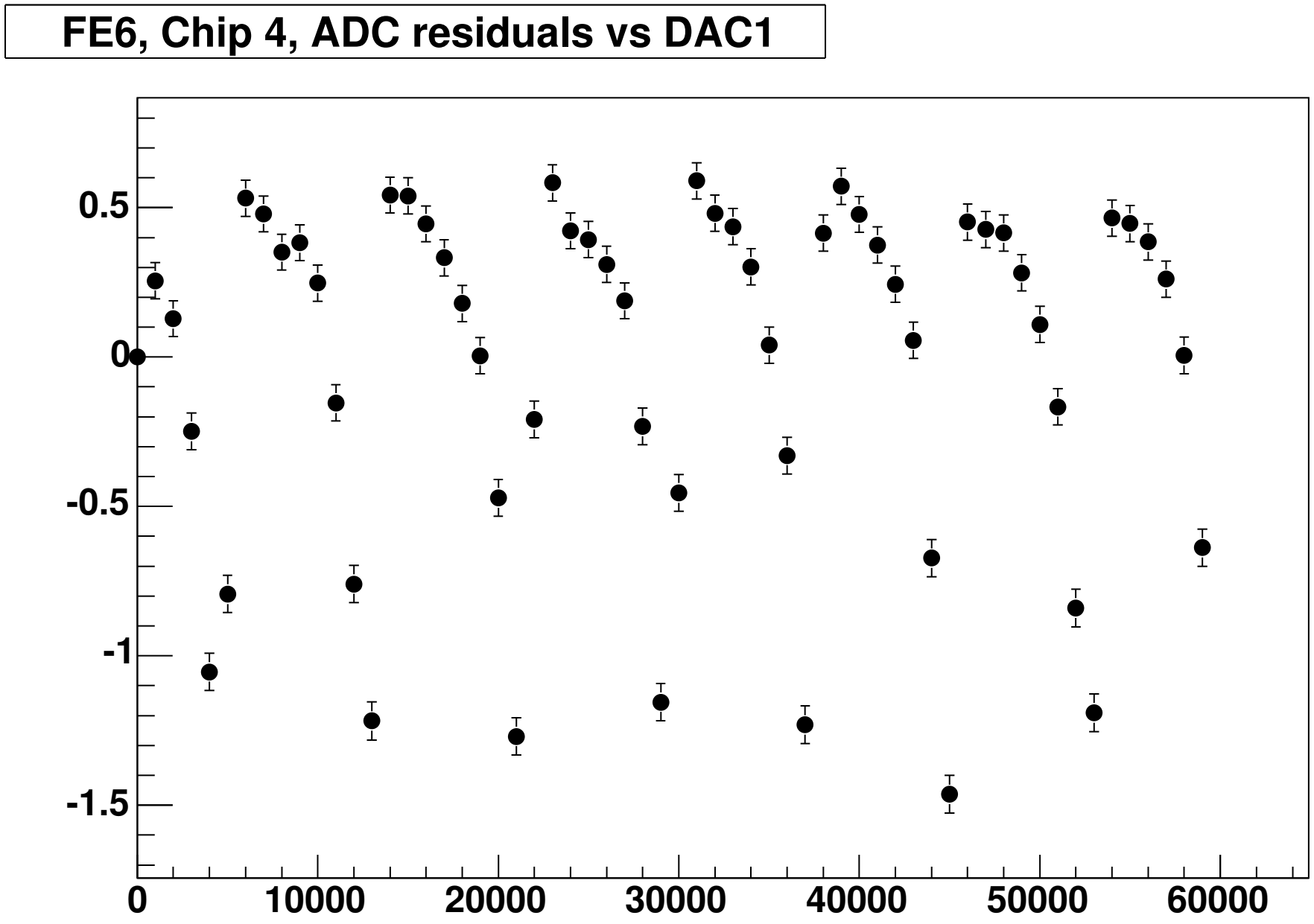

FE6, Chip 4, ADC mean vs DAC0
χ² / ndf 1.017e+05 / 57
p0 32.91 ± 0.009839
p1 0.2319 ± 2.791e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

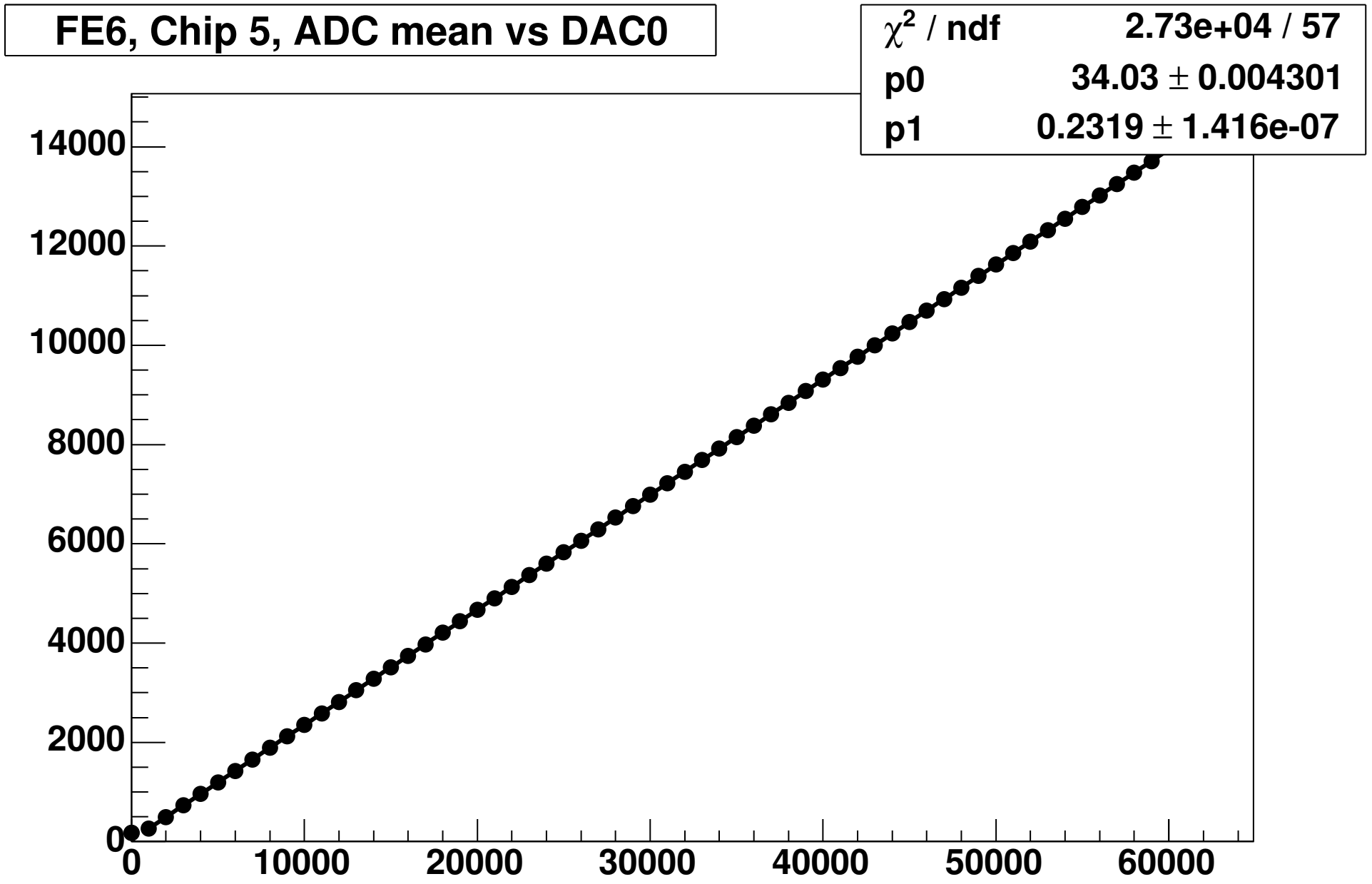

FE6, Chip 4, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

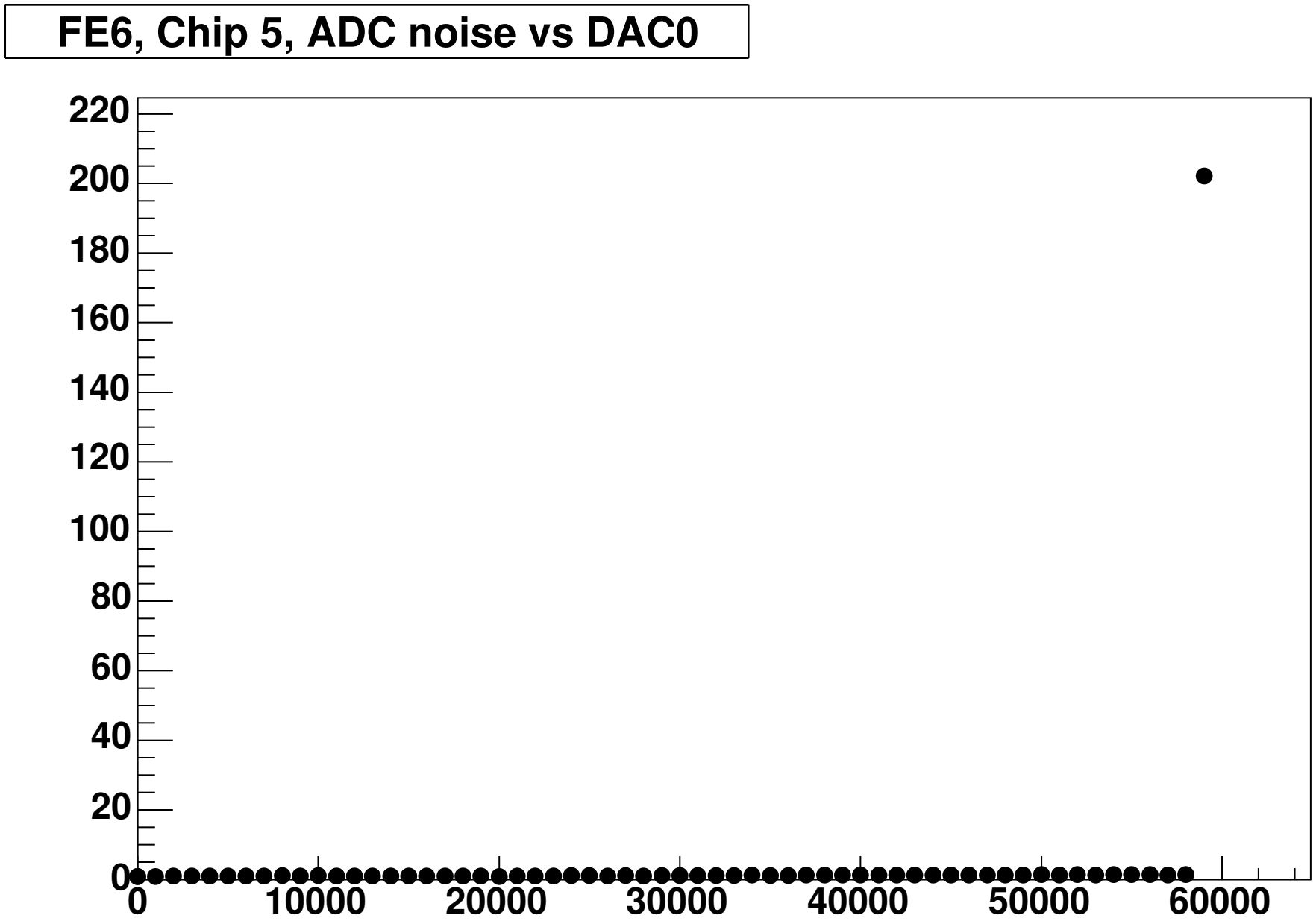

FE6, Chip 4, ADC residuals vs DAC0
4
3
2
1
0
-1
-2
0
10000
20000
30000
40000
50000
60000


FE6, Chip 4, ADC mean vs DAC1
χ² / ndf 5155 / 57
p0 181.7 ± 0.01609
p1 -1.299e-06 ± 4.668e-07
182.5
182
181.5
181
180.5
180
0
10000
20000
30000
40000
50000
60000

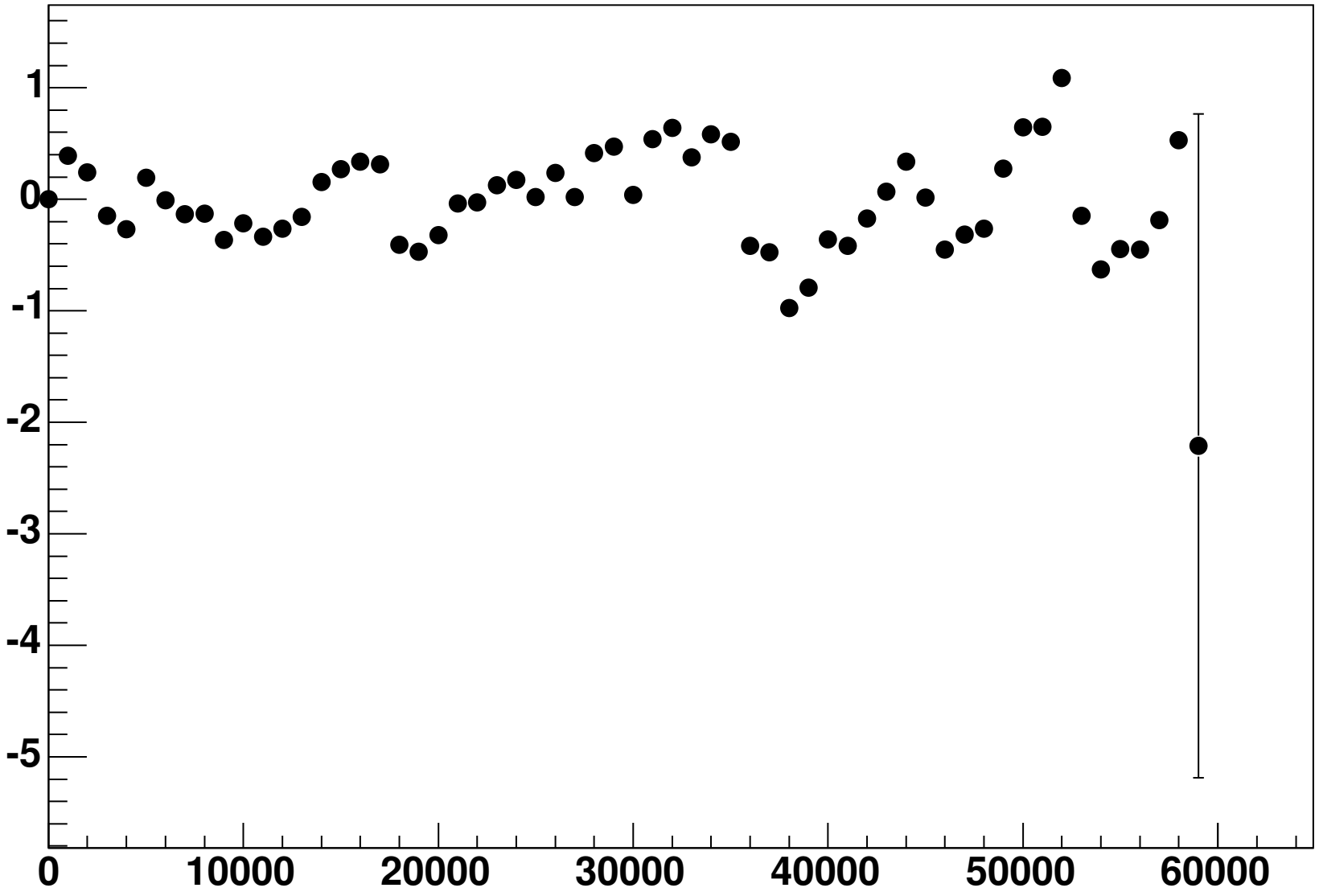

FE6, Chip 4, ADC noise vs DAC1
4.35
4.3
4.25
4.2
4.15
4.1
4.05
0
10000
20000
30000
40000
50000
60000

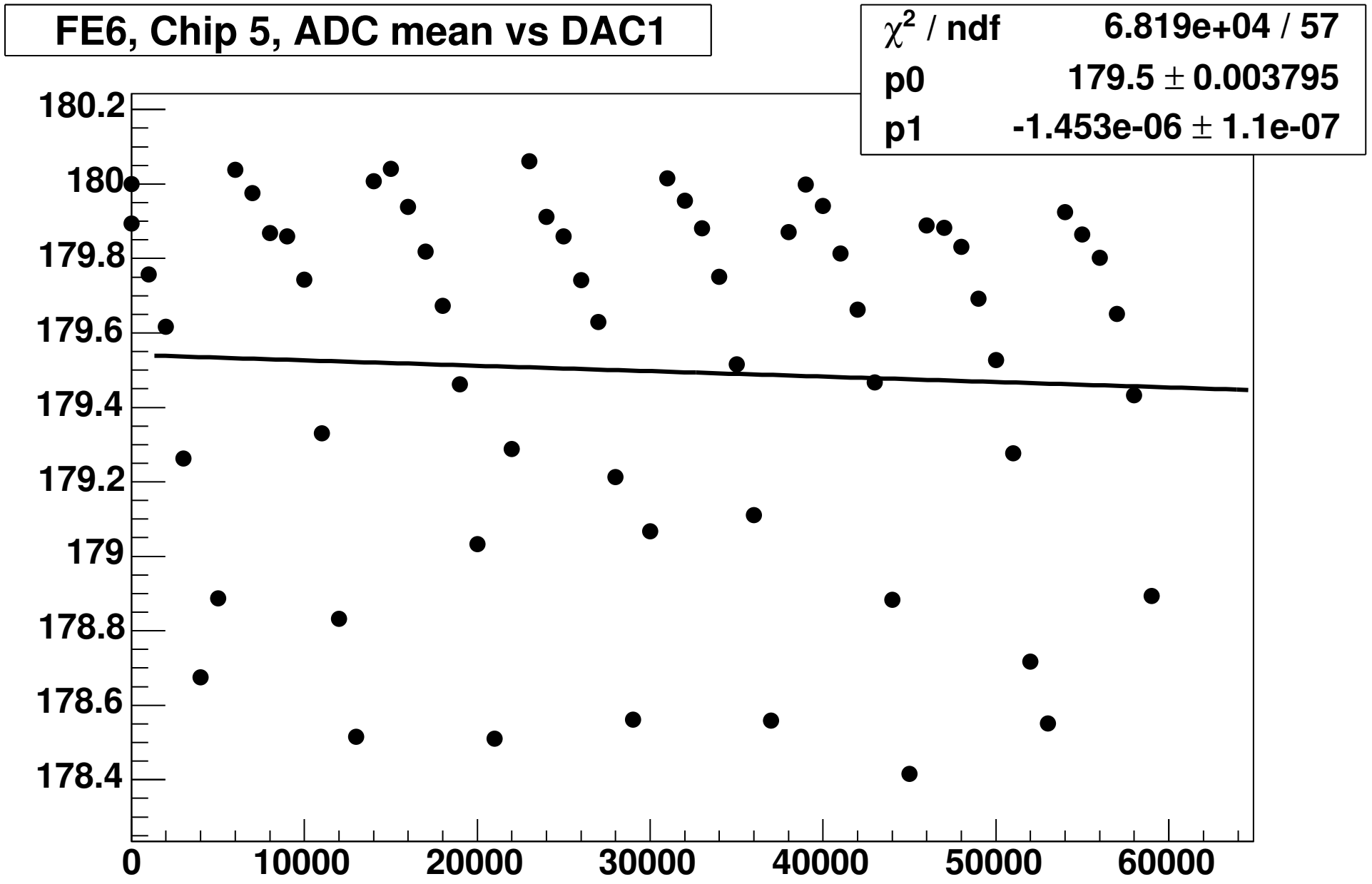

FE6, Chip 4, ADC residuals vs DAC1
0.5
0
-0.5
-1
-1.5
0
10000
20000
30000
40000
50000
60000

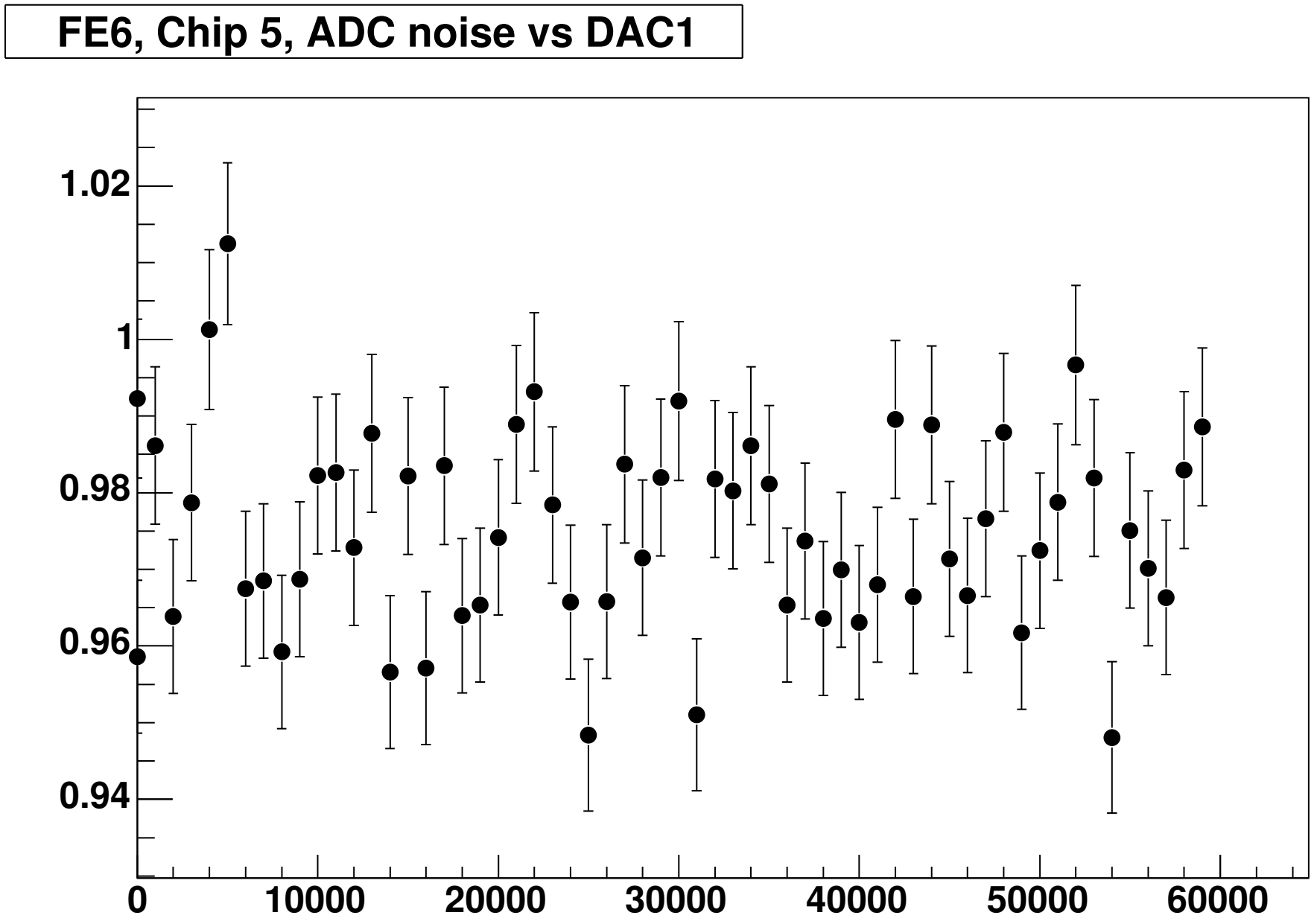

FE6, Chip 5, ADC mean vs DAC0
χ² / ndf 2.73e+04 / 57
p0 34.03 ± 0.004301
p1 0.2319 ± 1.416e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

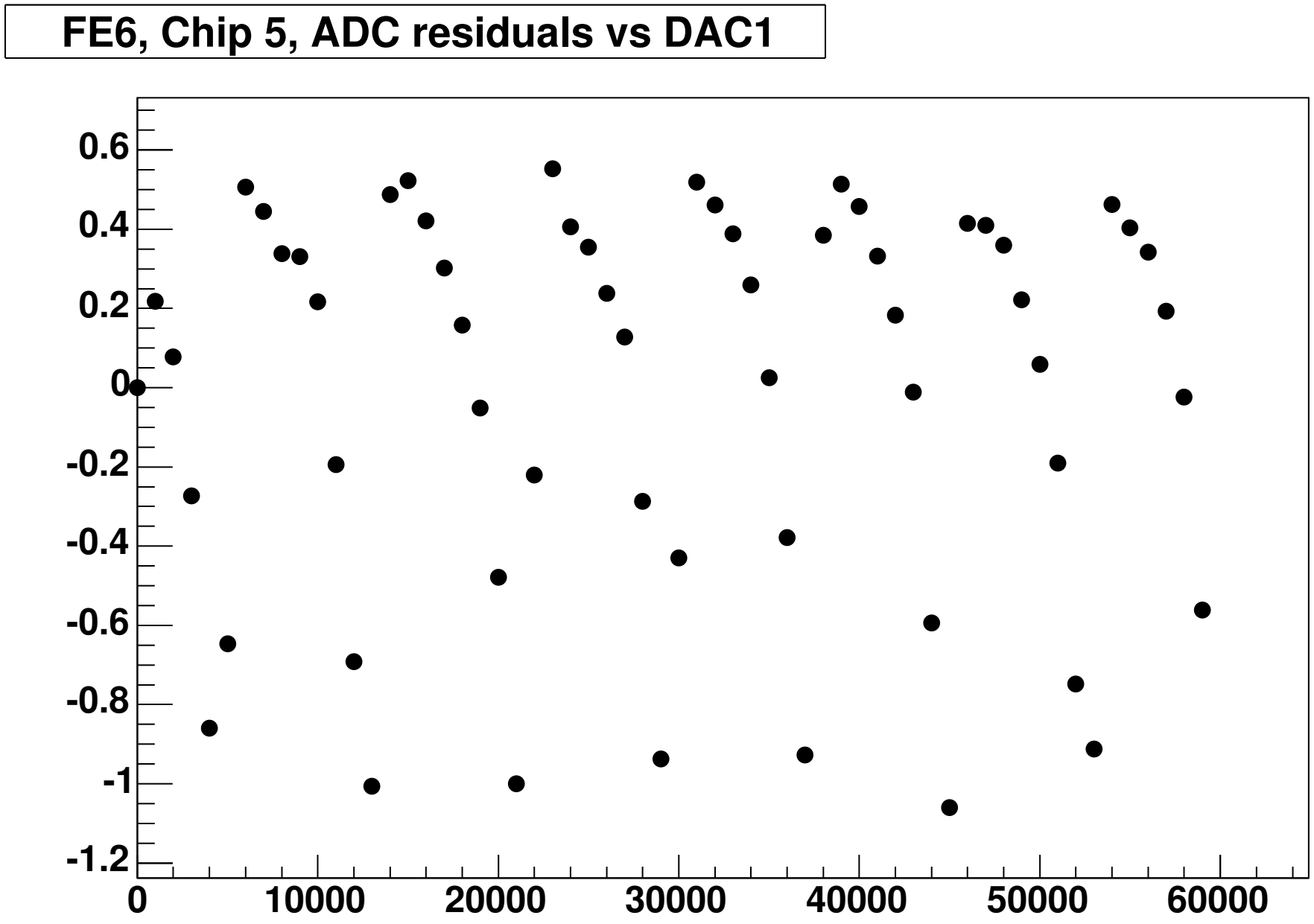

FE6, Chip 5, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

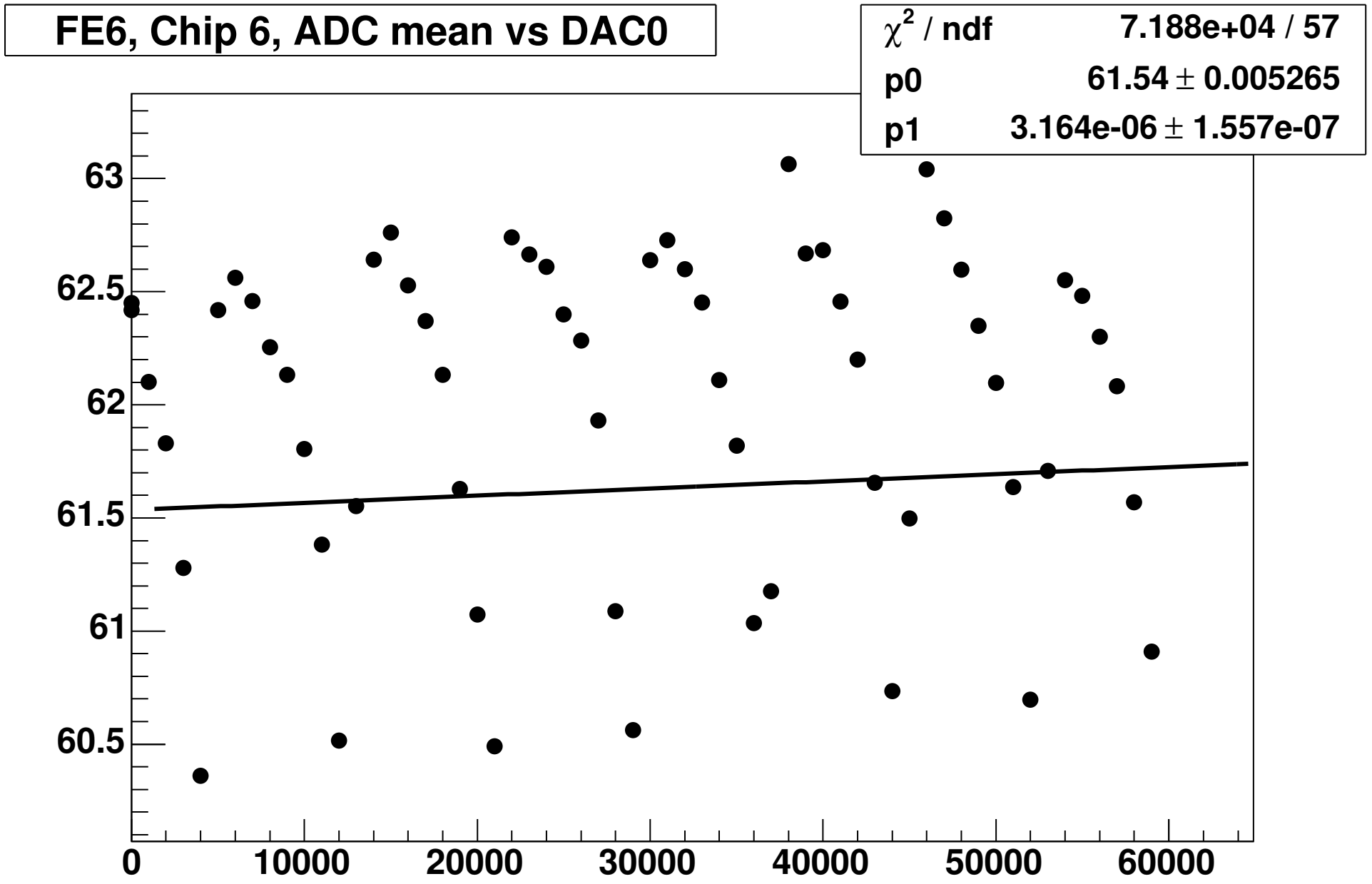
FE6, Chip 5, ADC residuals vs DAC0

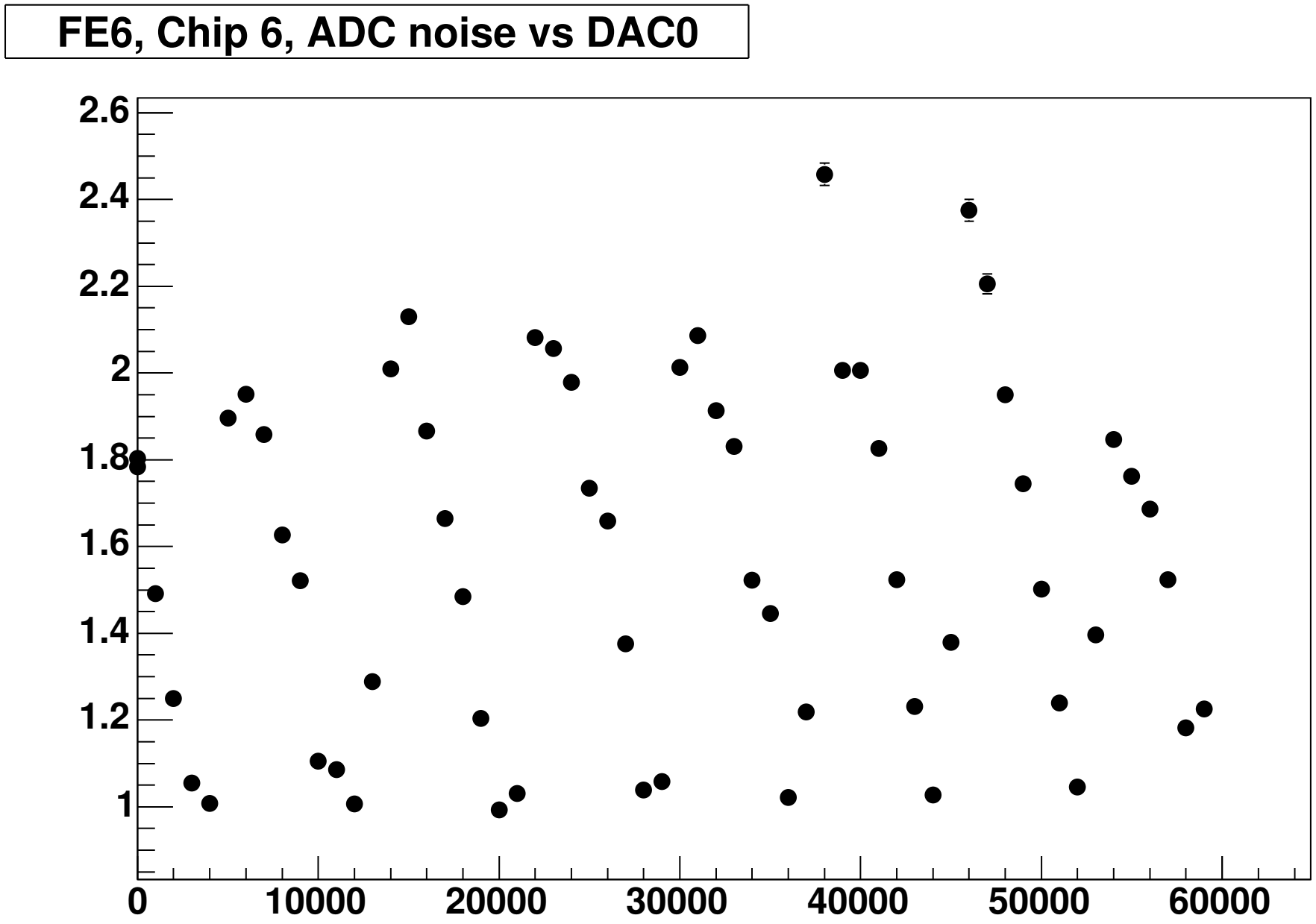


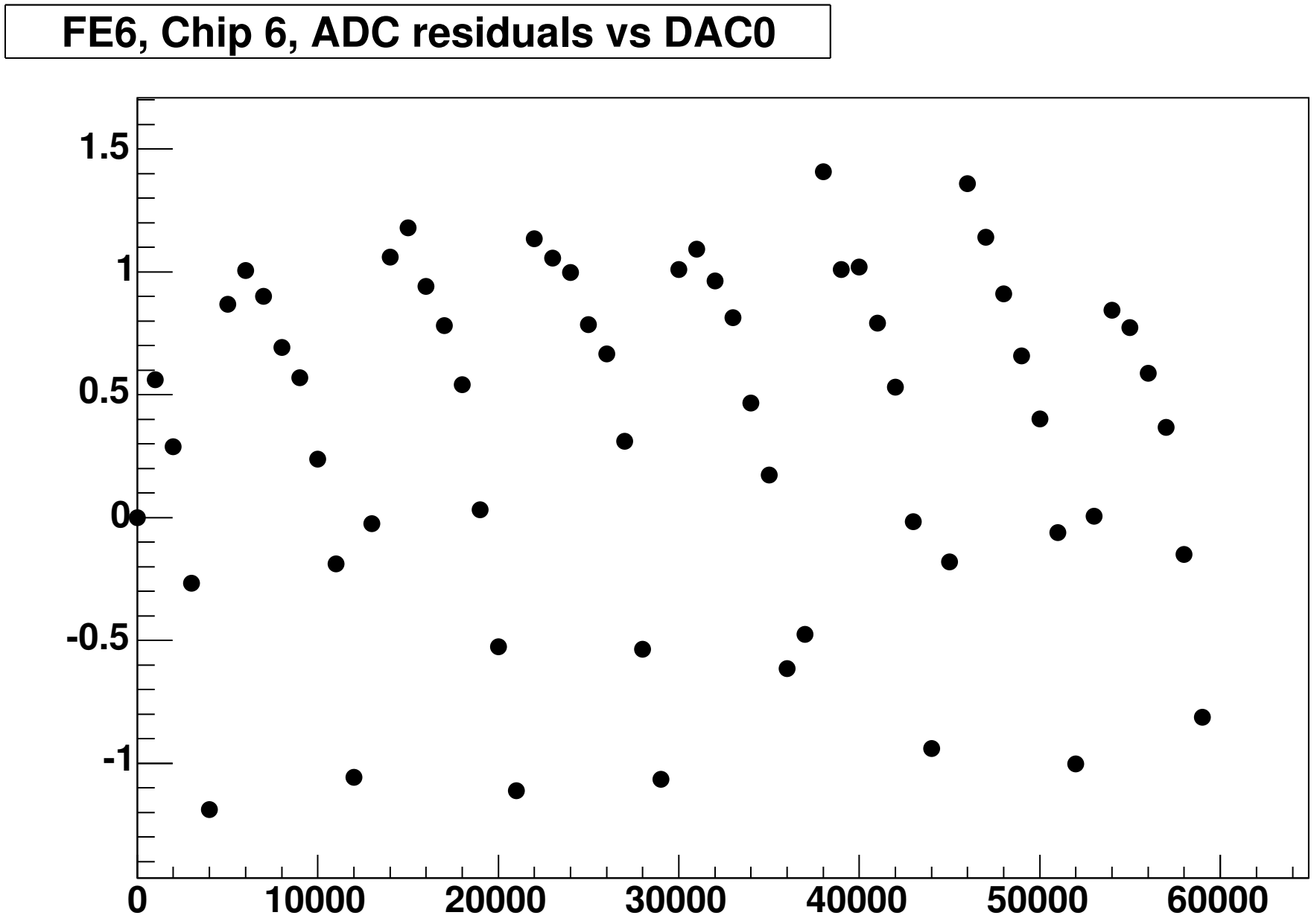

FE6, Chip 5, ADC mean vs DAC1
χ² / ndf 6.819e+04 / 57
p0 179.5 ± 0.003795
p1 -1.453e-06 ± 1.1e-07
180.2
180
179.8
179.6
179.4
179.2
179
178.8
178.6
178.4
0
10000
20000
30000
40000
50000
60000

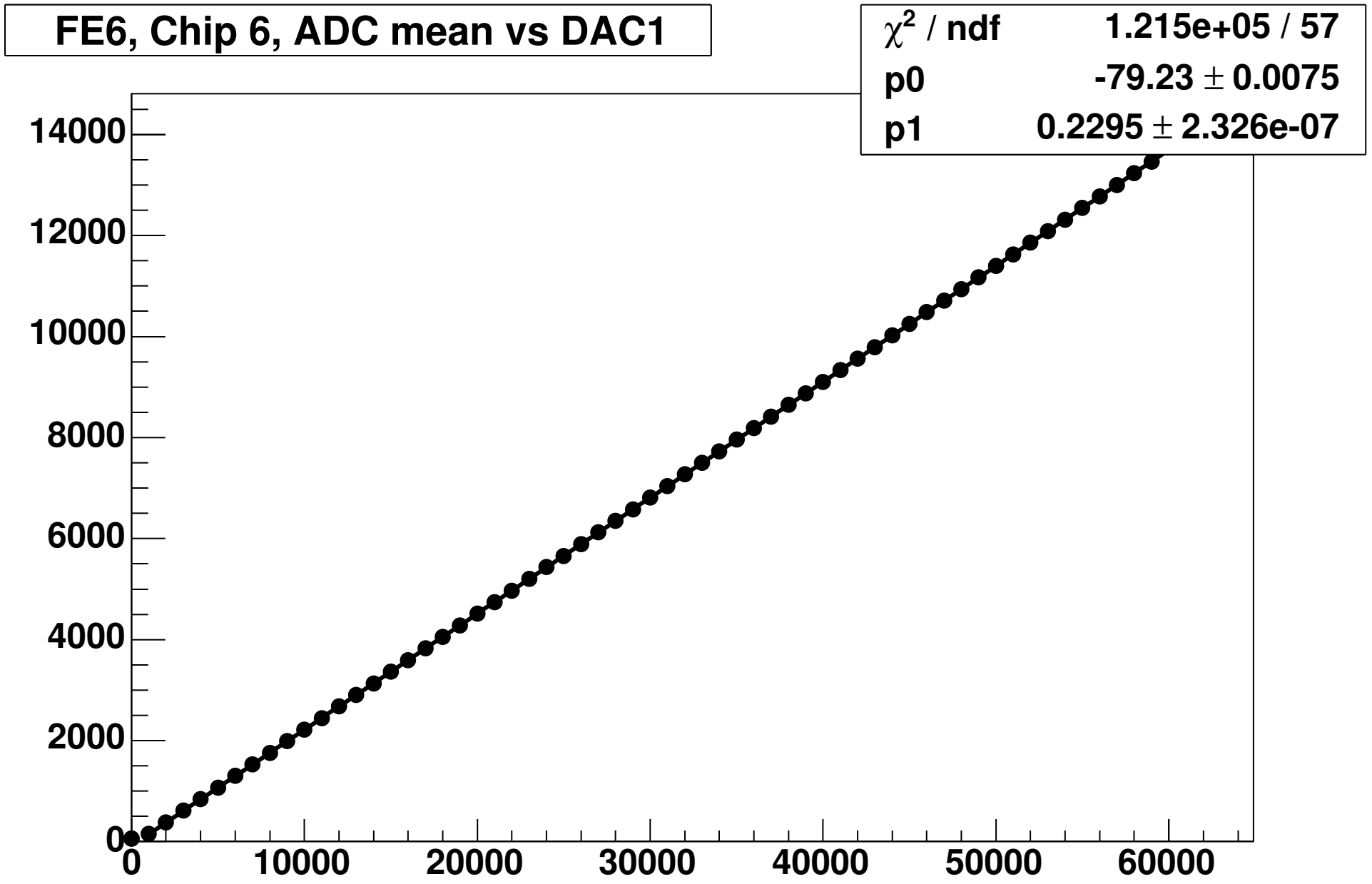

FE6, Chip 5, ADC noise vs DAC1
1.02
1
0.98
0.96
0.94
0
10000
20000
30000
40000
50000
60000

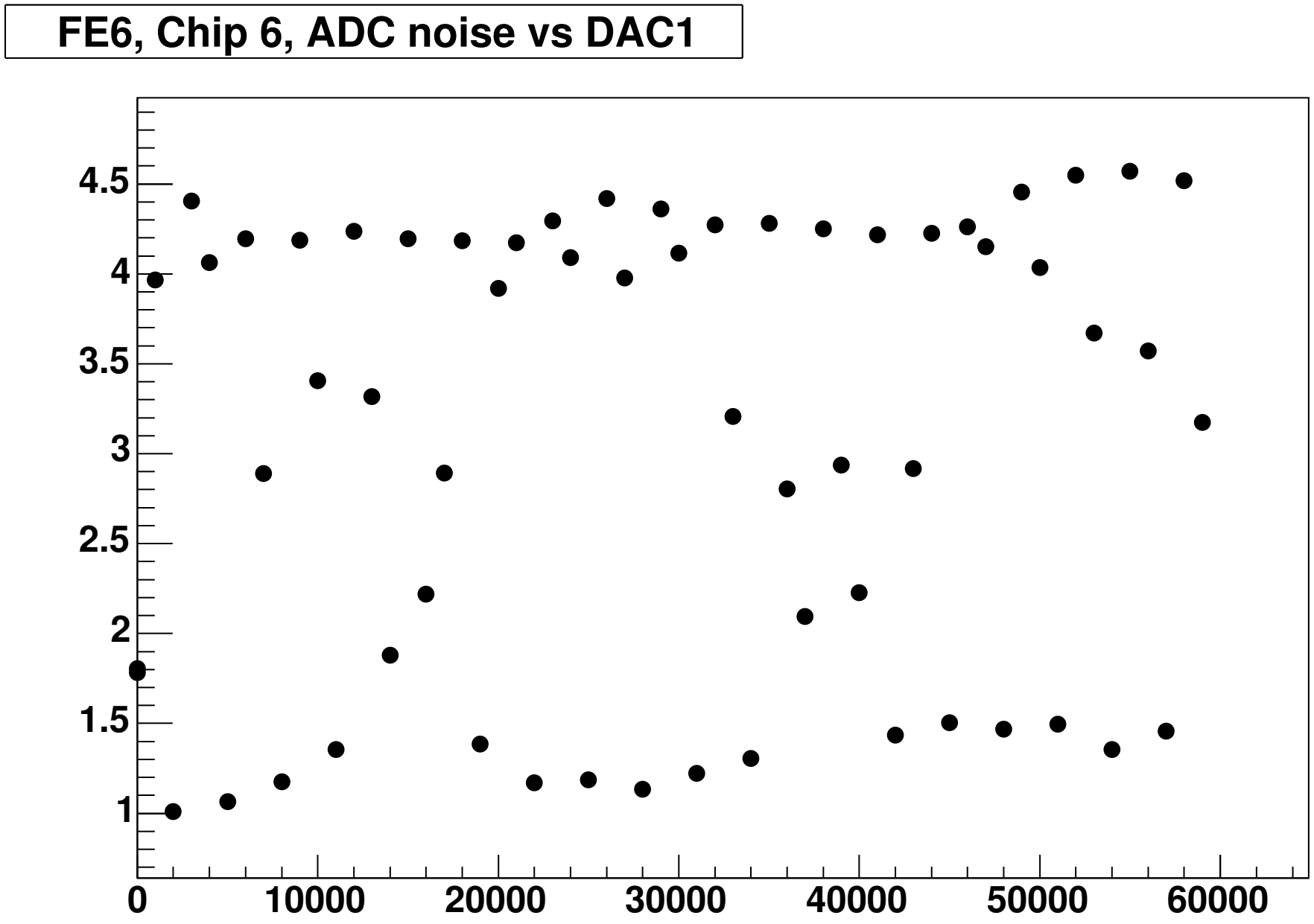

FE6, Chip 5, ADC residuals vs DAC1
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
0
10000
20000
30000
40000
50000
60000

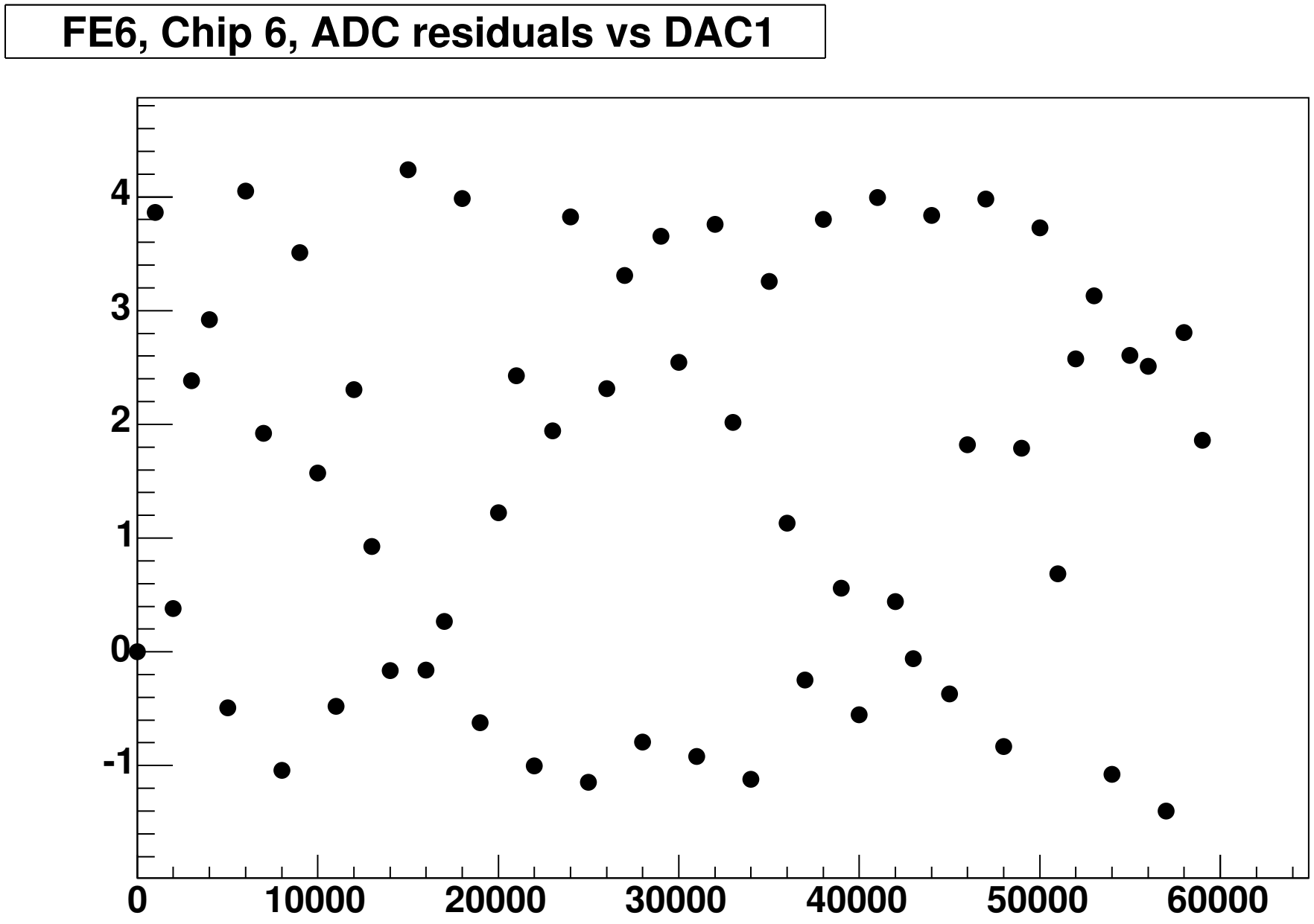

FE6, Chip 6, ADC mean vs DAC0
χ² / ndf 7.188e+04 / 57
p0 61.54 ± 0.005265
p1 3.164e-06 ± 1.557e-07
63
62.5
62
61.5
61
60.5
0
10000
20000
30000
40000
50000
60000

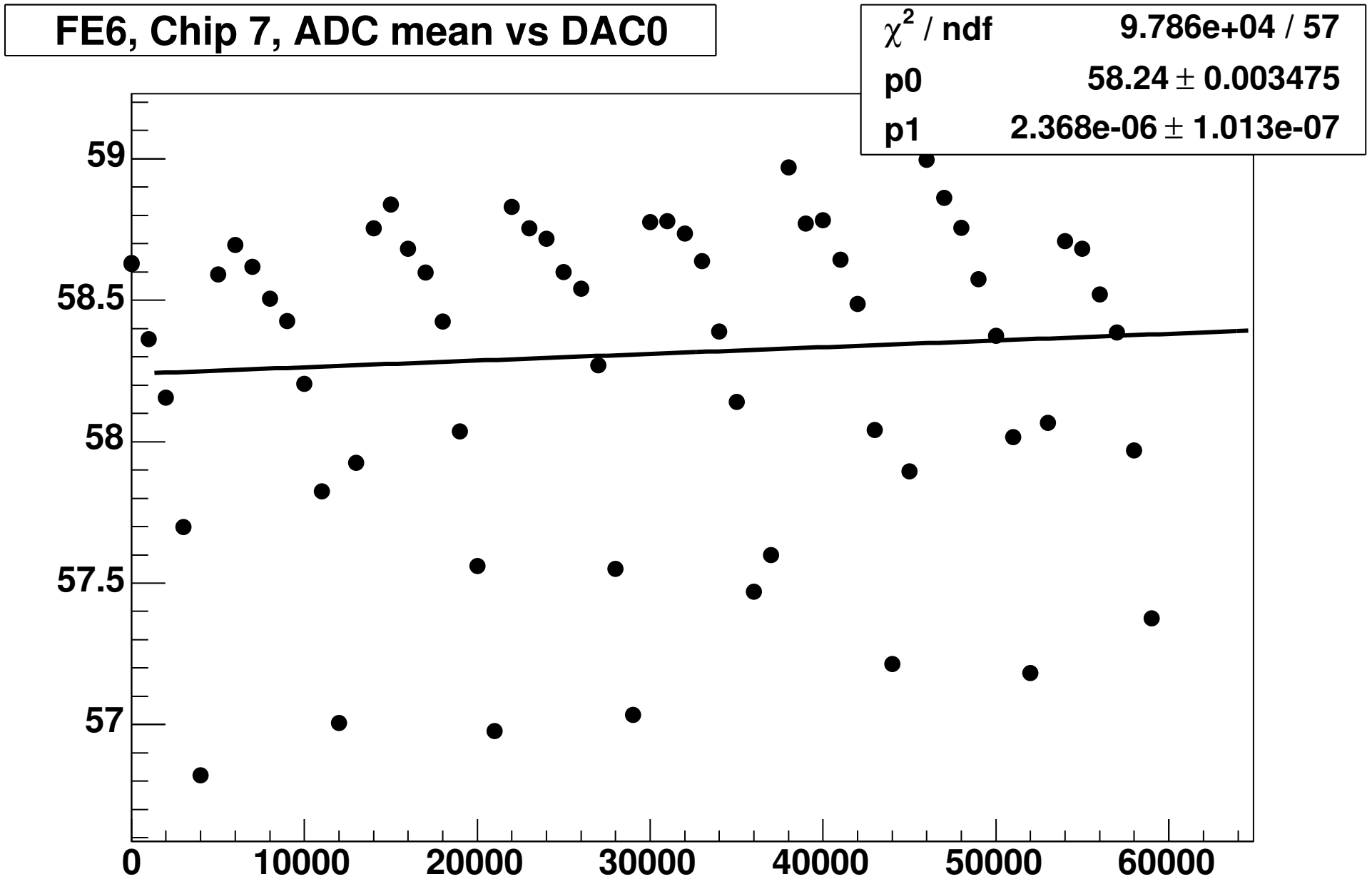

FE6, Chip 6, ADC noise vs DAC0
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0
10000
20000
30000
40000
50000
60000

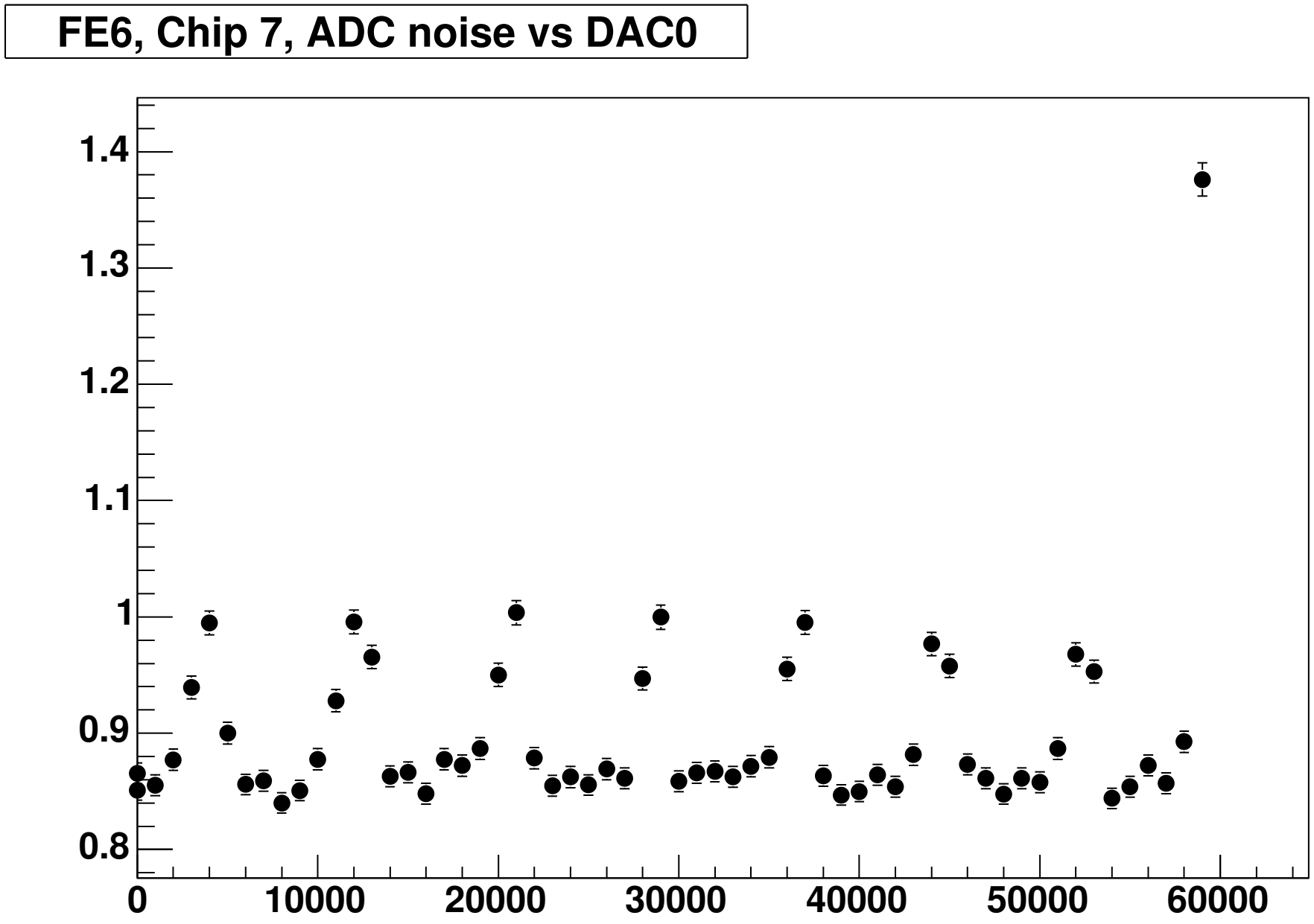

FE6, Chip 6, ADC residuals vs DAC0
1.5
1
0.5
0
-0.5
-1
0
10000
20000
30000
40000
50000
60000

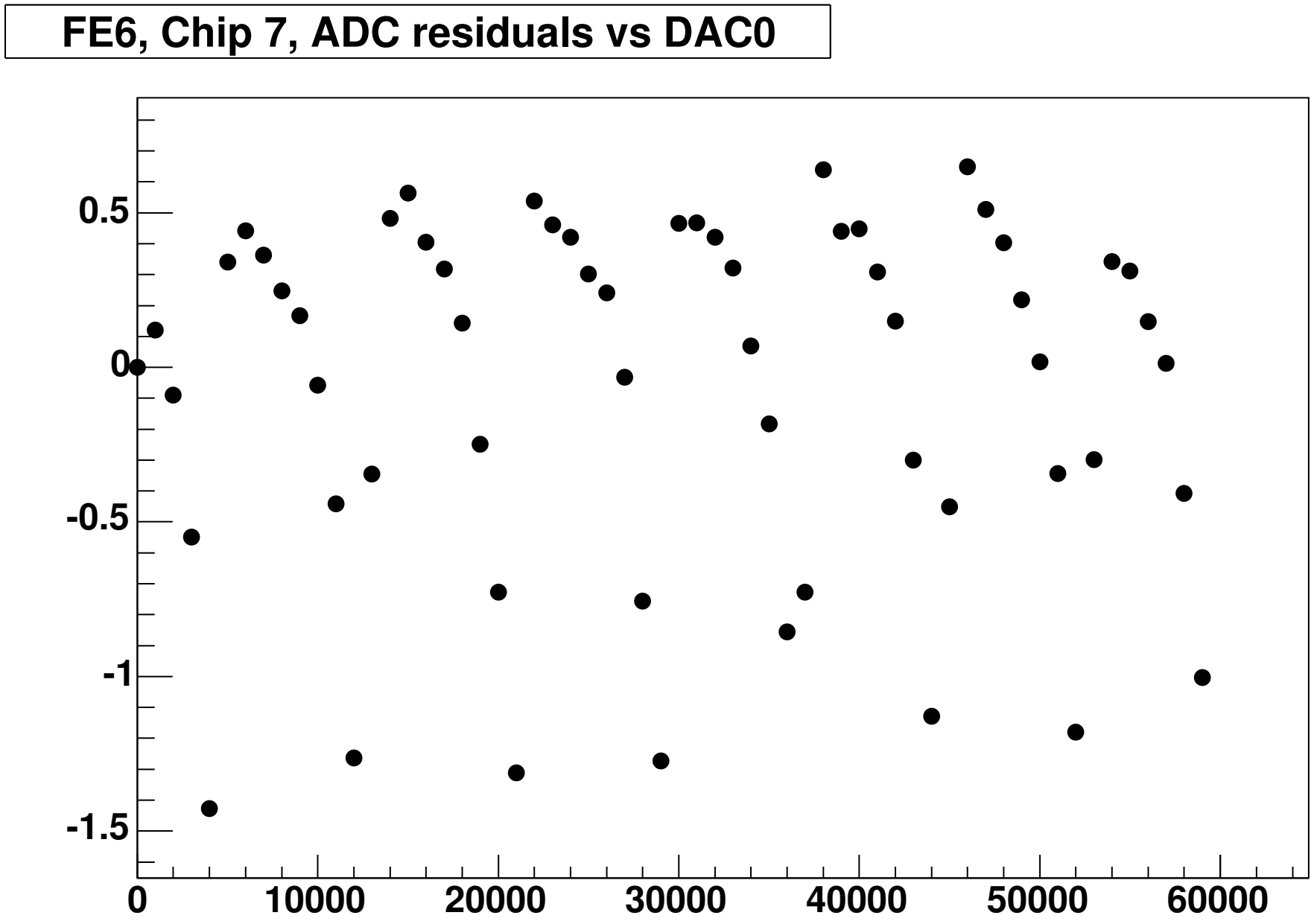

FE6, Chip 6, ADC mean vs DAC1
χ² / ndf 1.215e+05 / 57
p0 -79.23 ± 0.0075
p1 0.2295 ± 2.326e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

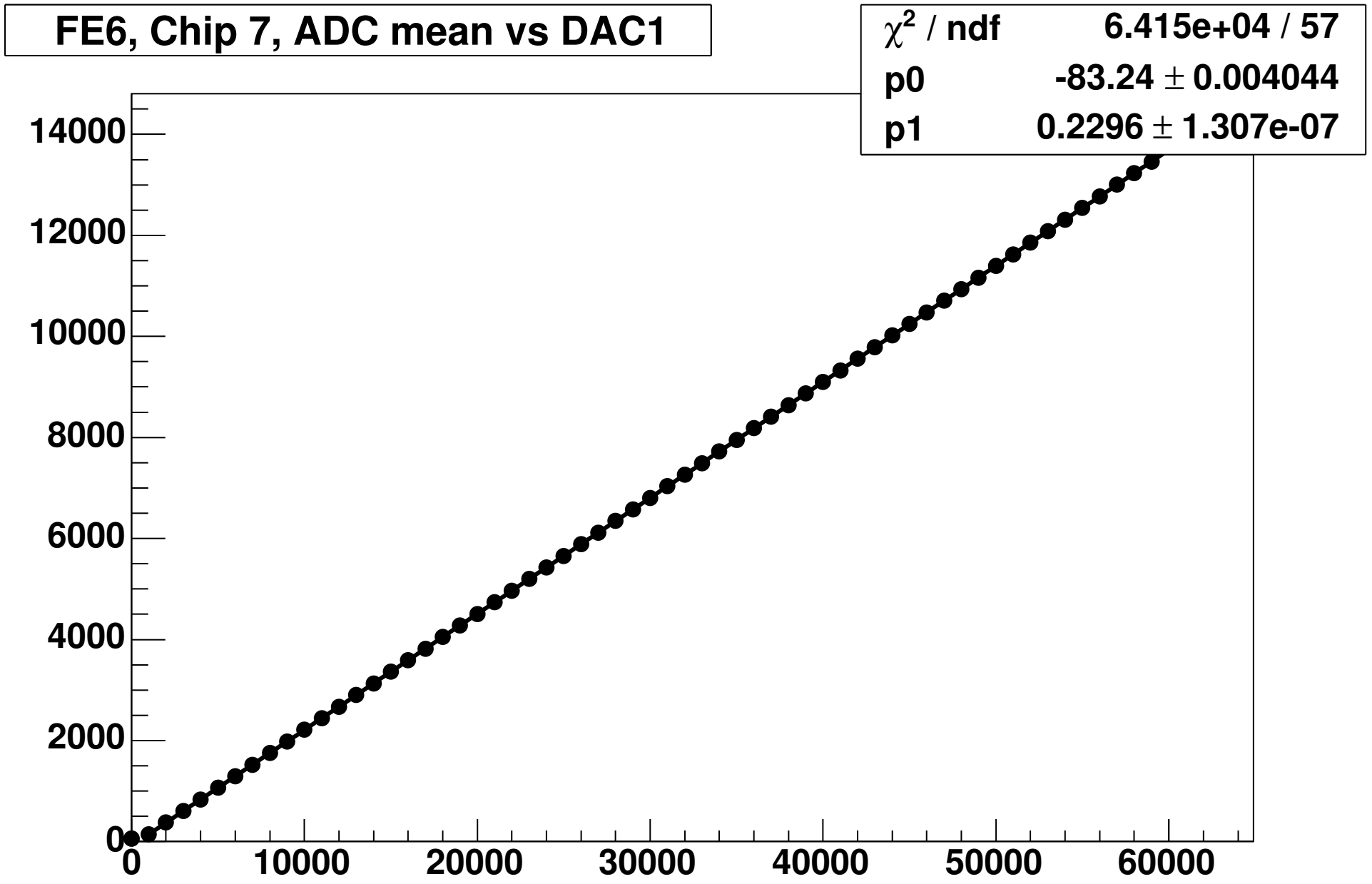

FE6, Chip 6, ADC noise vs DAC1
4.5
4
3.5
3
2.5
2
1.5
1
0
10000
20000
30000
40000
50000
60000

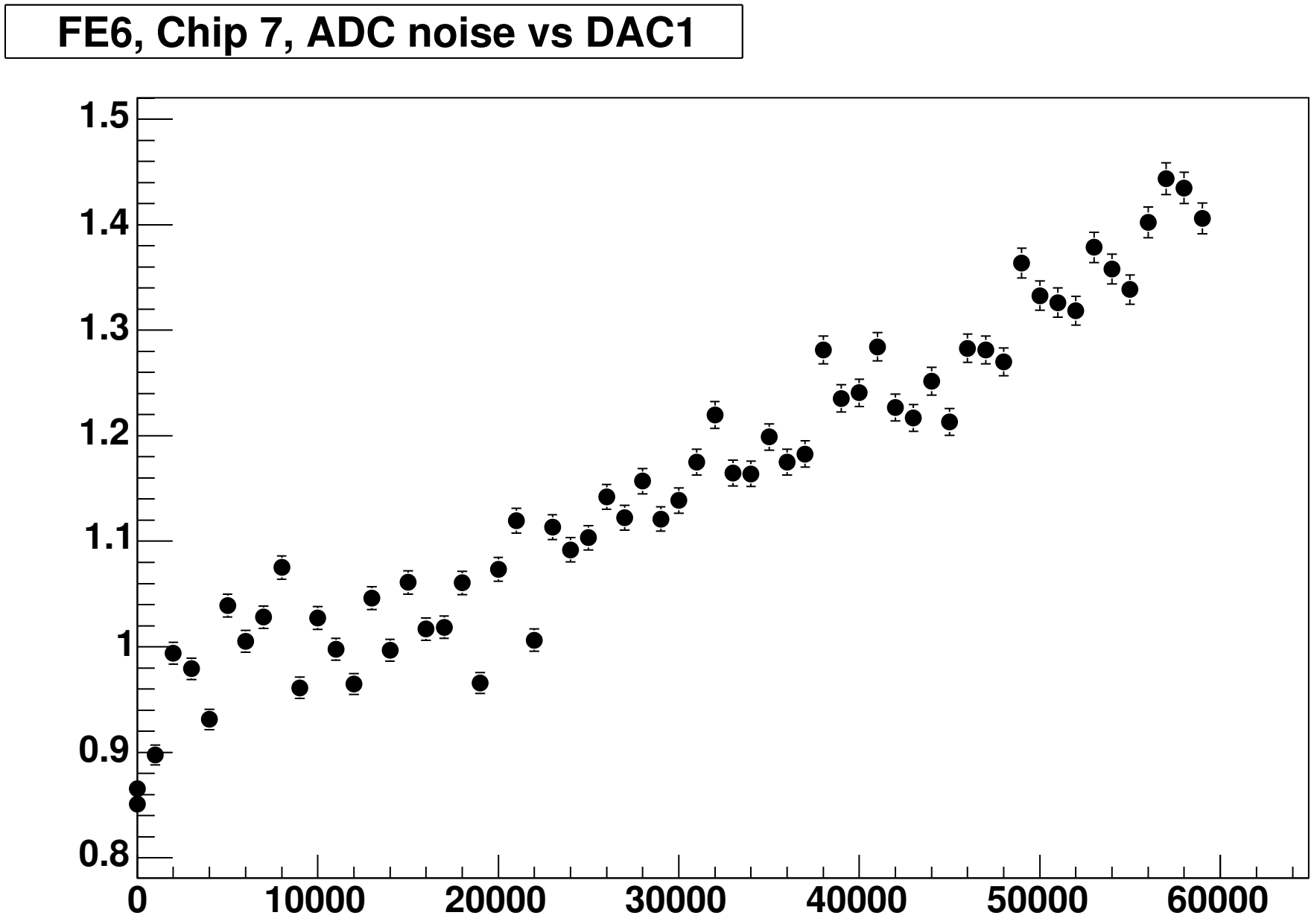

FE6, Chip 6, ADC residuals vs DAC1
4
3
2
1
0
-1
0
10000
20000
30000
40000
50000
60000

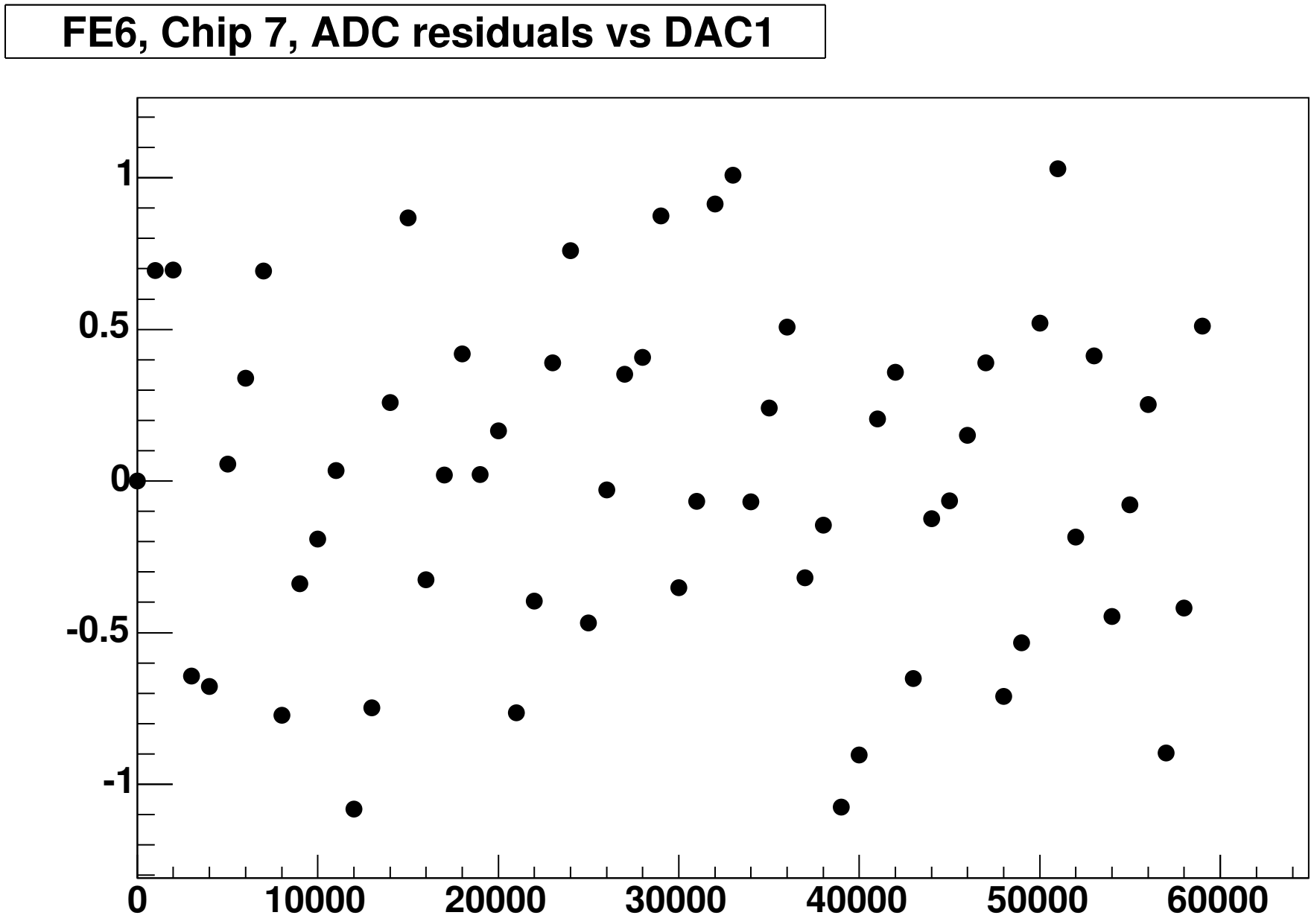

FE6, Chip 7, ADC mean vs DAC0
χ² / ndf 9.786e+04 / 57
p0 58.24 ± 0.003475
p1 2.368e-06 ± 1.013e-07
59
58.5
58
57.5
57
0
10000
20000
30000
40000
50000
60000

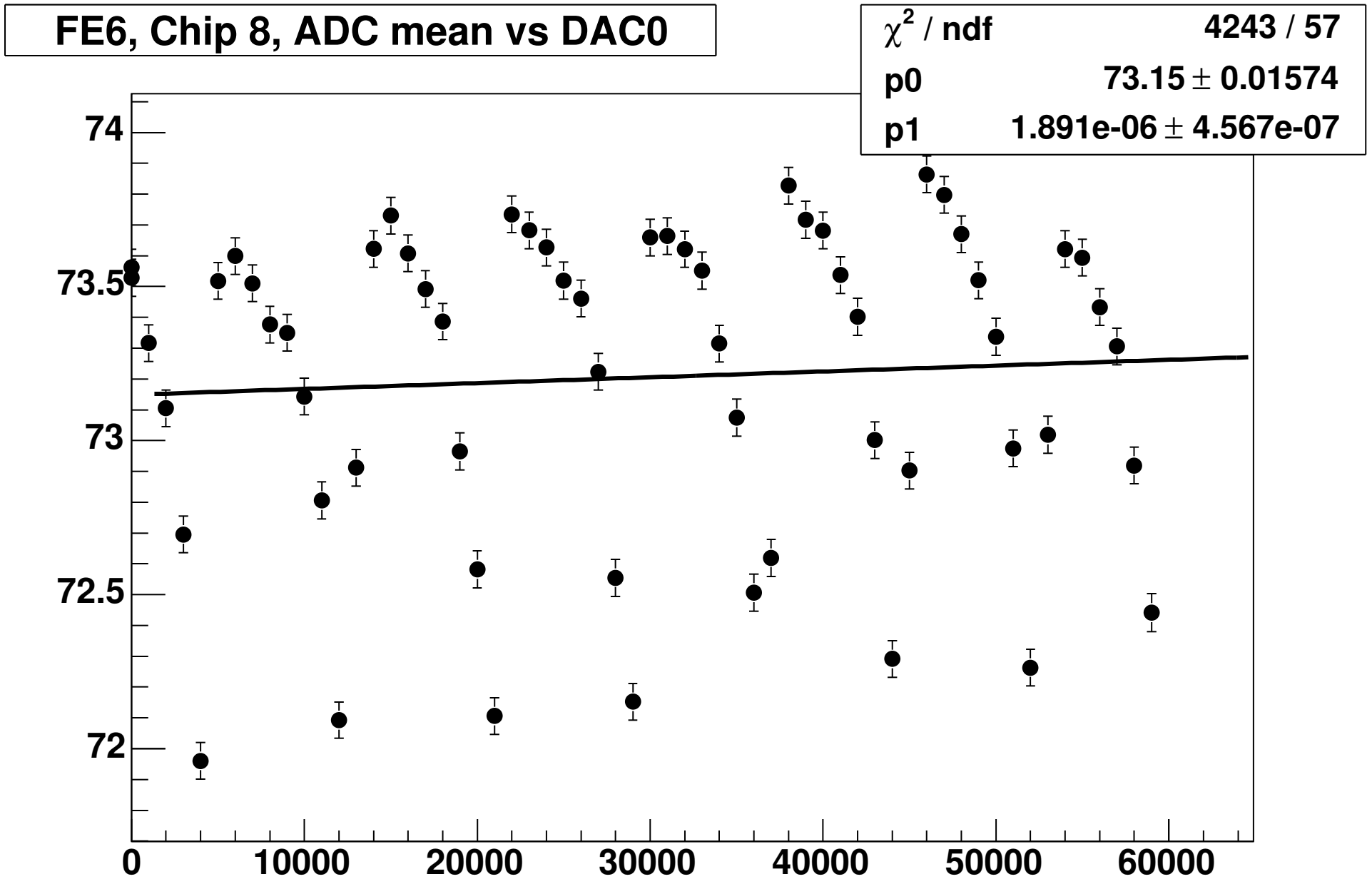

FE6, Chip 7, ADC noise vs DAC0
1.4
1.3
1.2
1.1
1
0.9
0.8
0
10000
20000
30000
40000
50000
60000

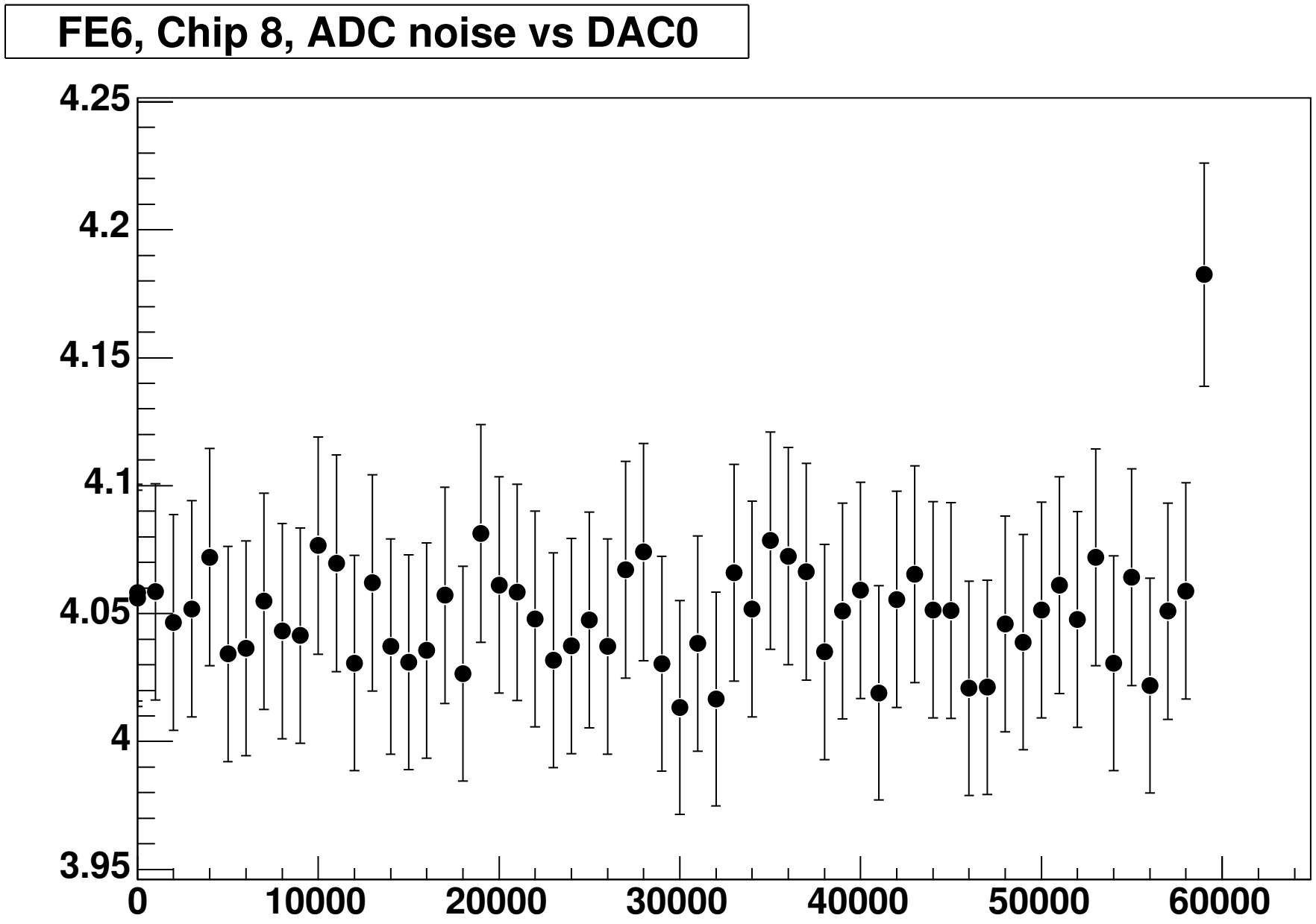

FE6, Chip 7, ADC residuals vs DAC0
0.5
0
-0.5
-1
-1.5
0
10000
20000
30000
40000
50000
60000

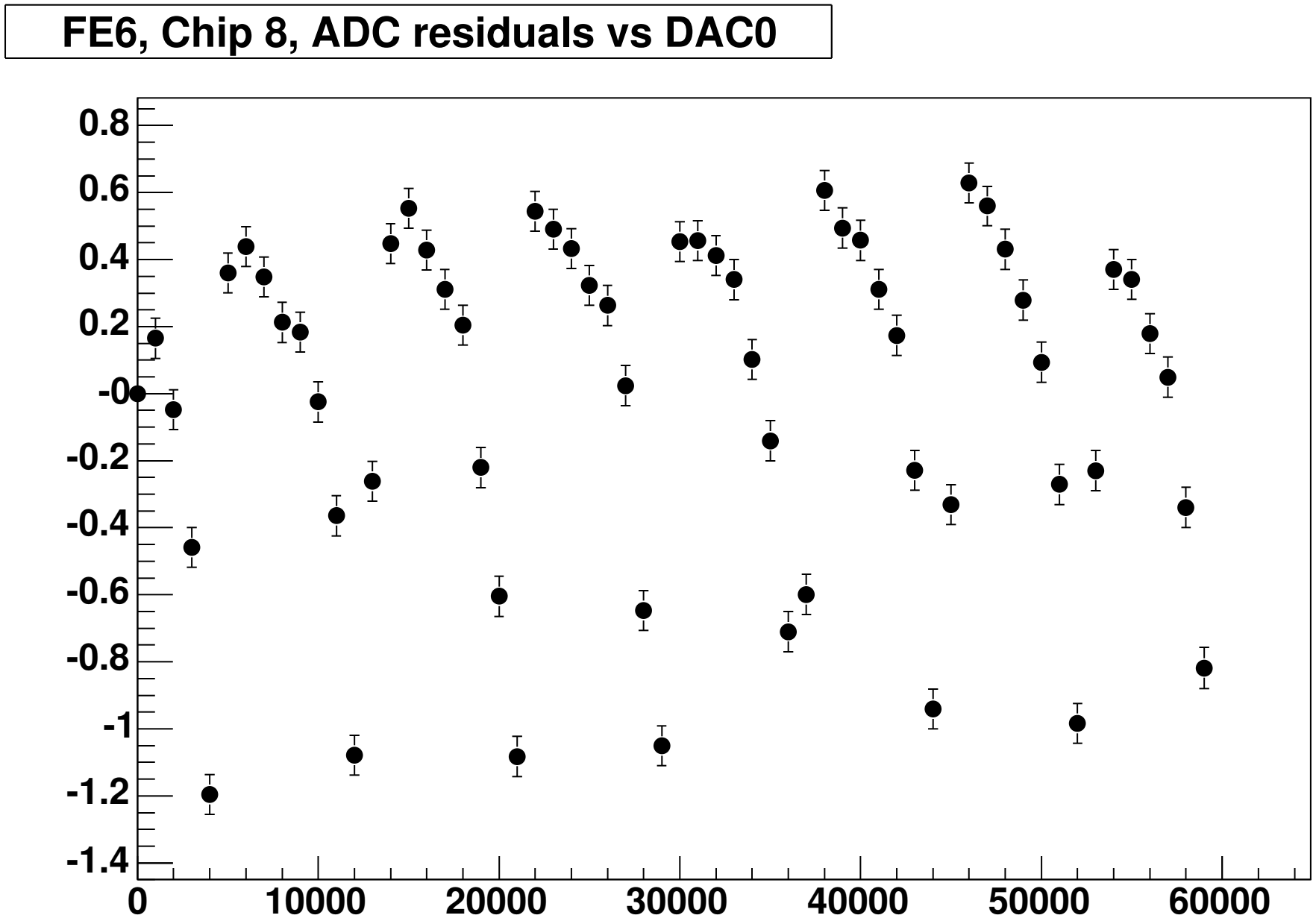

FE6, Chip 7, ADC mean vs DAC1
χ² / ndf 6.415e+04 / 57
p0 -83.24 ± 0.004044
p1 0.2296 ± 1.307e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

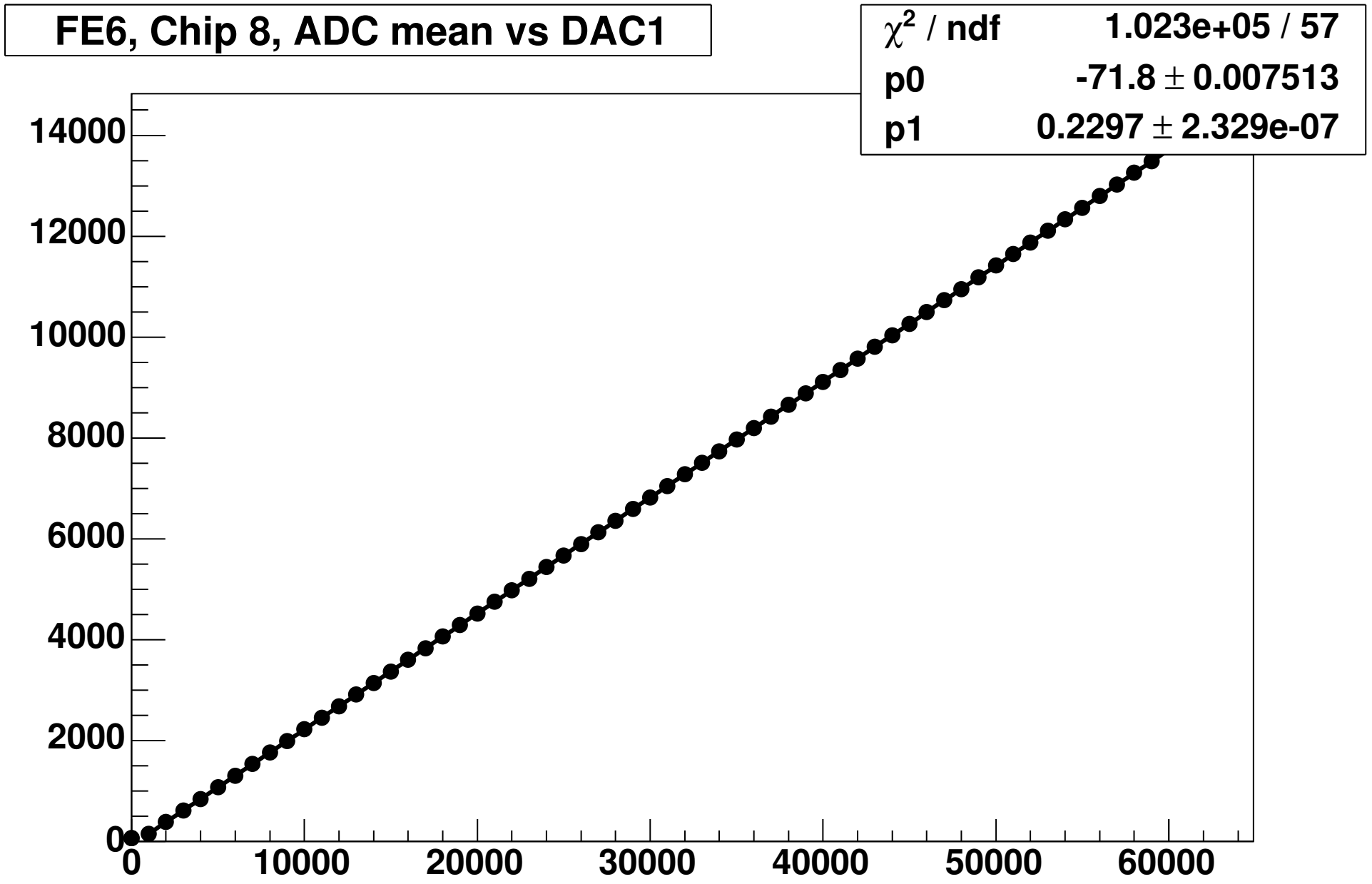

FE6, Chip 7, ADC noise vs DAC1
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0
10000
20000
30000
40000
50000
60000

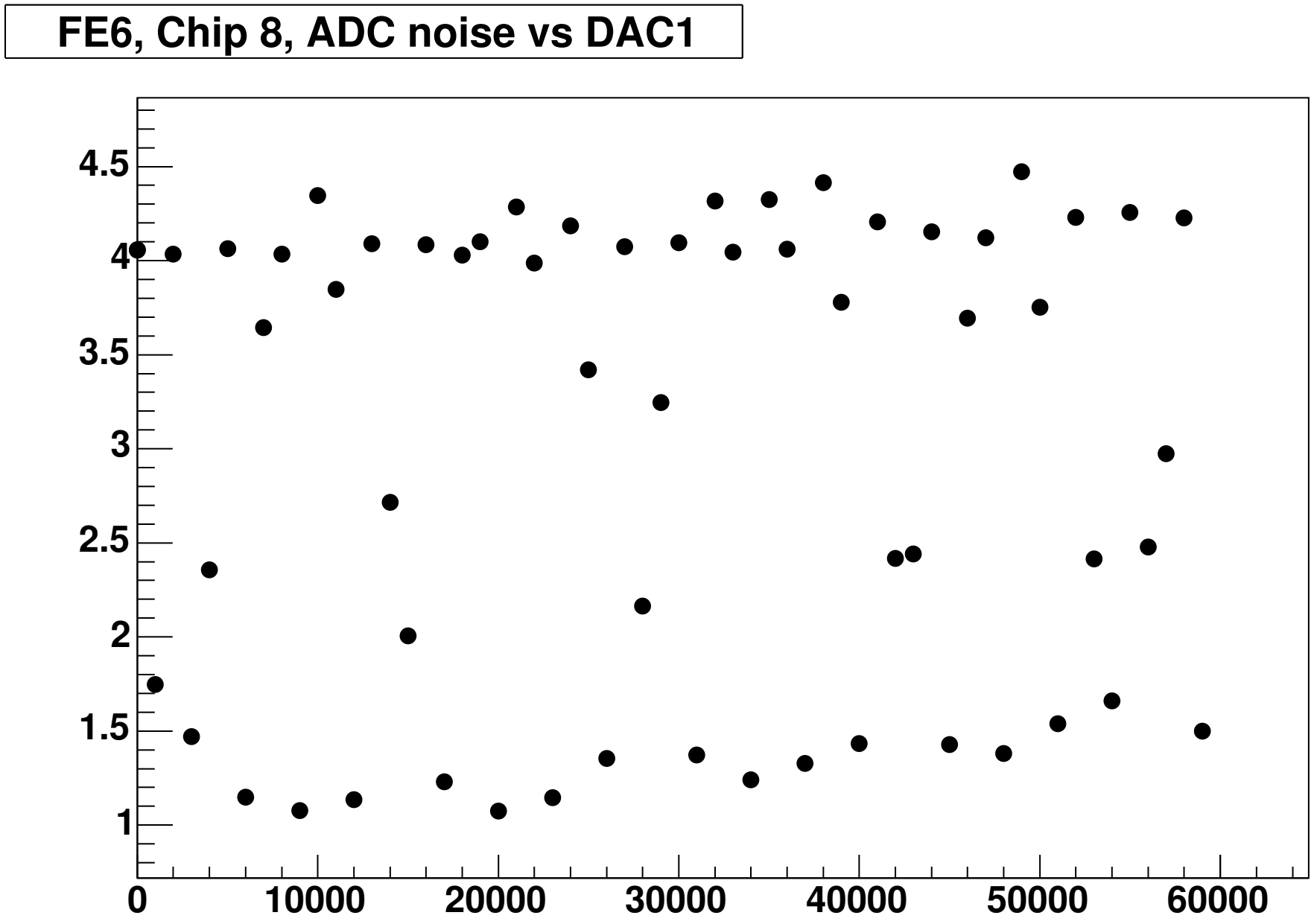

FE6, Chip 7, ADC residuals vs DAC1
1
0.5
0
-0.5
-1
0
10000
20000
30000
40000
50000
60000

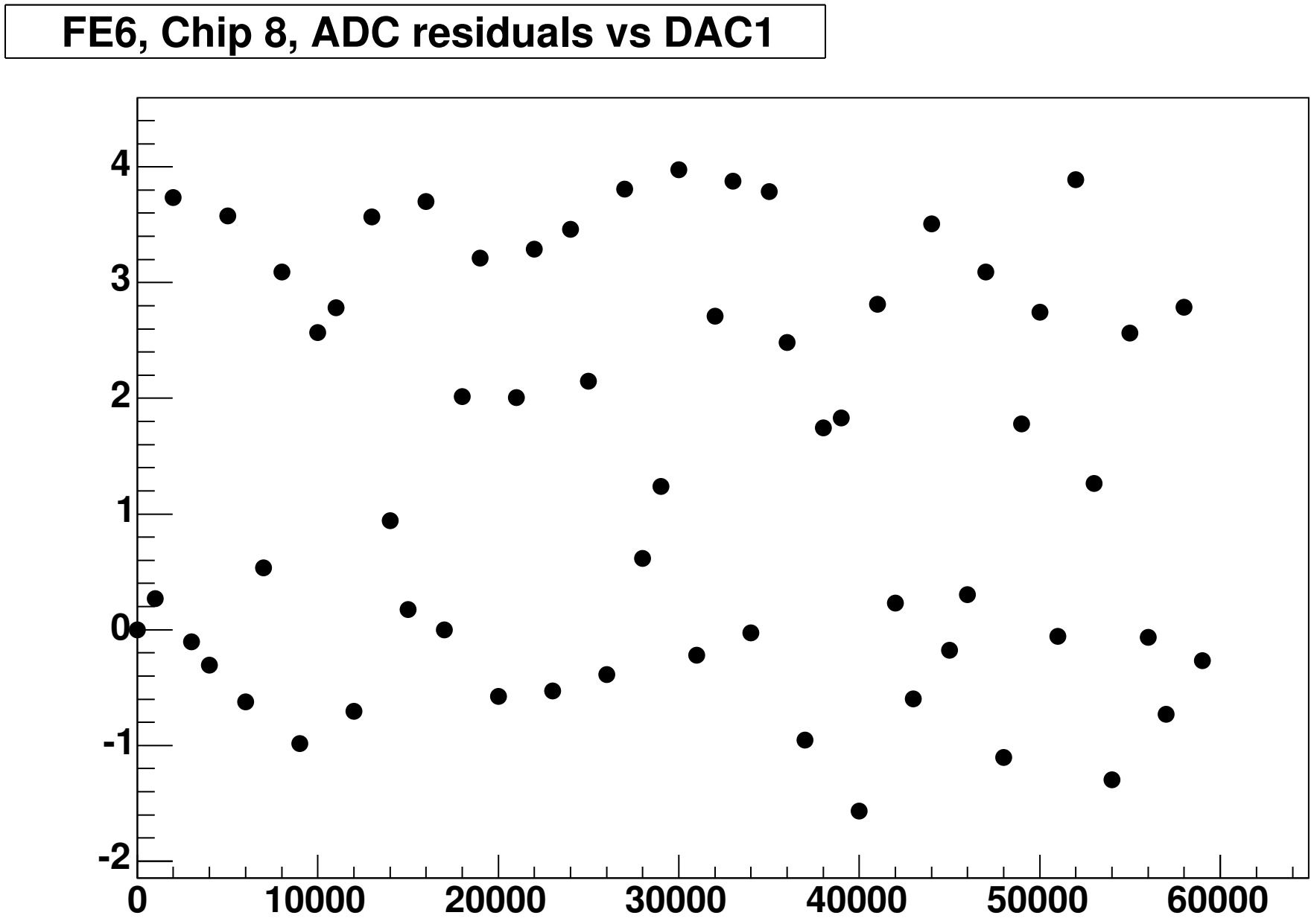

FE6, Chip 8, ADC mean vs DAC0
χ² / ndf 4243 / 57
p0 73.15 ± 0.01574
p1 1.891e-06 ± 4.567e-07
74
73.5
73
72.5
72
0
10000
20000
30000
40000
50000
60000

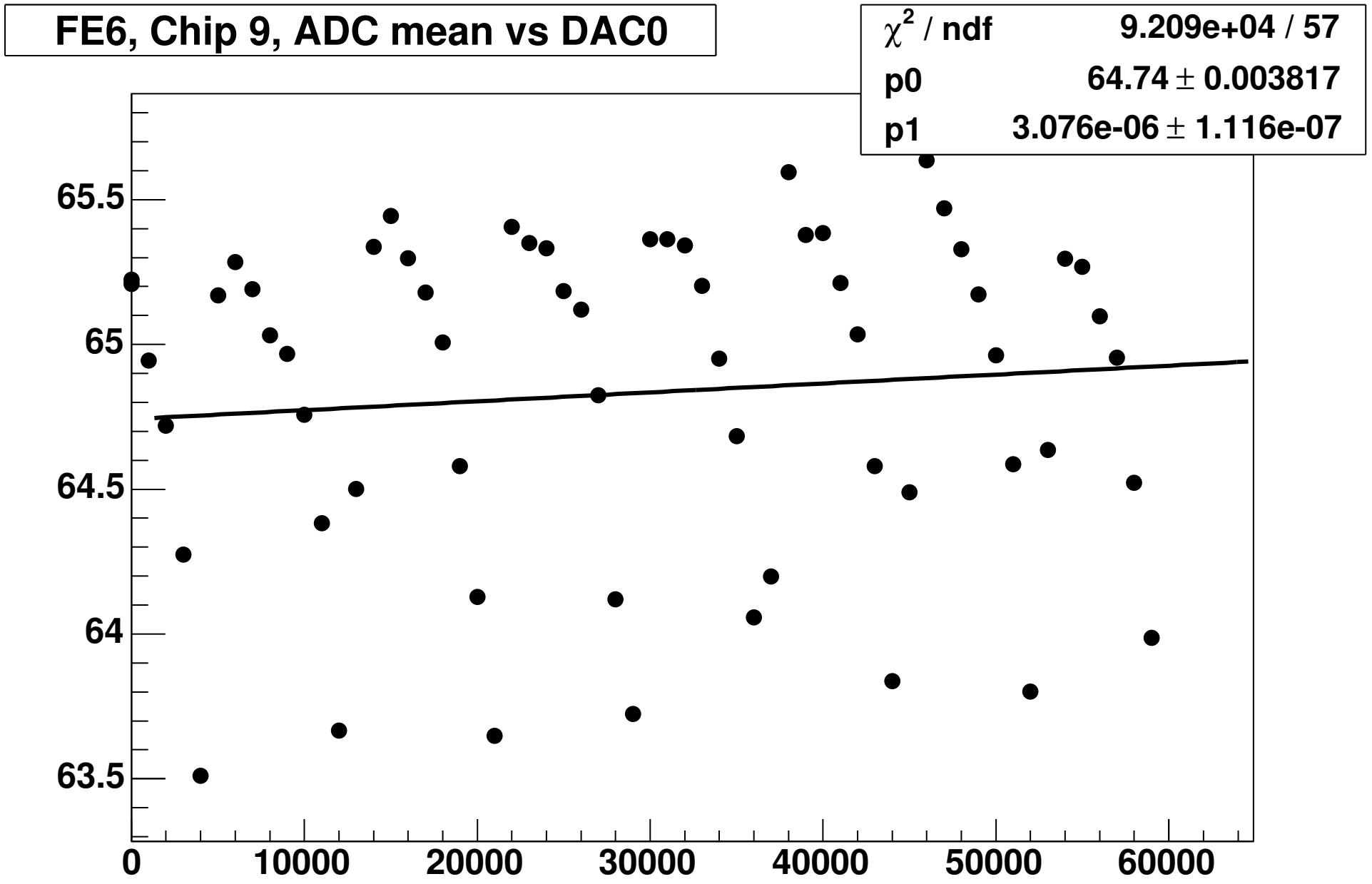

FE6, Chip 8, ADC noise vs DAC0
4.25
4.2
4.15
4.1
4.05
4
3.95
0
10000
20000
30000
40000
50000
60000

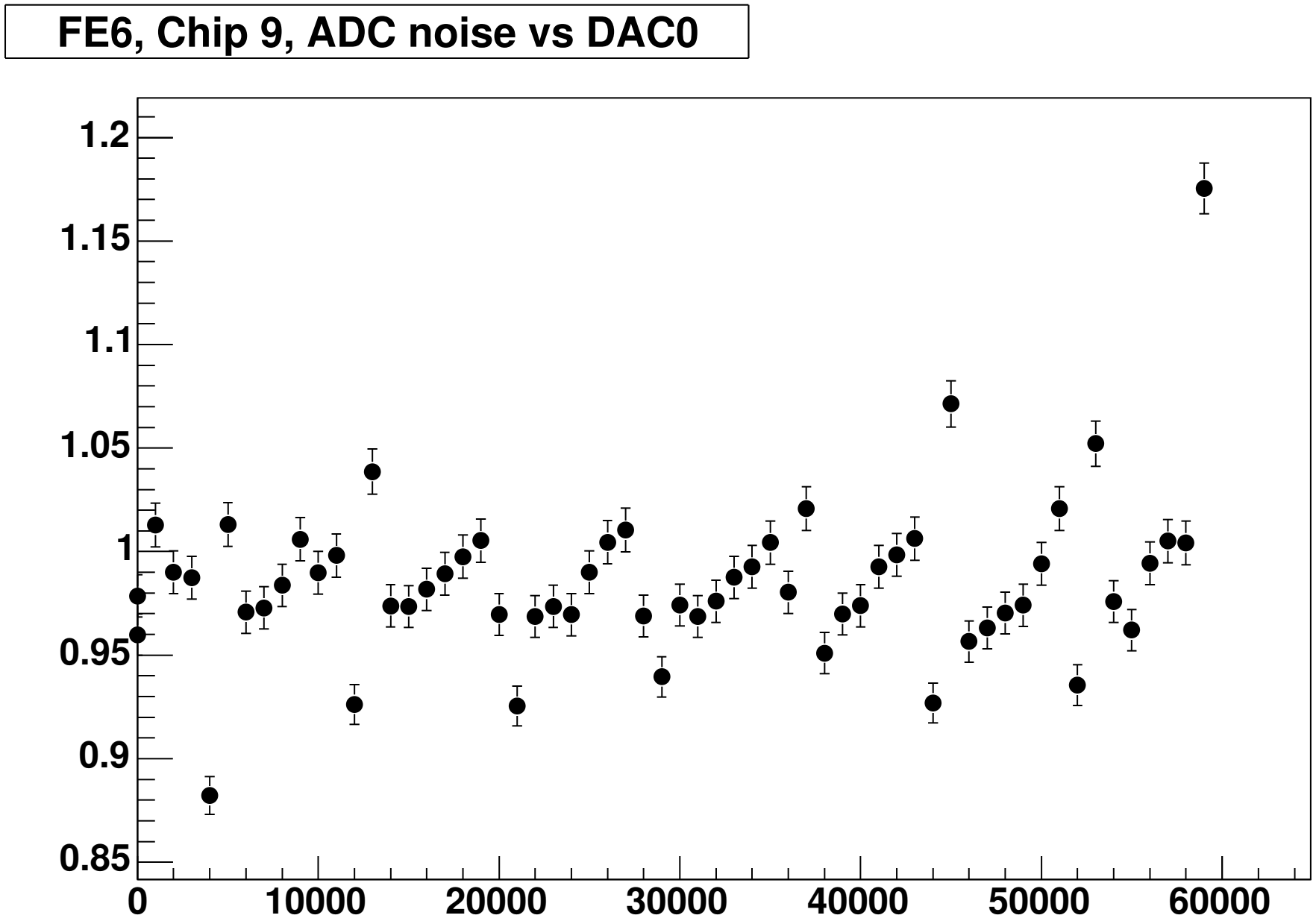

FE6, Chip 8, ADC residuals vs DAC0
0.8
0.6
0.4
0.2
-0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
-1.4
0
10000
20000
30000
40000
50000
60000

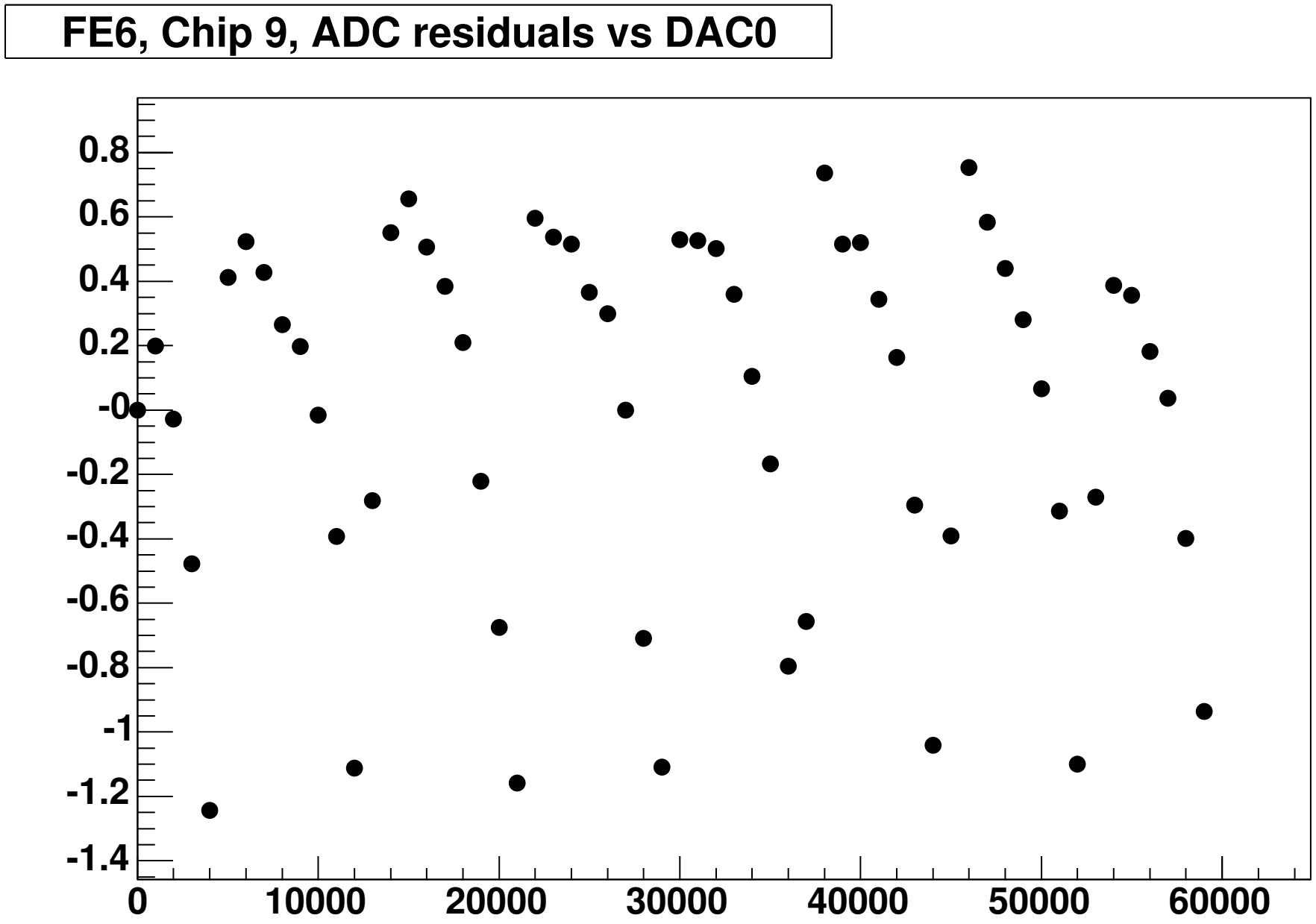

FE6, Chip 8, ADC mean vs DAC1
χ² / ndf 1.023e+05 / 57
p0 -71.8 ± 0.007513
p1 0.2297 ± 2.329e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

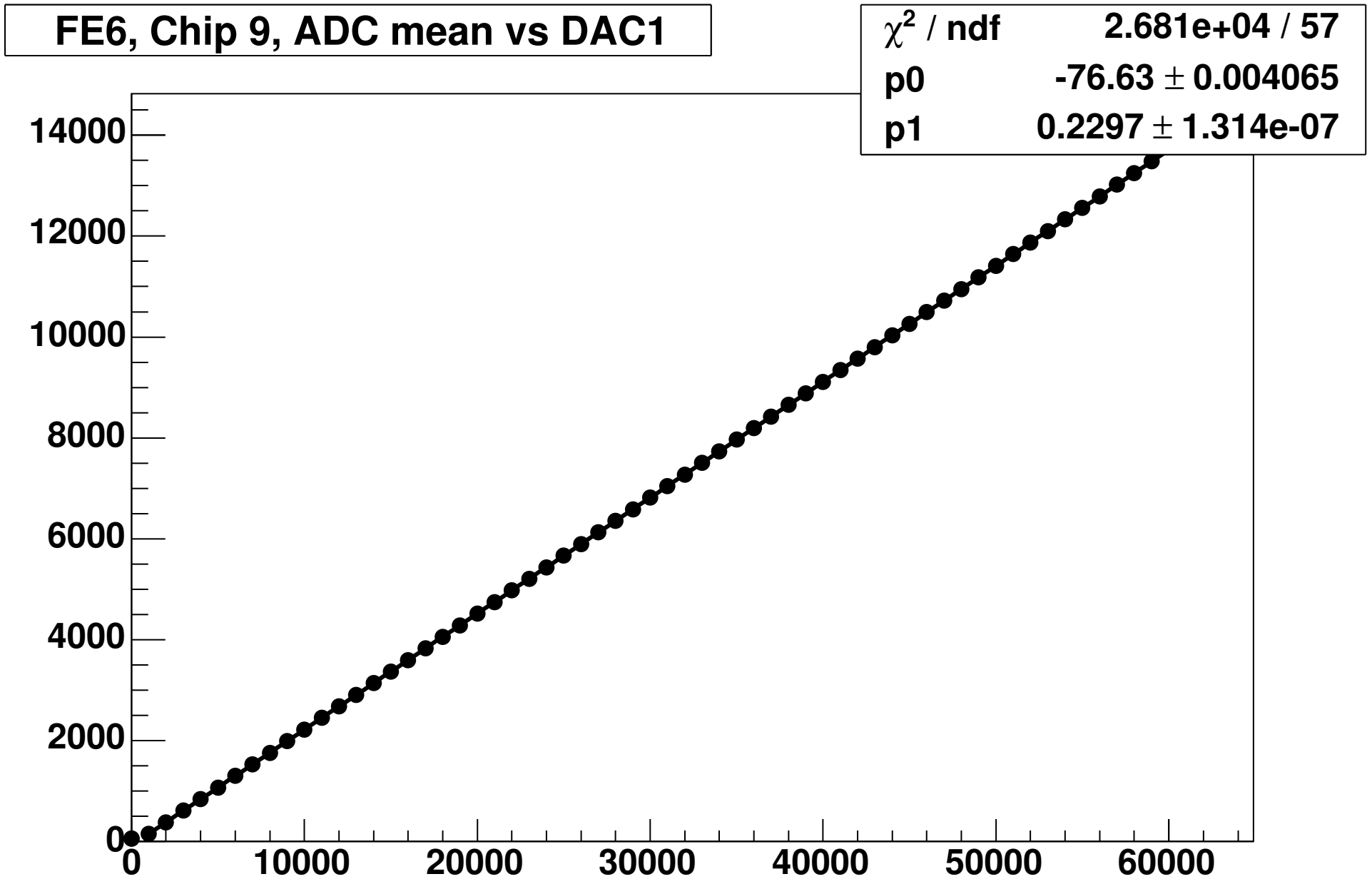

FE6, Chip 8, ADC noise vs DAC1
4.5
4
3.5
3
2.5
2
1.5
1
0
10000
20000
30000
40000
50000
60000

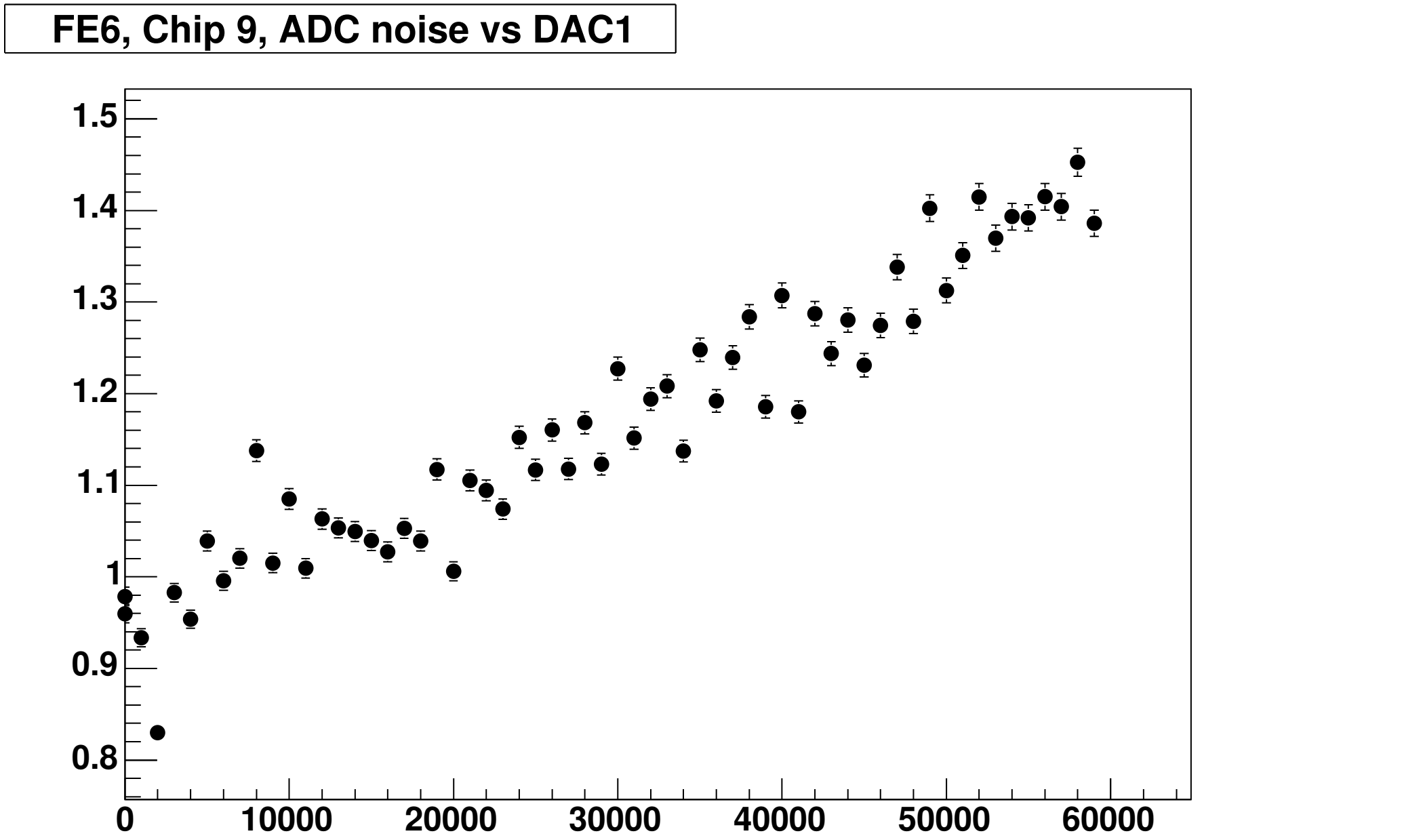

FE6, Chip 8, ADC residuals vs DAC1
4
3
2
1
0
-1
-2
0
10000
20000
30000
40000
50000
60000

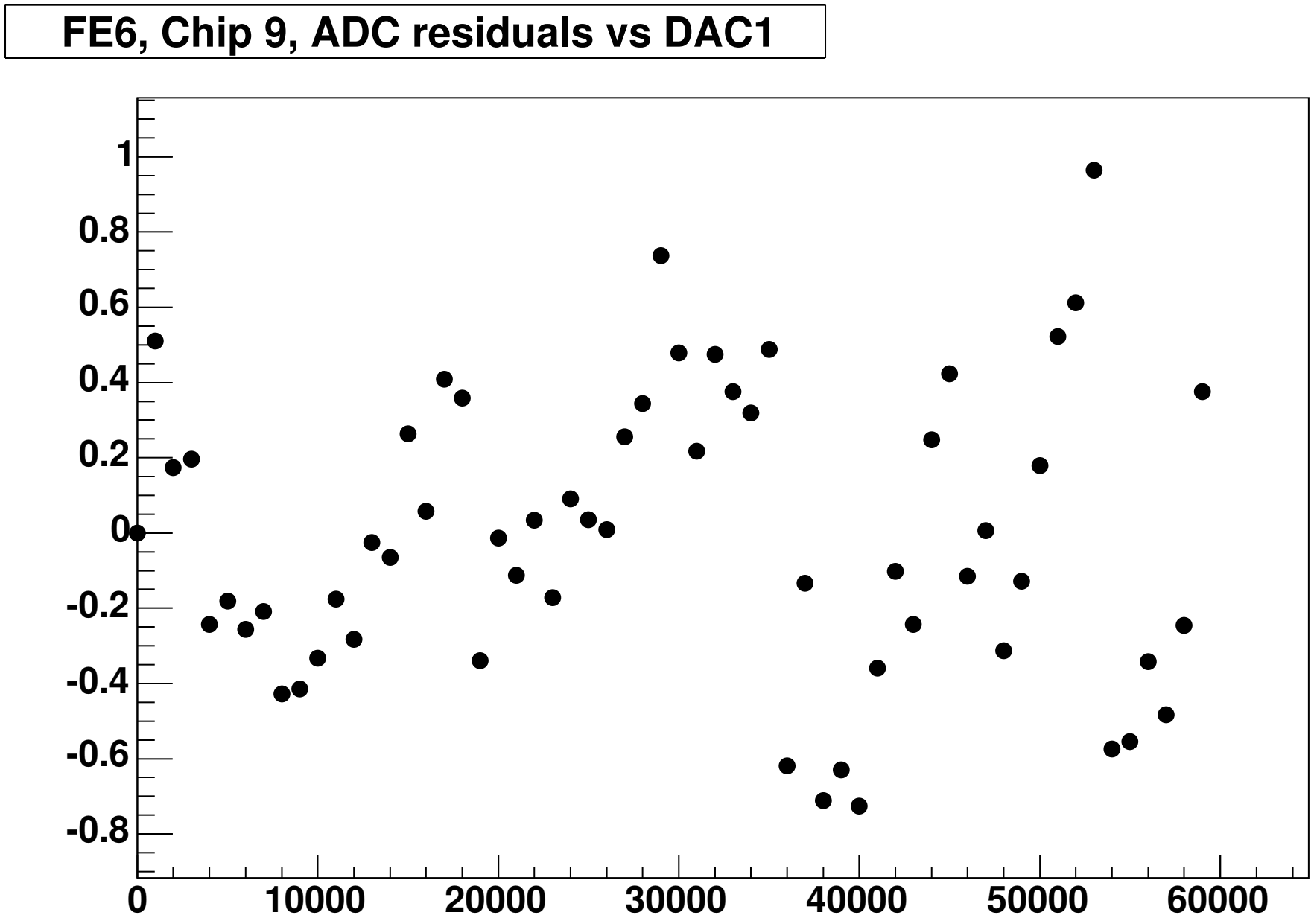

FE6, Chip 9, ADC mean vs DAC0
χ² / ndf 9.209e+04 / 57
p0 64.74 ± 0.003817
p1 3.076e-06 ± 1.116e-07
65.5
65
64.5
64
63.5
0
10000
20000
30000
40000
50000
60000

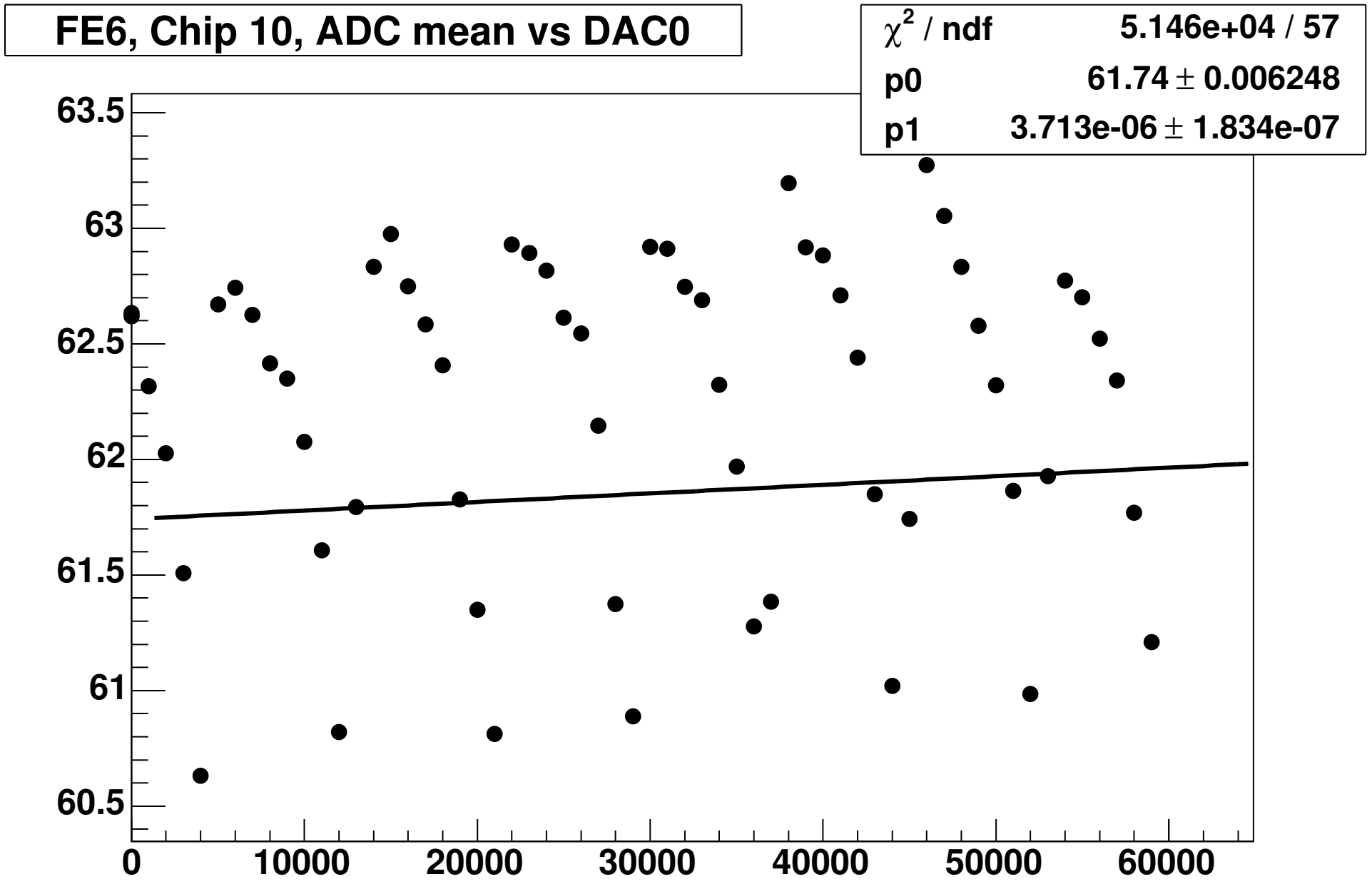

FE6, Chip 9, ADC noise vs DAC0
1.2
1.15
1.1
1.05
1
0.95
0.9
0.85
0
10000
20000
30000
40000
50000
60000

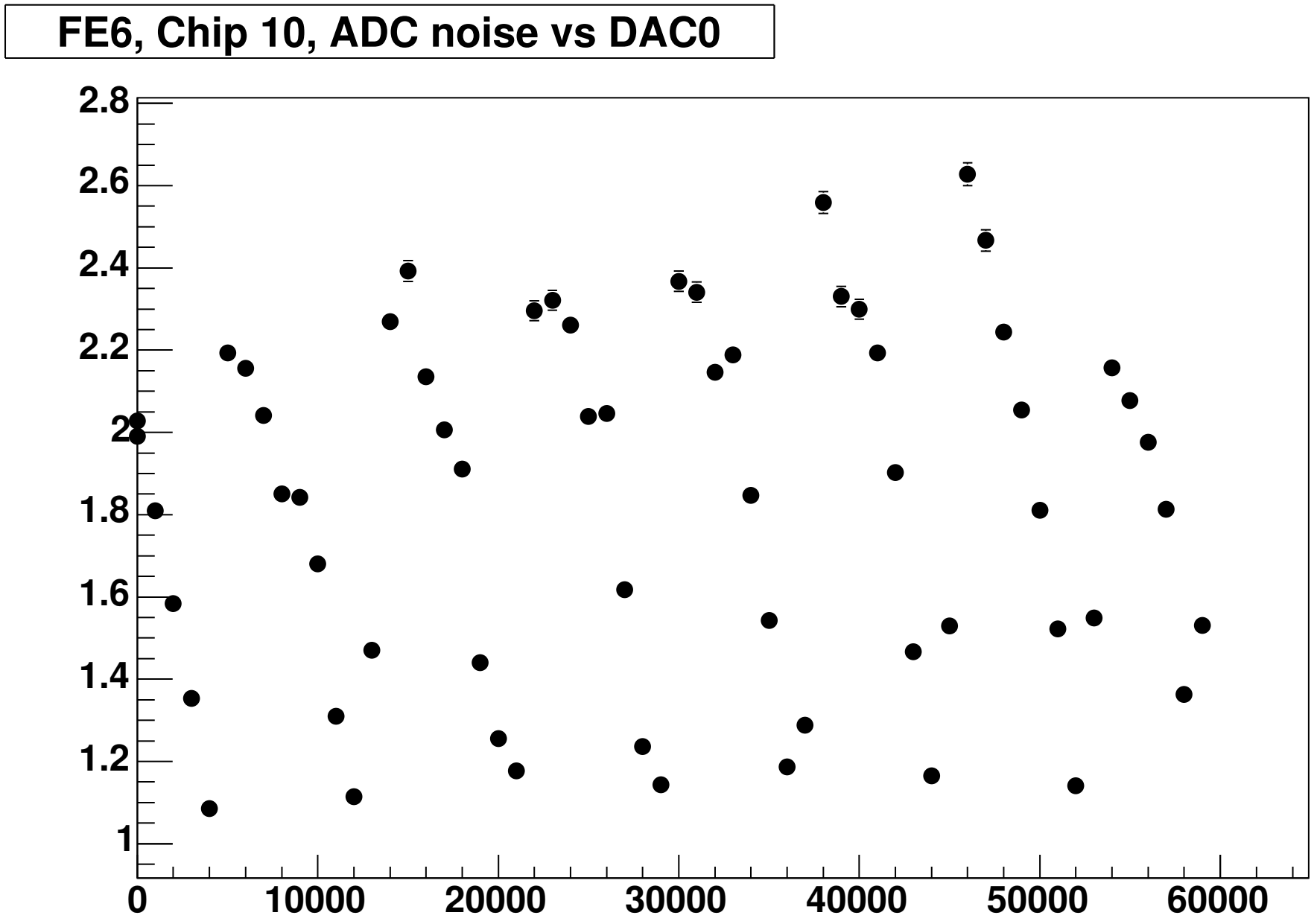

FE6, Chip 9, ADC residuals vs DAC0
0.8
0.6
0.4
0.2
-0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
-1.4
0
10000
20000
30000
40000
50000
60000

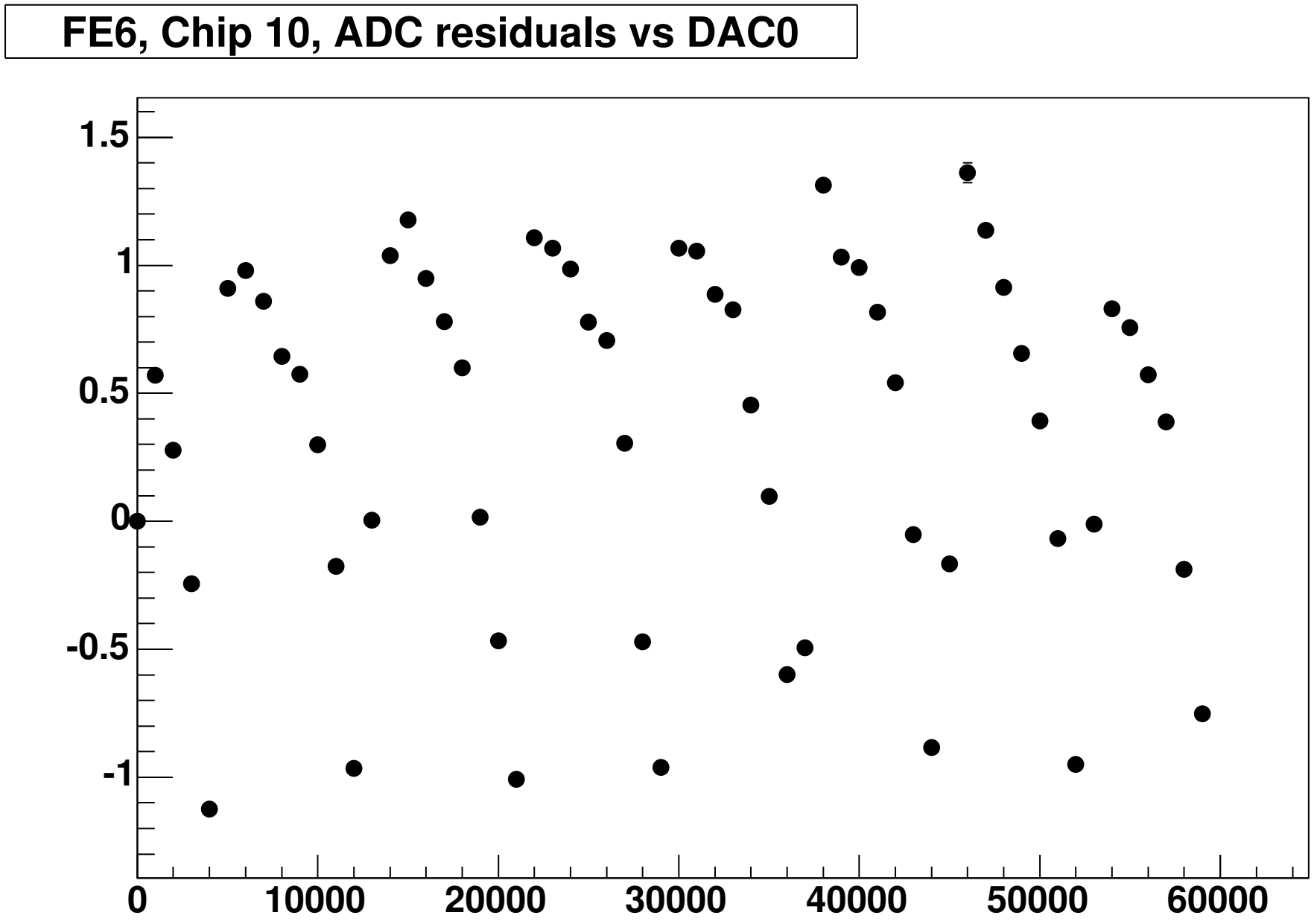

FE6, Chip 9, ADC mean vs DAC1
χ² / ndf 2.681e+04 / 57
p0 -76.63 ± 0.004065
p1 0.2297 ± 1.314e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

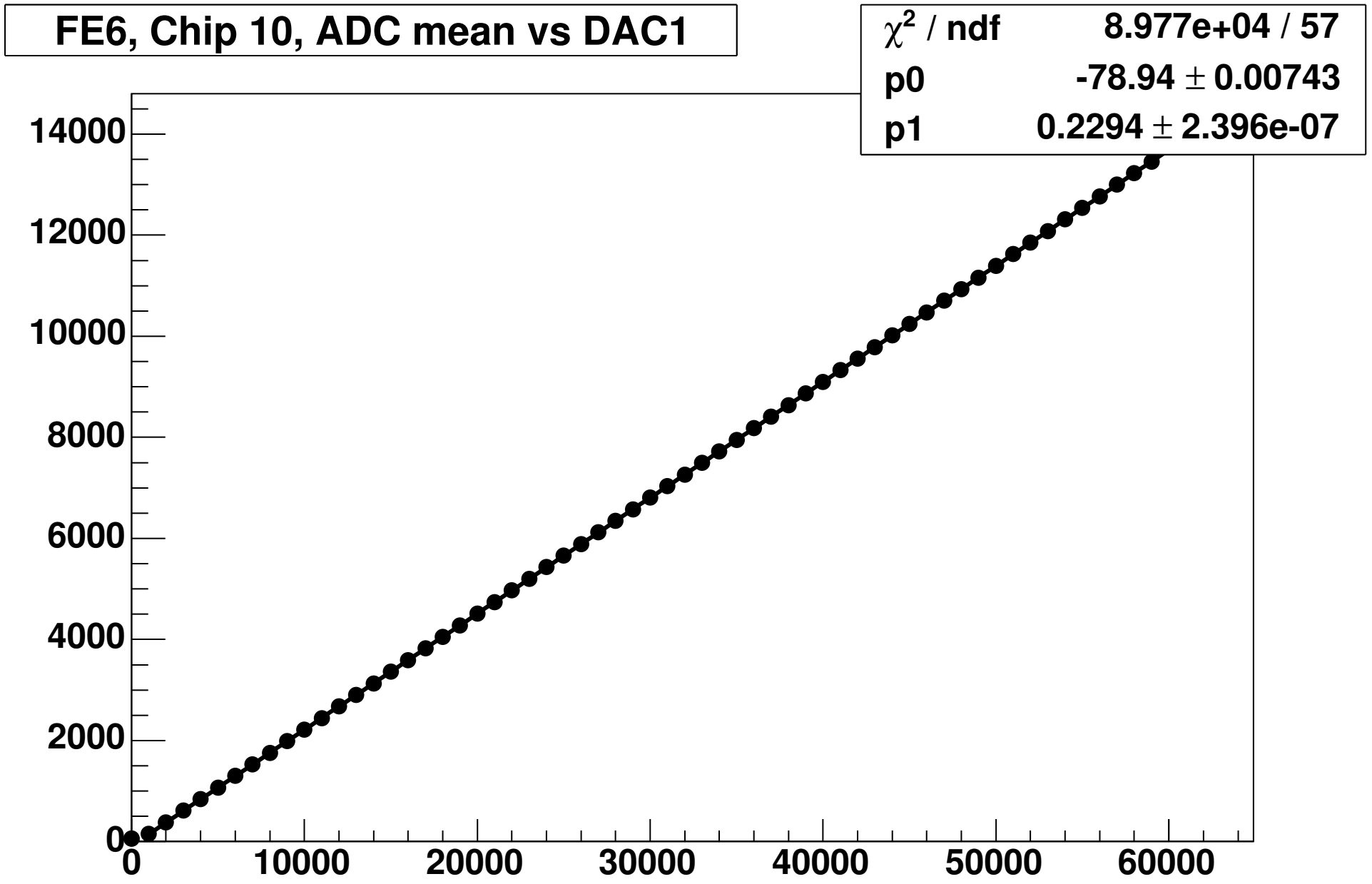

FE6, Chip 9, ADC noise vs DAC1
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0
10000
20000
30000
40000
50000
60000

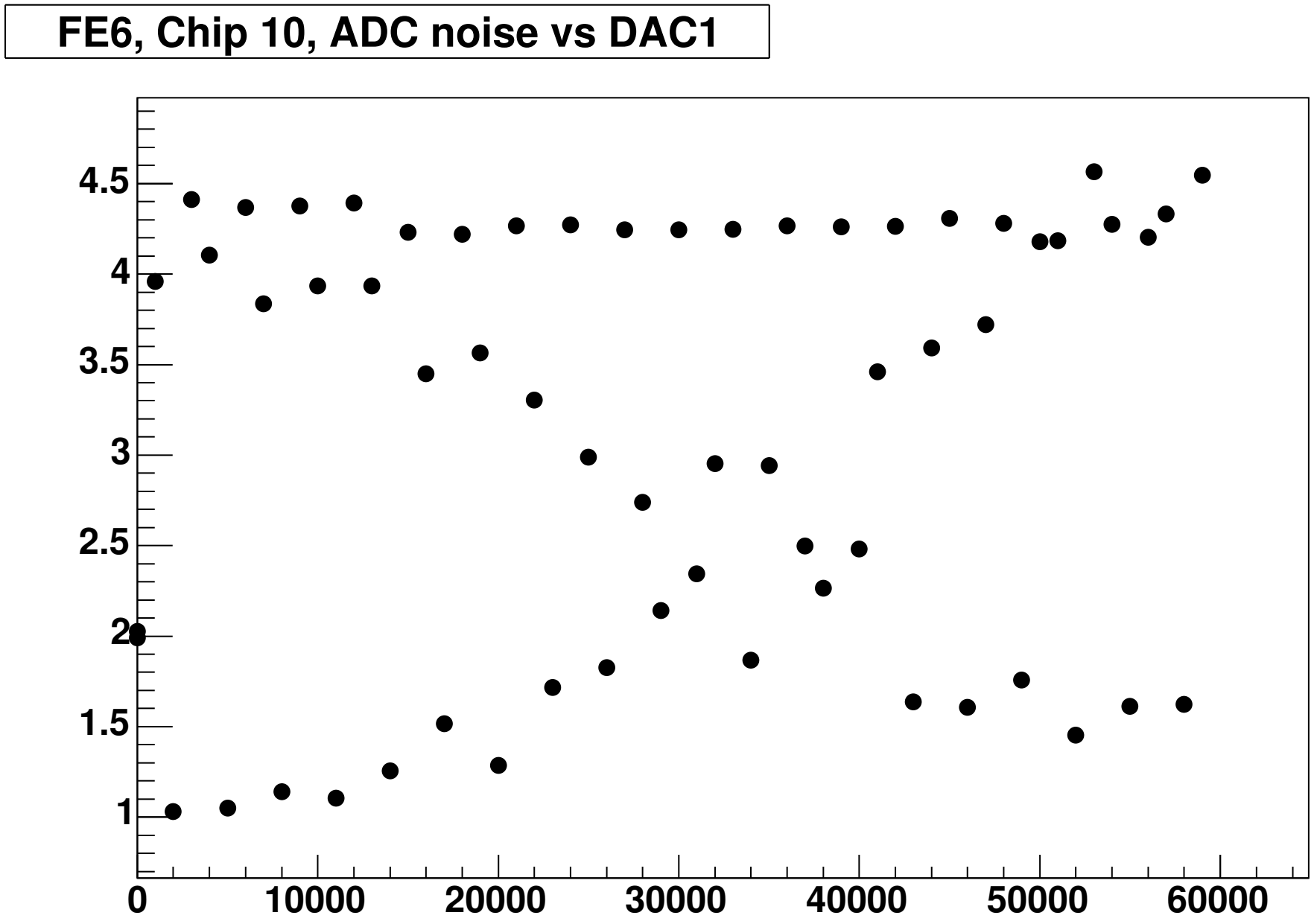

FE6, Chip 9, ADC residuals vs DAC1
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
0
10000
20000
30000
40000
50000
60000

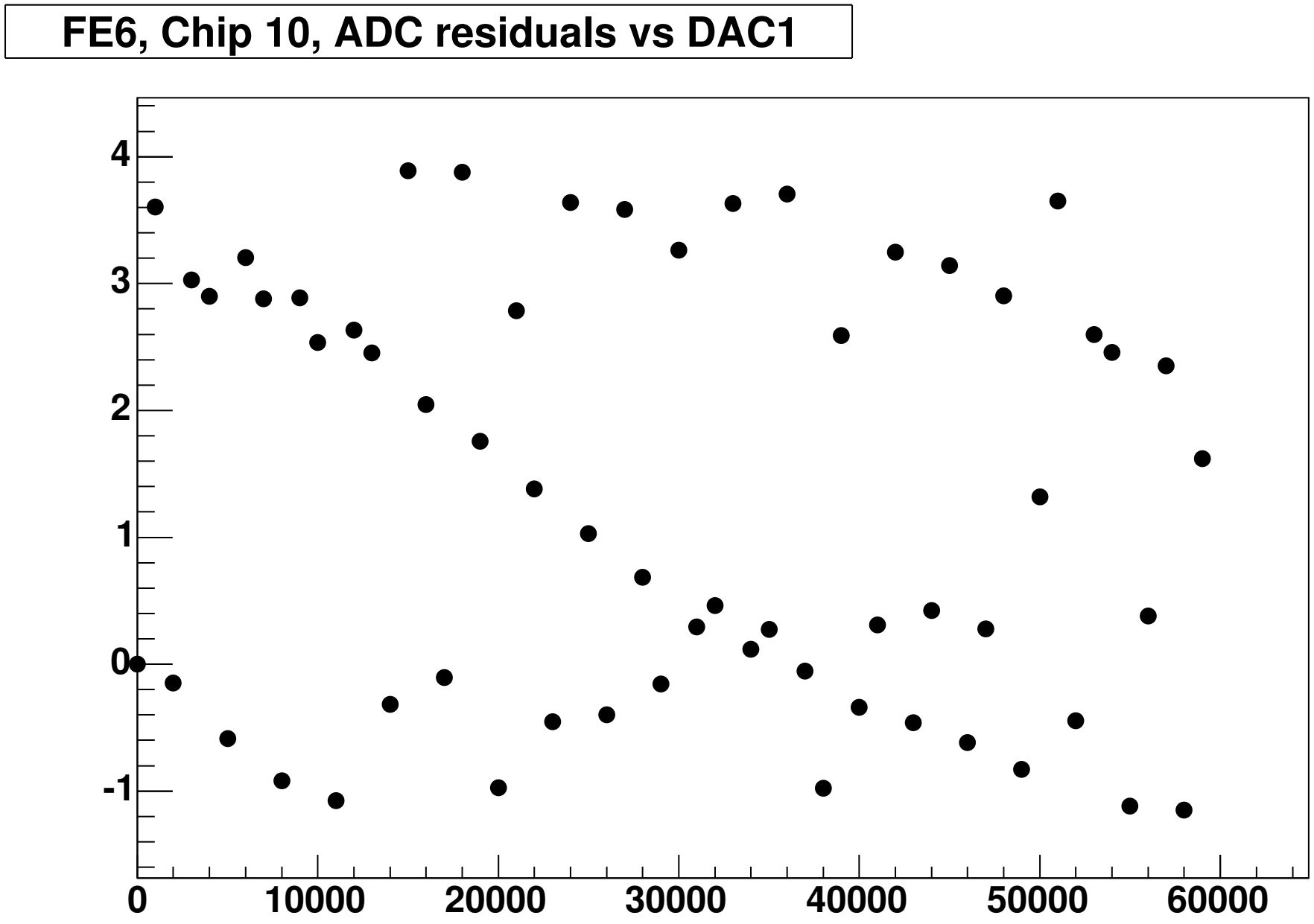

FE6, Chip 10, ADC mean vs DAC0
χ² / ndf 5.146e+04 / 57
p0 61.74 ± 0.006248
p1 3.713e-06 ± 1.834e-07
63.5
63
62.5
62
61.5
61
60.5
0
10000
20000
30000
40000
50000
60000

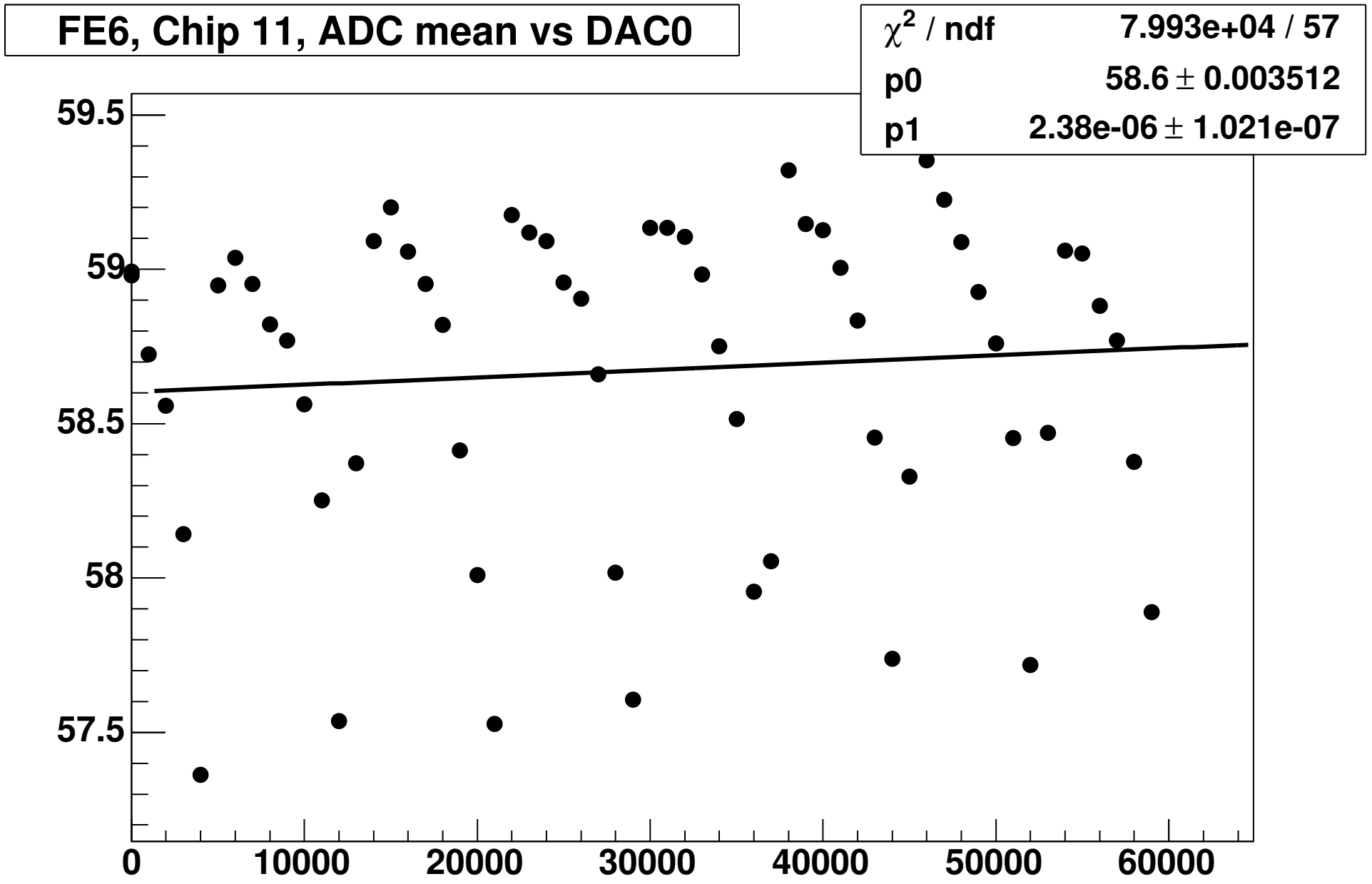

FE6, Chip 10, ADC noise vs DAC0
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0
10000
20000
30000
40000
50000
60000

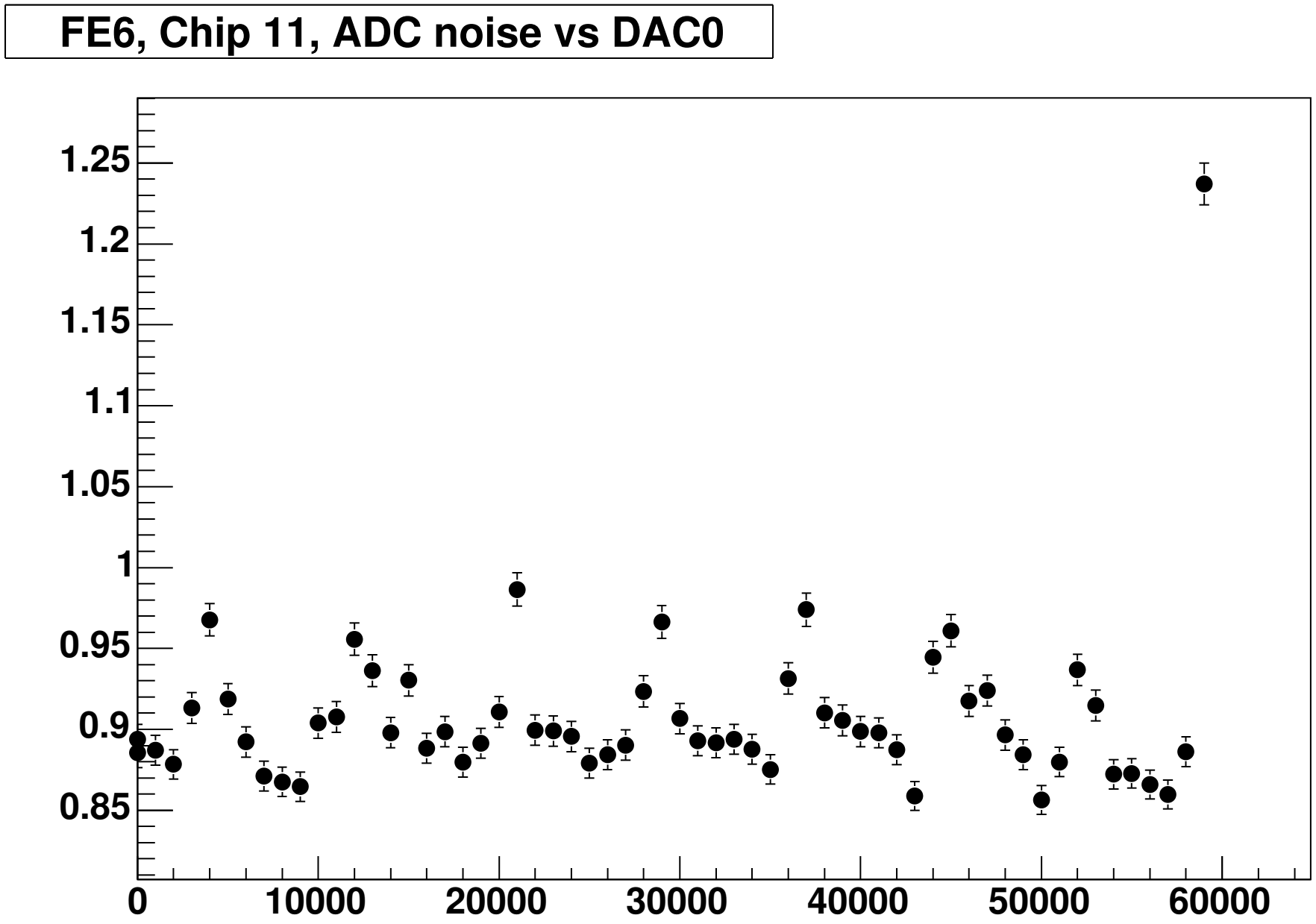

FE6, Chip 10, ADC residuals vs DAC0
1.5
1
0.5
0
-0.5
-1
0
10000
20000
30000
40000
50000
60000

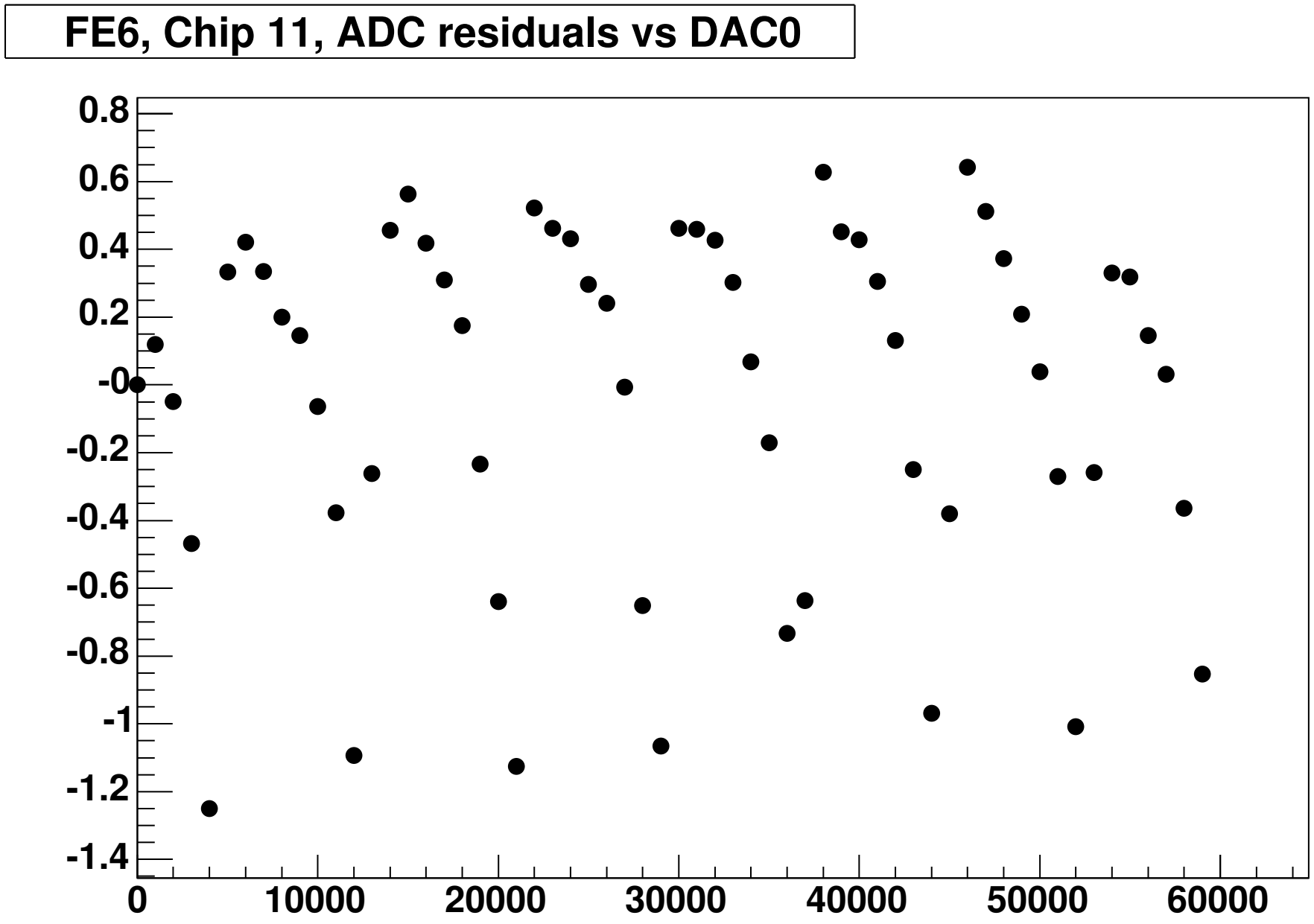

FE6, Chip 10, ADC mean vs DAC1
χ² / ndf 8.977e+04 / 57
p0 -78.94 ± 0.00743
p1 0.2294 ± 2.396e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

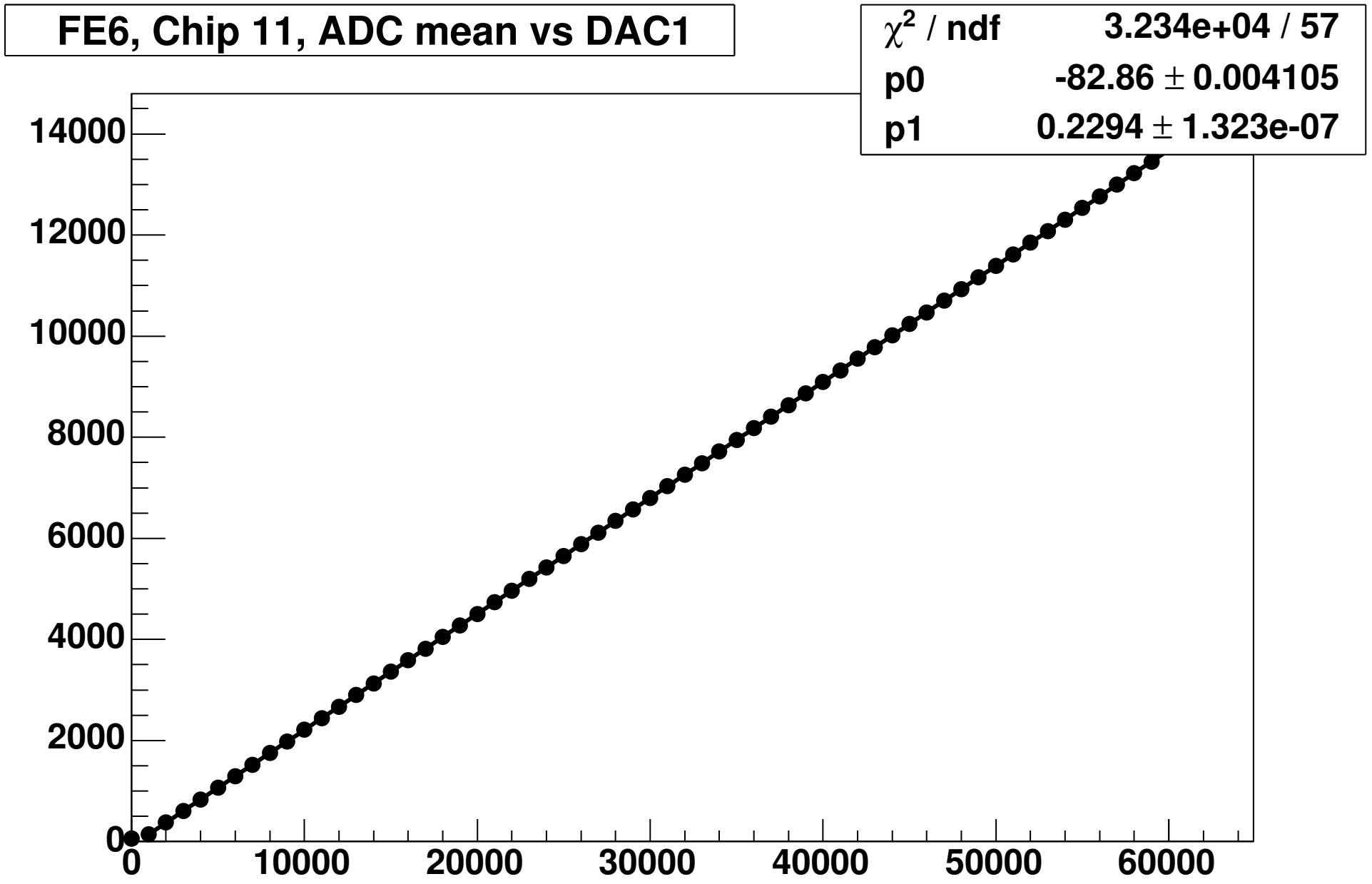

FE6, Chip 10, ADC noise vs DAC1
4.5
4
3.5
3
2.5
2
1.5
1
0
10000
20000
30000
40000
50000
60000

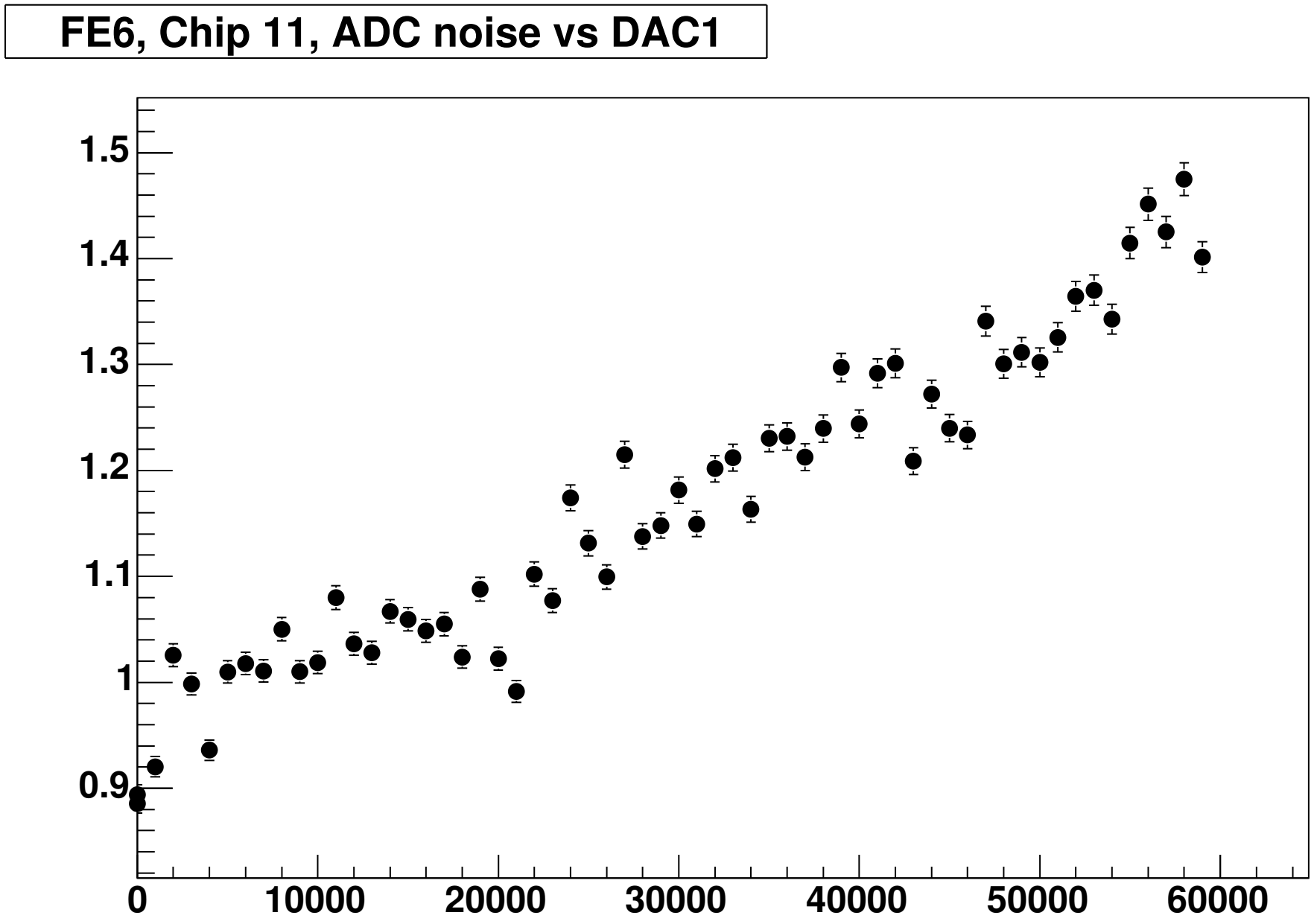

FE6, Chip 10, ADC residuals vs DAC1
4
3
2
1
0
-1
0
10000
20000
30000
40000
50000
60000

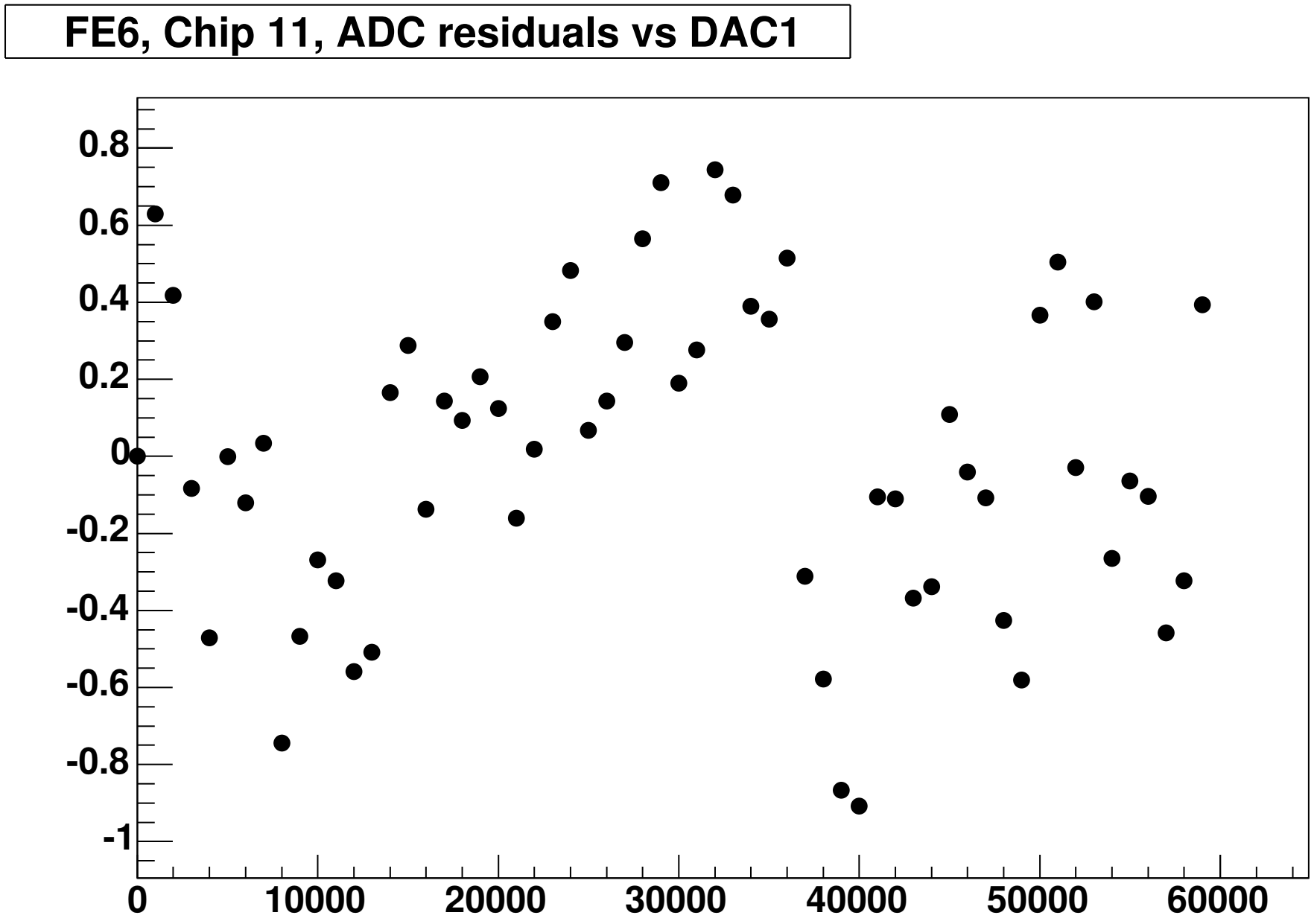

FE6, Chip 11, ADC mean vs DAC0
χ² / ndf 7.993e+04 / 57
p0 58.6 ± 0.003512
p1 2.38e-06 ± 1.021e-07
59.5
59
58.5
58
57.5
0
10000
20000
30000
40000
50000
60000

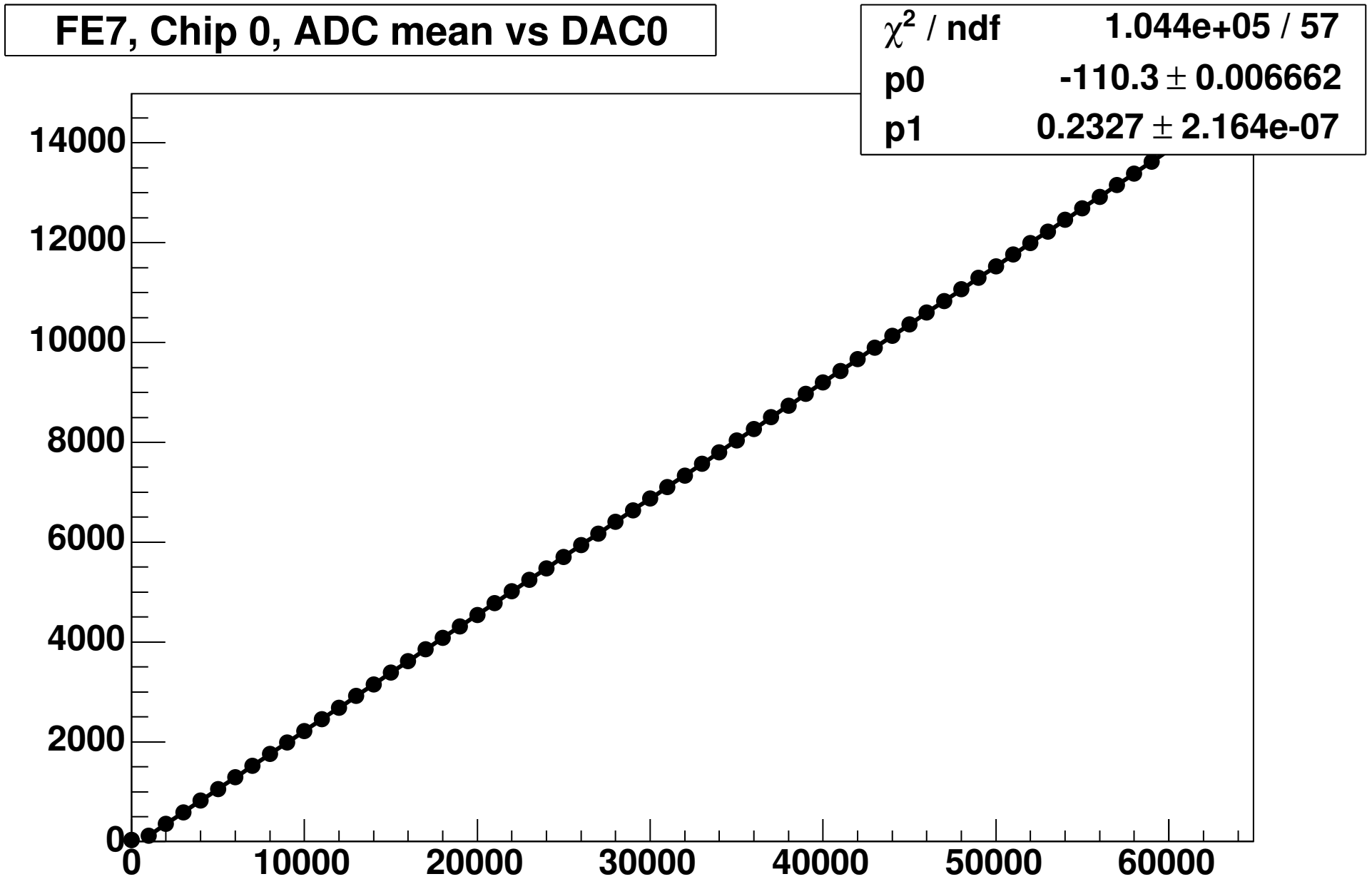

FE6, Chip 11, ADC noise vs DAC0
1.25
1.2
1.15
1.1
1.05
1
0.95
0.9
0.85
0
10000
20000
30000
40000
50000
60000

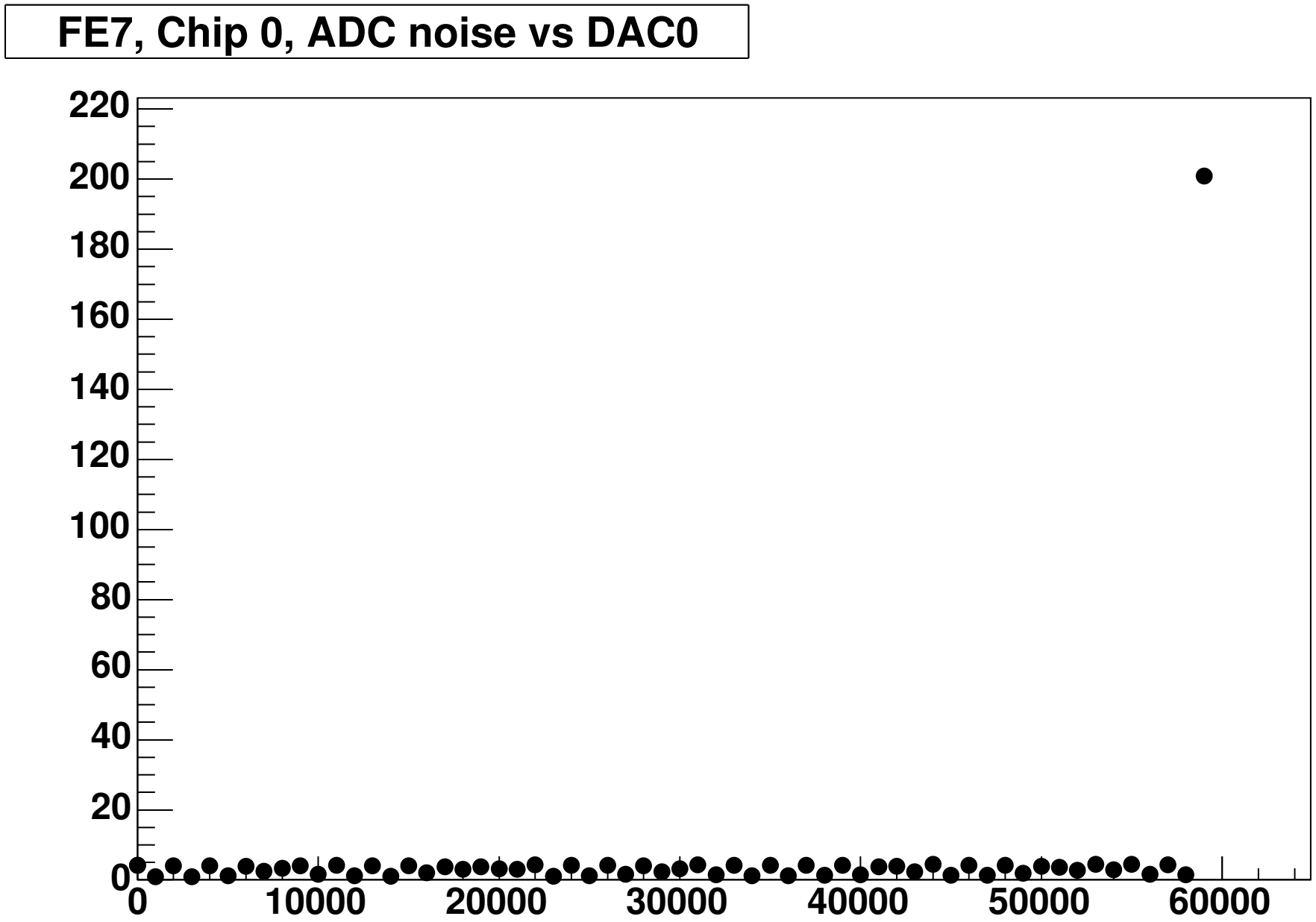

FE6, Chip 11, ADC residuals vs DAC0
0.8
0.6
0.4
0.2
-0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
-1.4
0
10000
20000
30000
40000
50000
60000

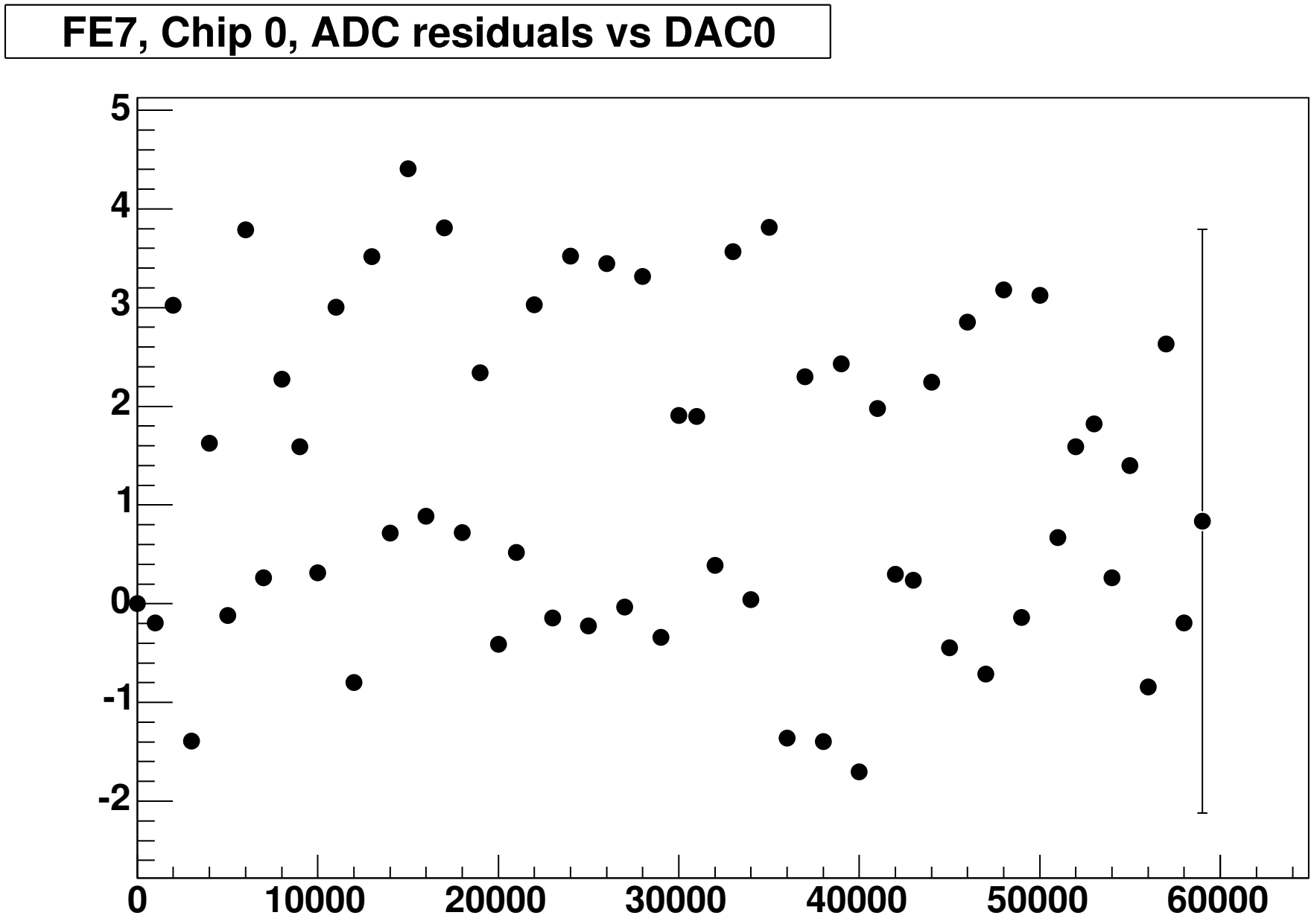

FE6, Chip 11, ADC mean vs DAC1
χ² / ndf 3.234e+04 / 57
p0 -82.86 ± 0.004105
p1 0.2294 ± 1.323e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

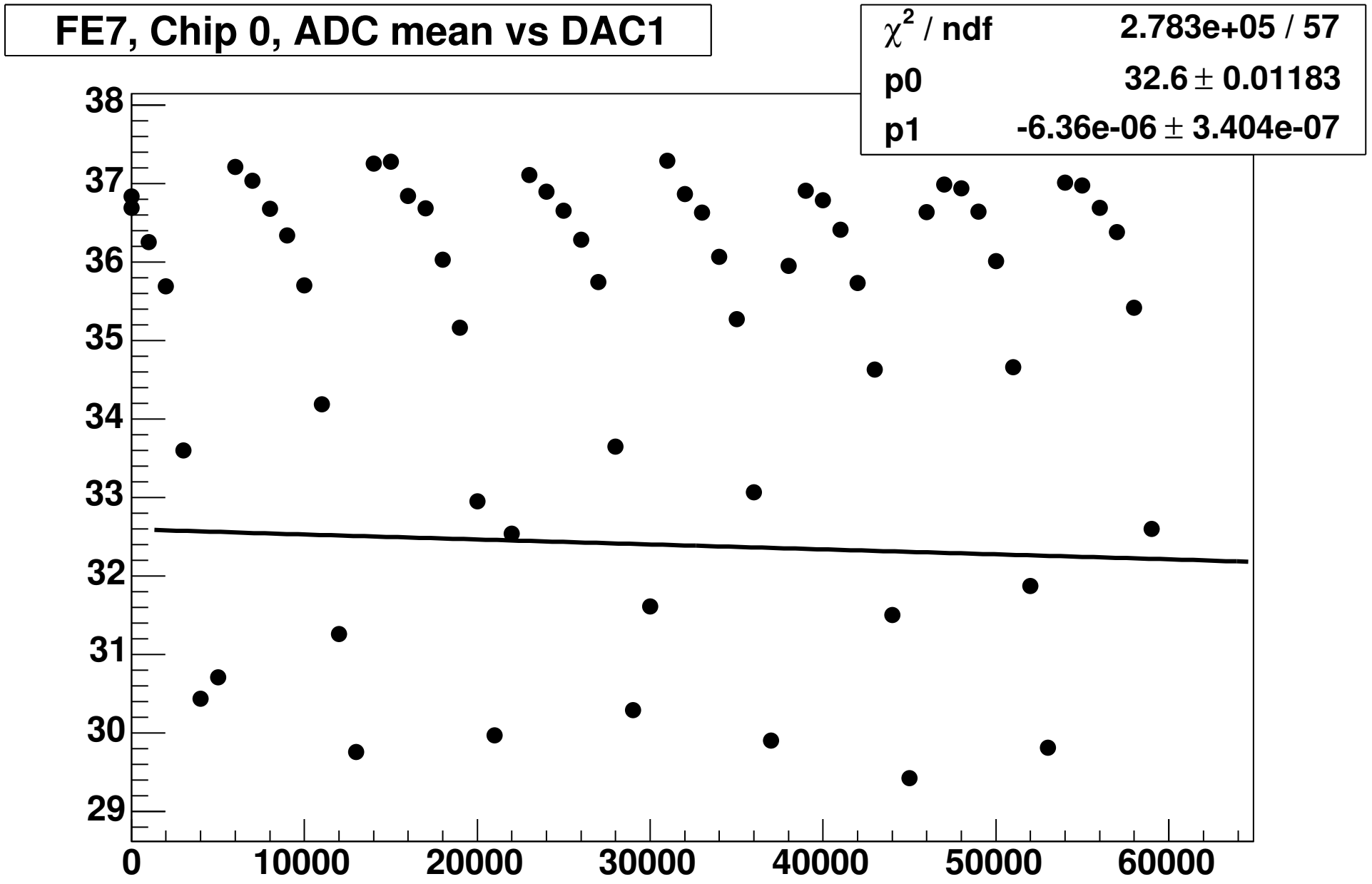

FE6, Chip 11, ADC noise vs DAC1
1.5
1.4
1.3
1.2
1.1
1
0.9
0
10000
20000
30000
40000
50000
60000

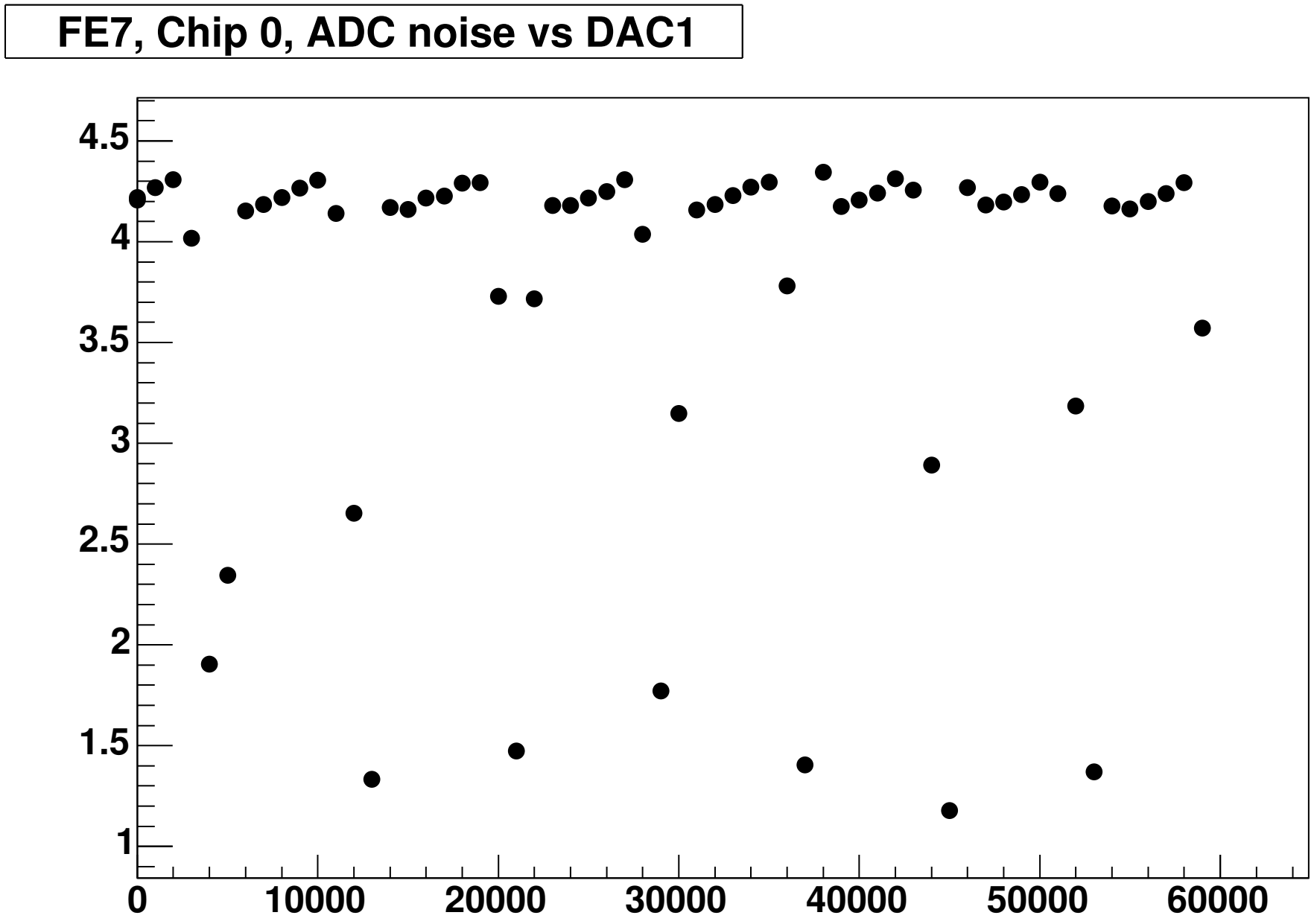

FE6, Chip 11, ADC residuals vs DAC1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
0
10000
20000
30000
40000
50000
60000

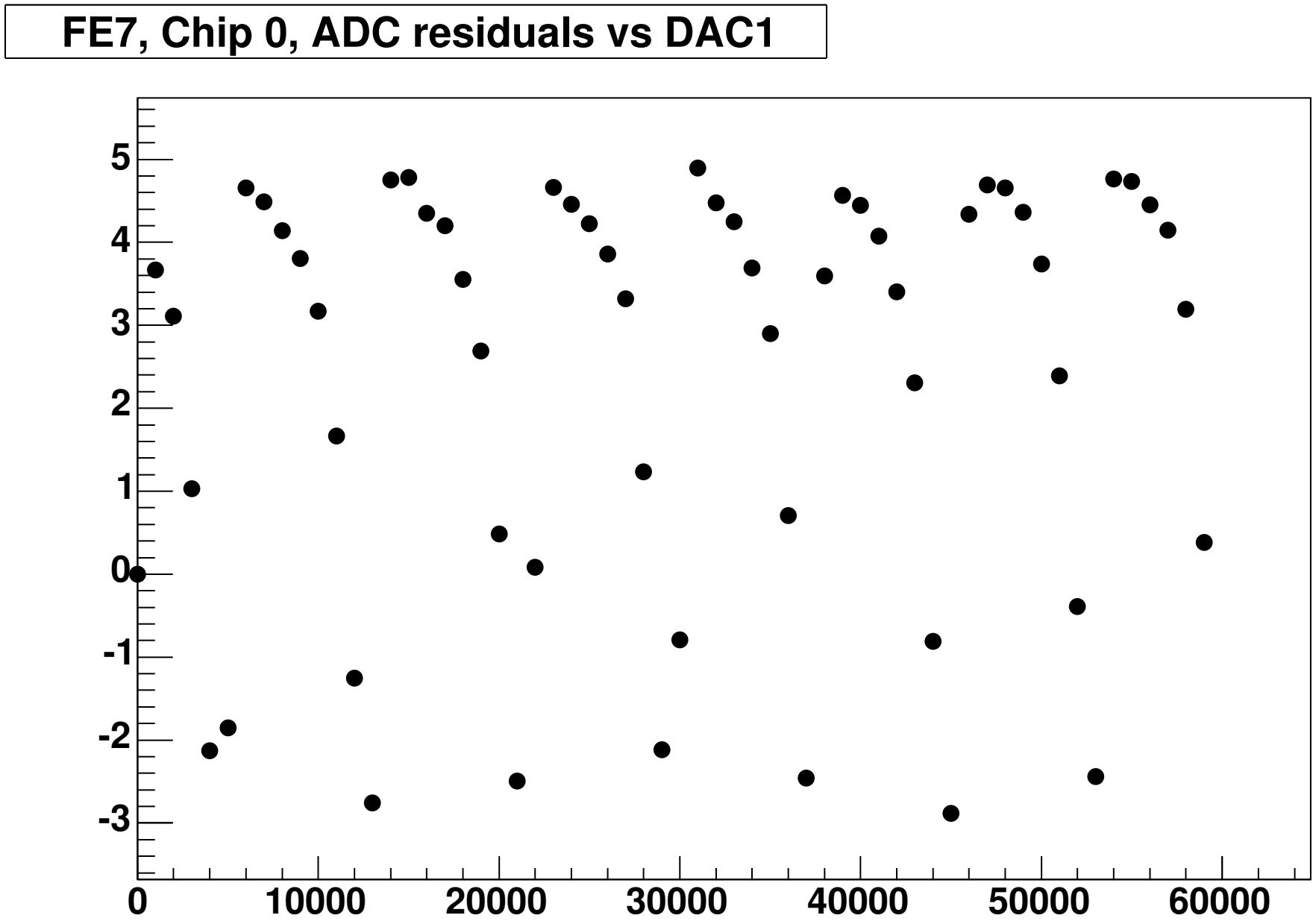

FE7, Chip 0, ADC mean vs DAC0
χ² / ndf 1.044e+05 / 57
p0 -110.3 ± 0.006662
p1 0.2327 ± 2.164e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

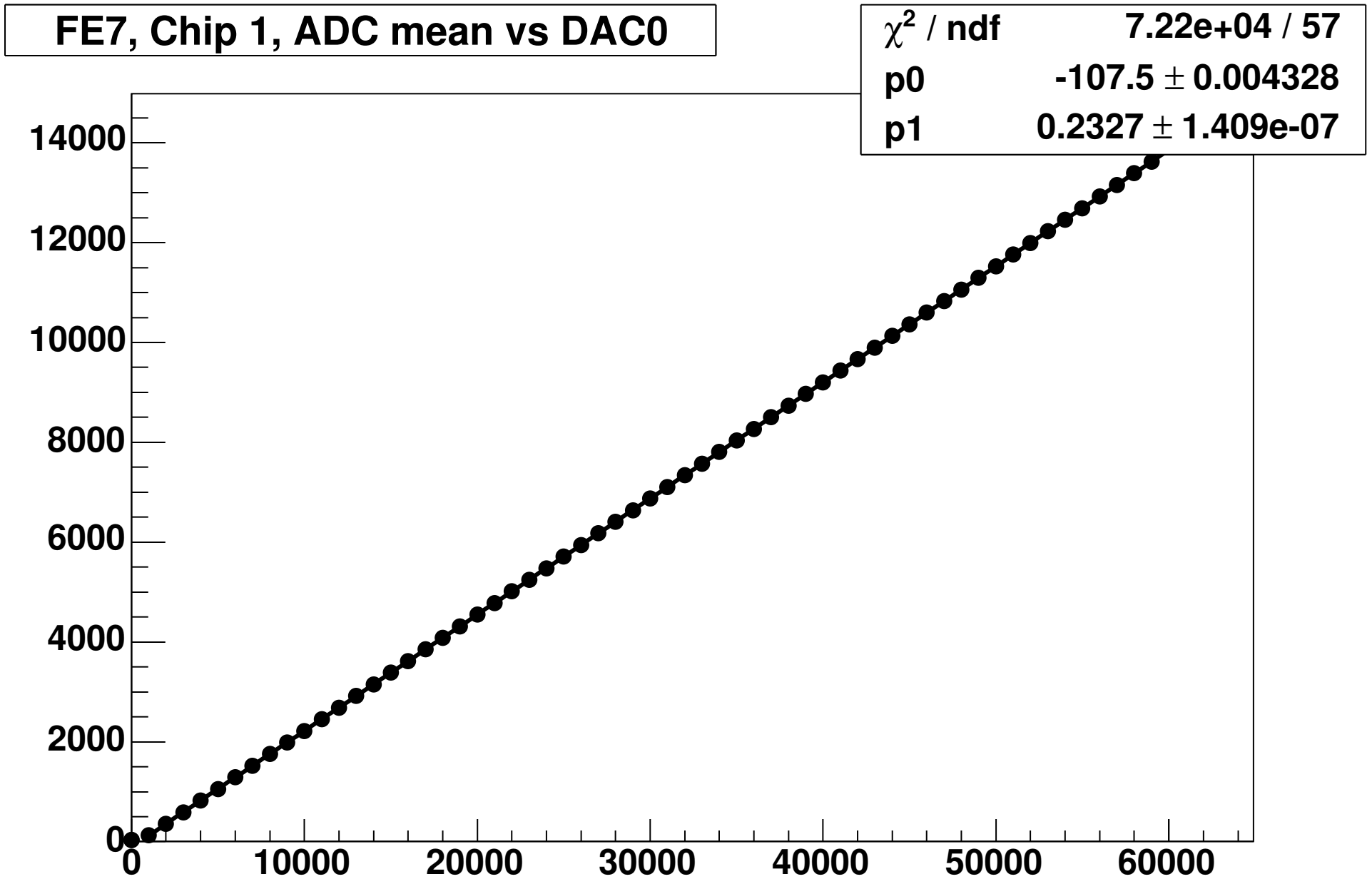

FE7, Chip 0, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

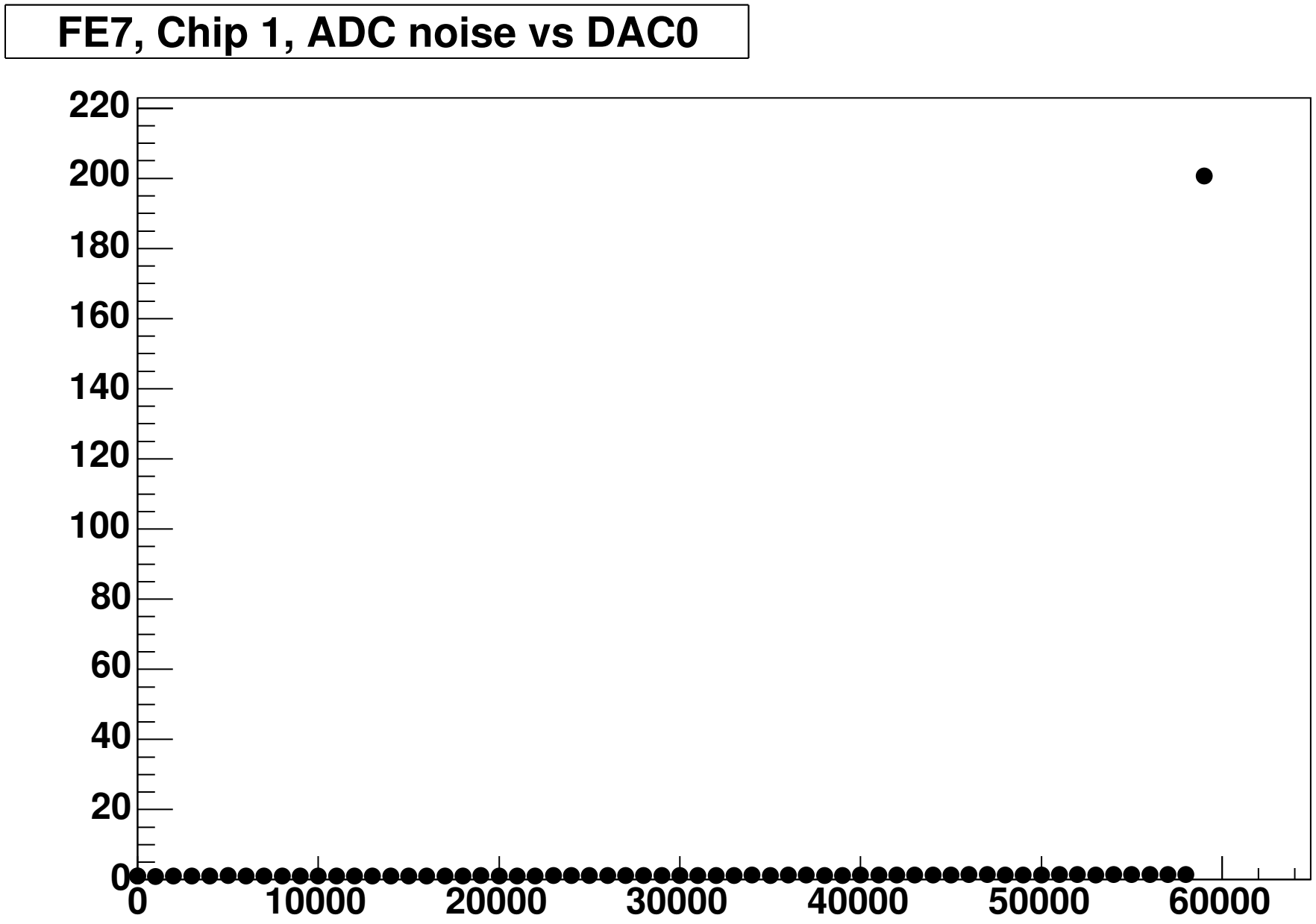

FE7, Chip 0, ADC residuals vs DAC0
5
4
3
2
1
0
-1
-2
0
10000
20000
30000
40000
50000
60000

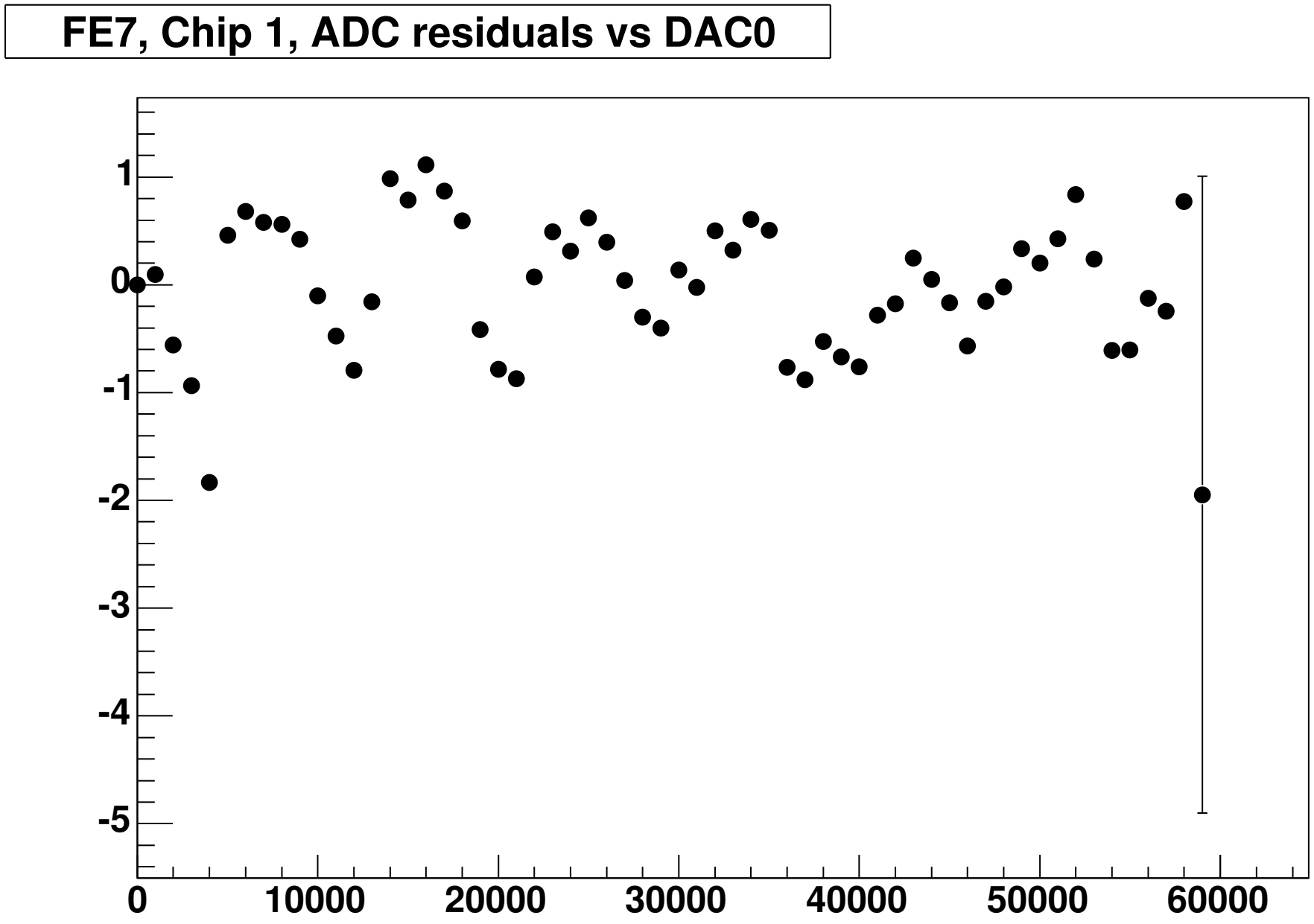

FE7, Chip 0, ADC mean vs DAC1
χ² / ndf 2.783e+05 / 57
p0 32.6 ± 0.01183
p1 -6.36e-06 ± 3.404e-07
38
37
36
35
34
33
32
31
30
29
0
10000
20000
30000
40000
50000
60000

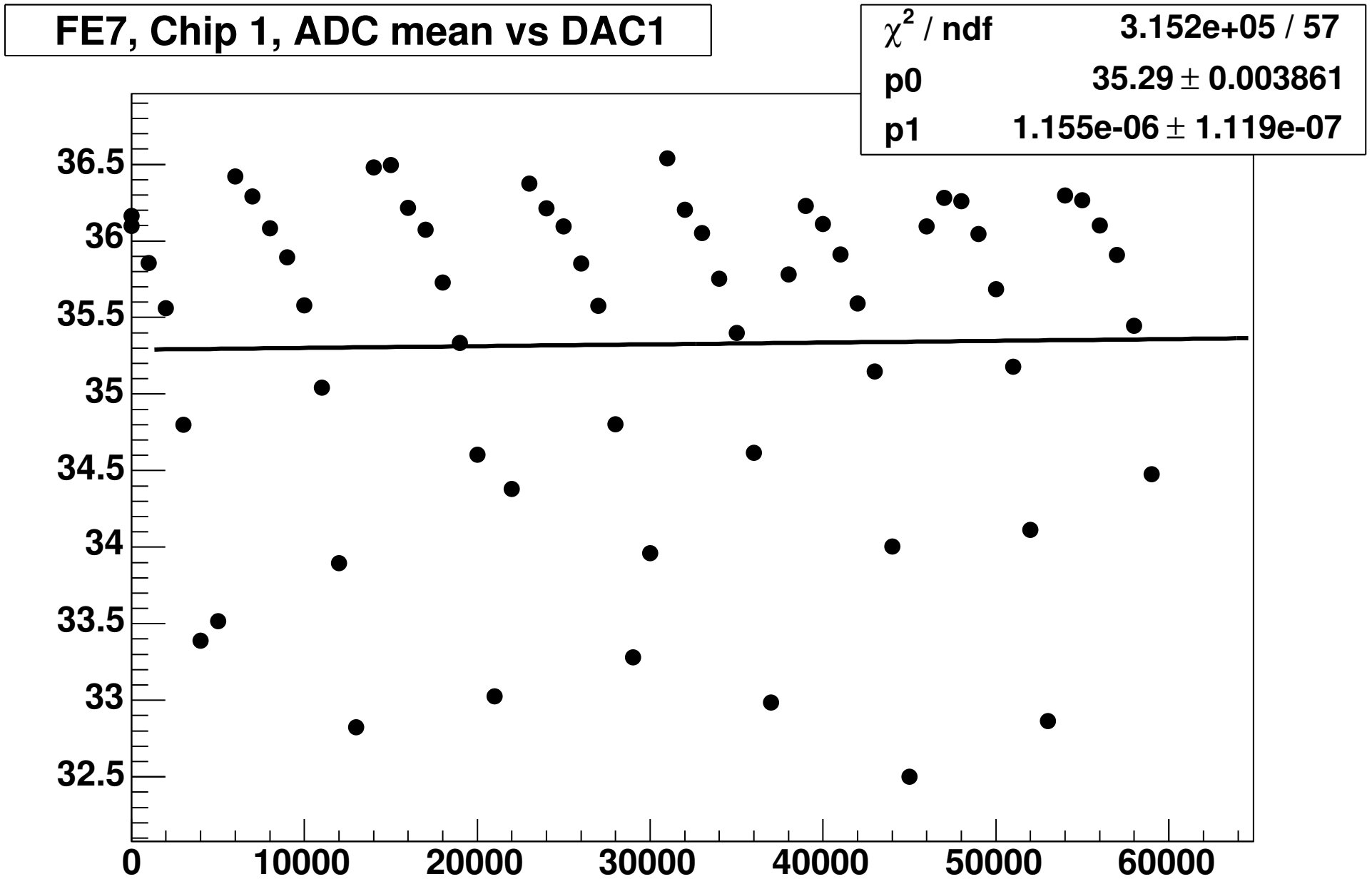

FE7, Chip 0, ADC noise vs DAC1
4.5
4
3.5
3
2.5
2
1.5
1
0
10000
20000
30000
40000
50000
60000

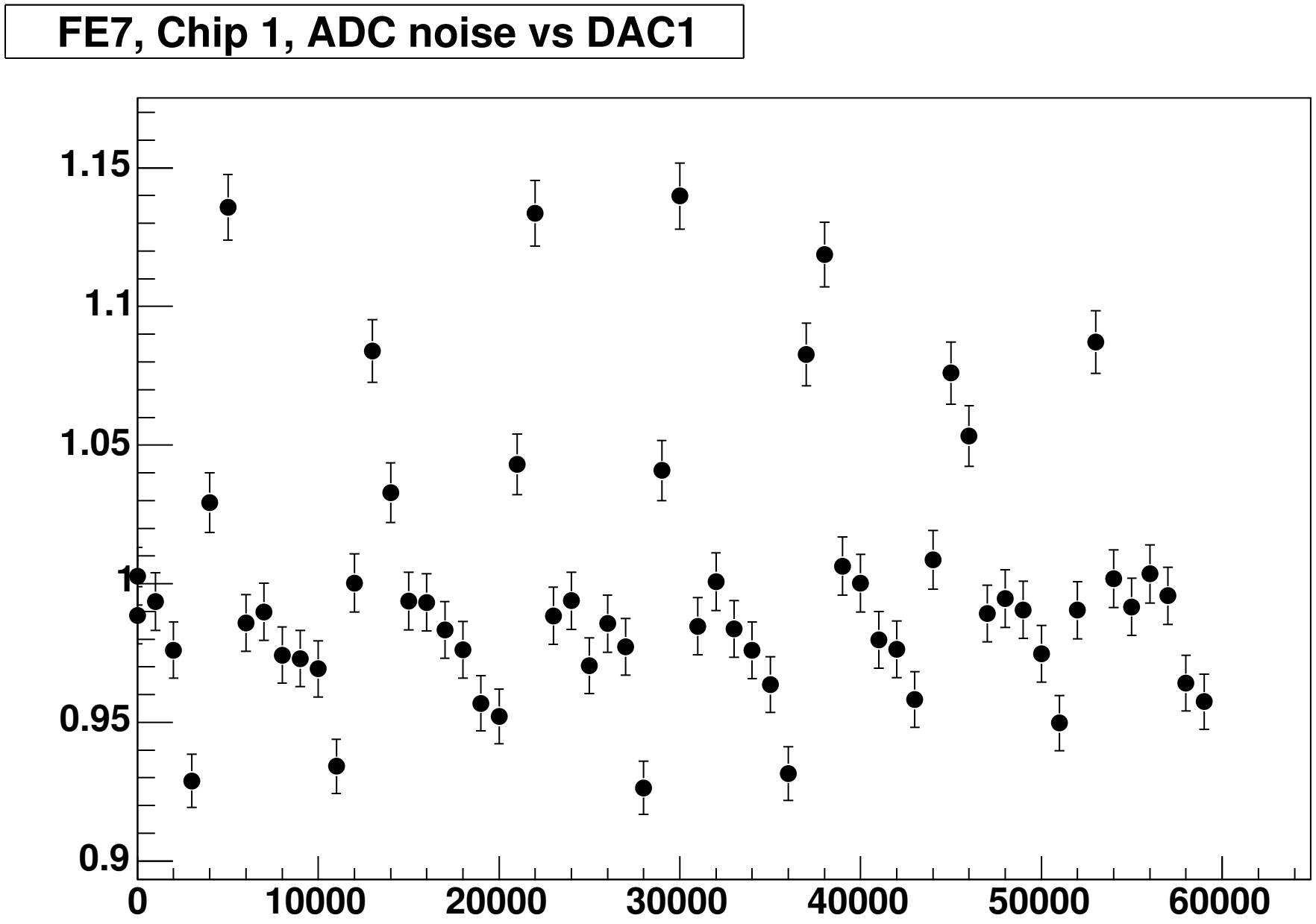

FE7, Chip 0, ADC residuals vs DAC1
5
4
3
2
1
0
-1
-2
-3
0
10000
20000
30000
40000
50000
60000

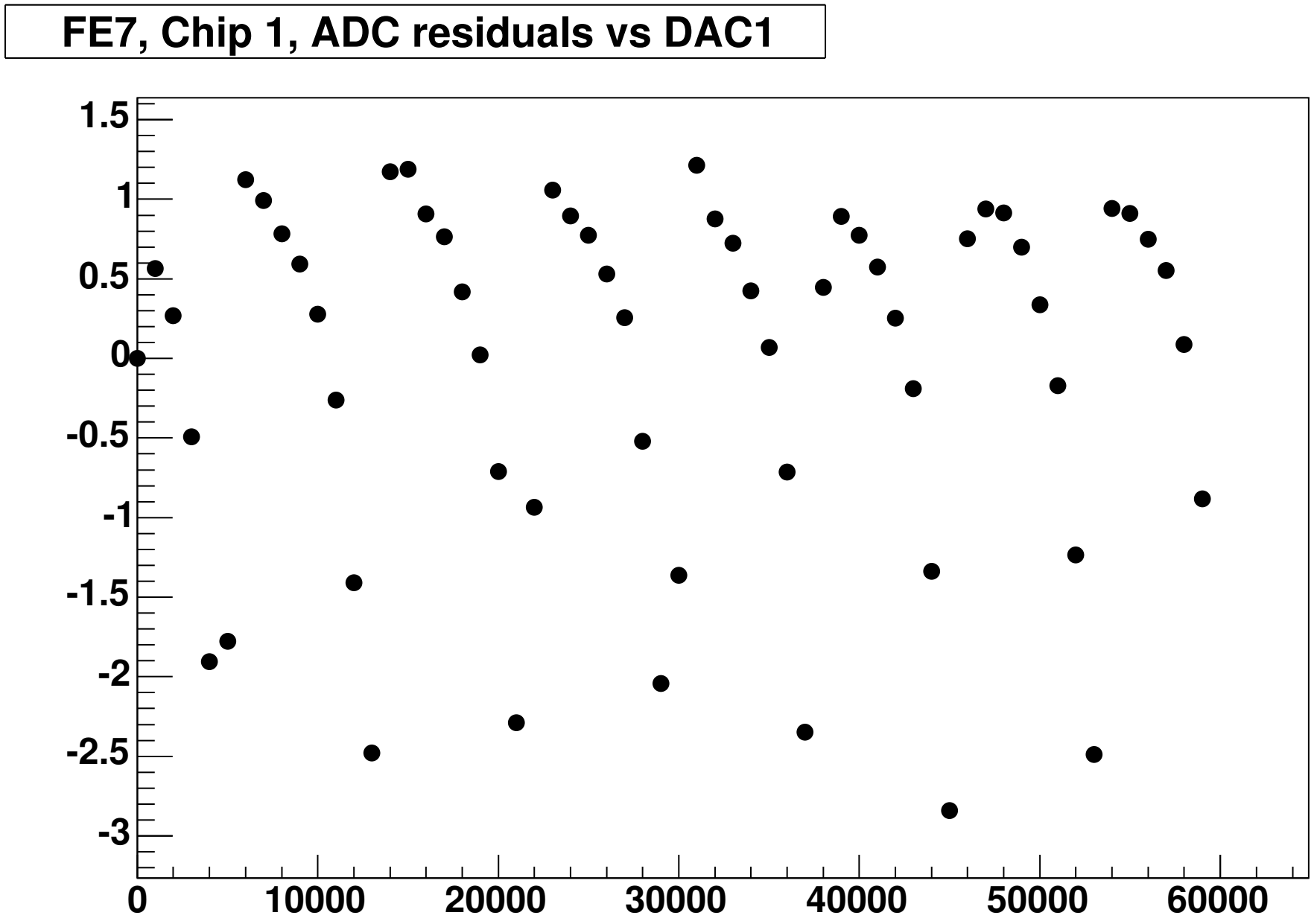

FE7, Chip 1, ADC mean vs DAC0
χ² / ndf 7.22e+04 / 57
p0 -107.5 ± 0.004328
p1 0.2327 ± 1.409e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

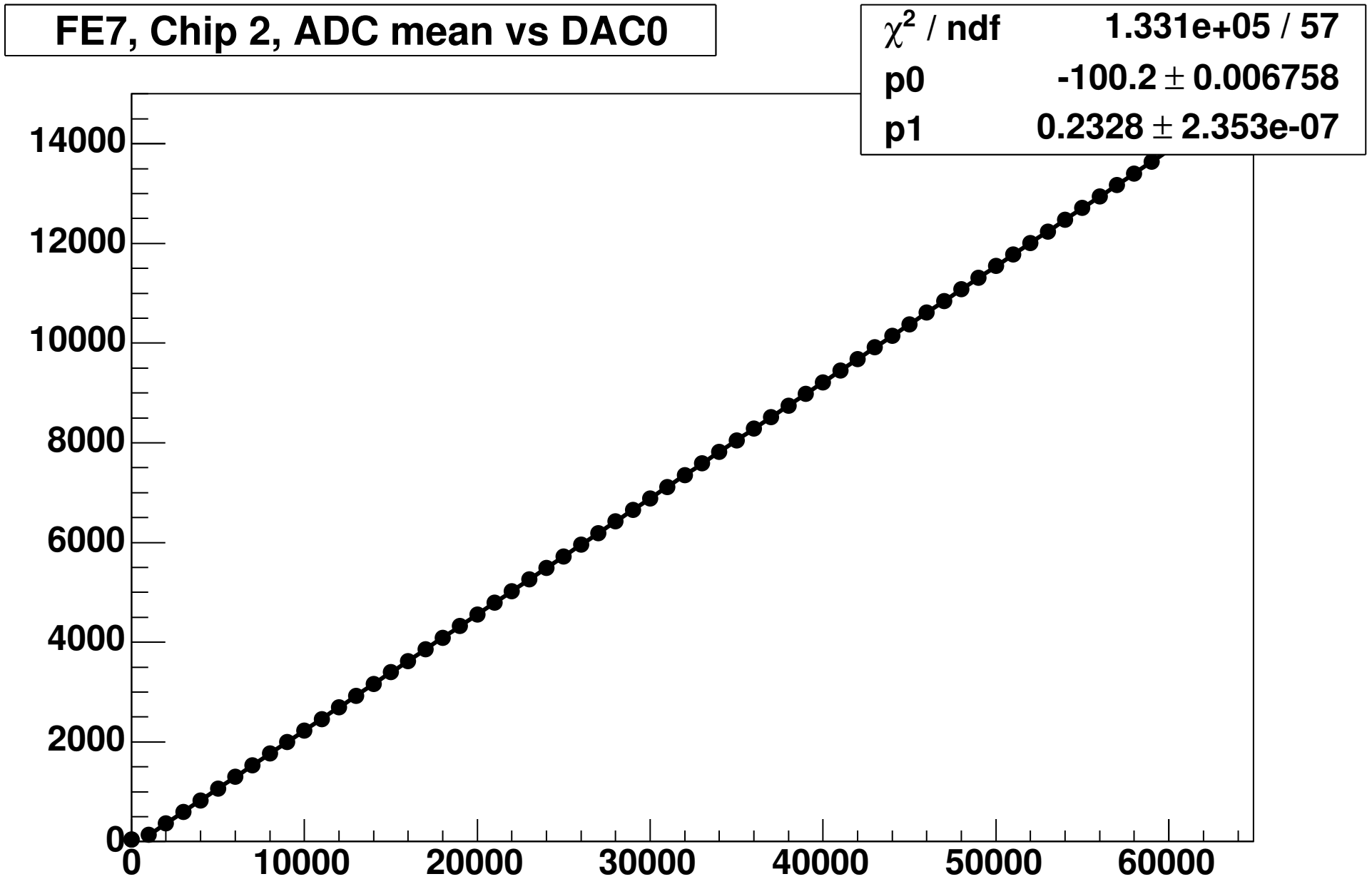

FE7, Chip 1, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

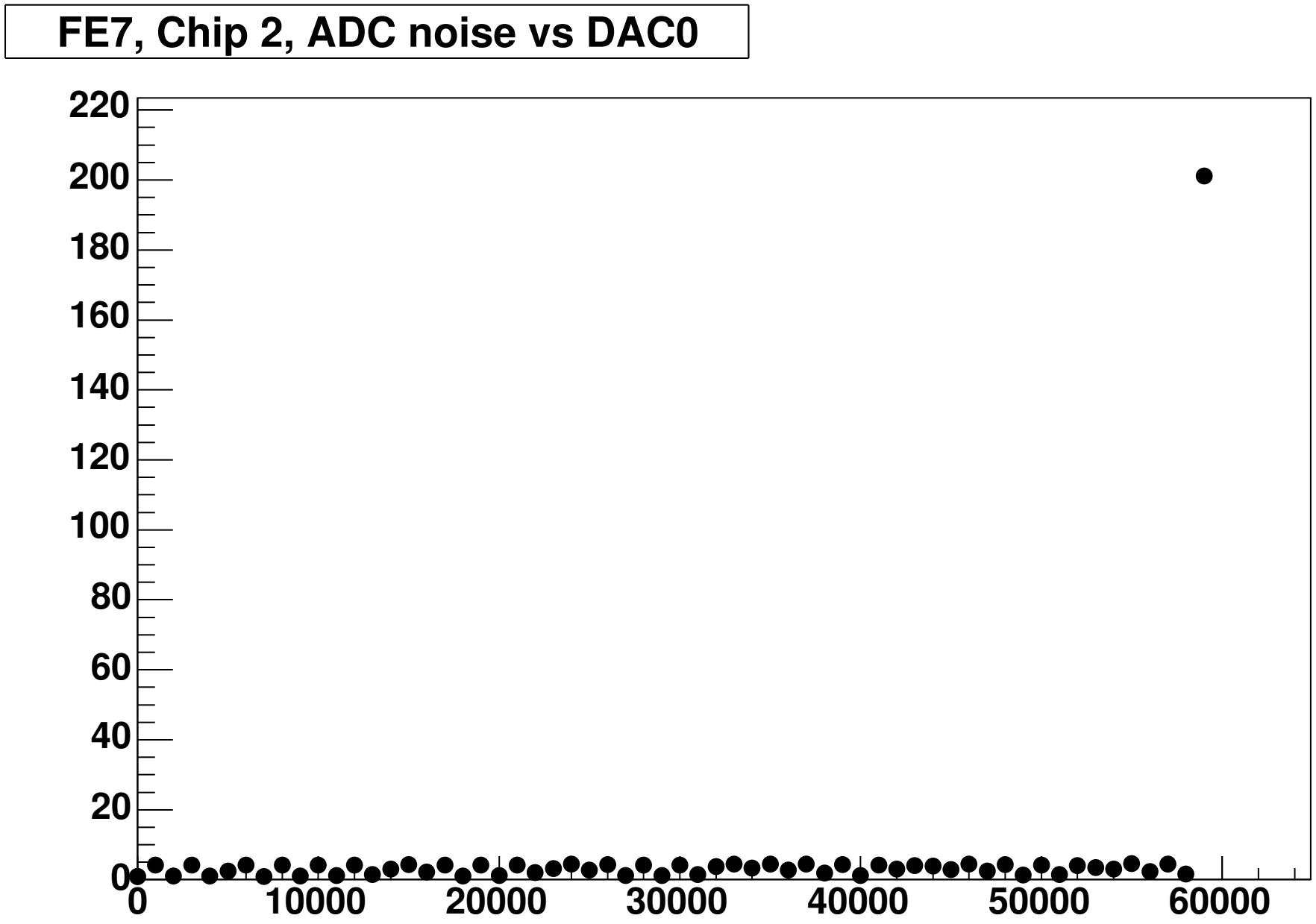

FE7, Chip 1, ADC residuals vs DAC0
1
0
-1
-2
-3
-4
-5
0
10000
20000
30000
40000
50000
60000

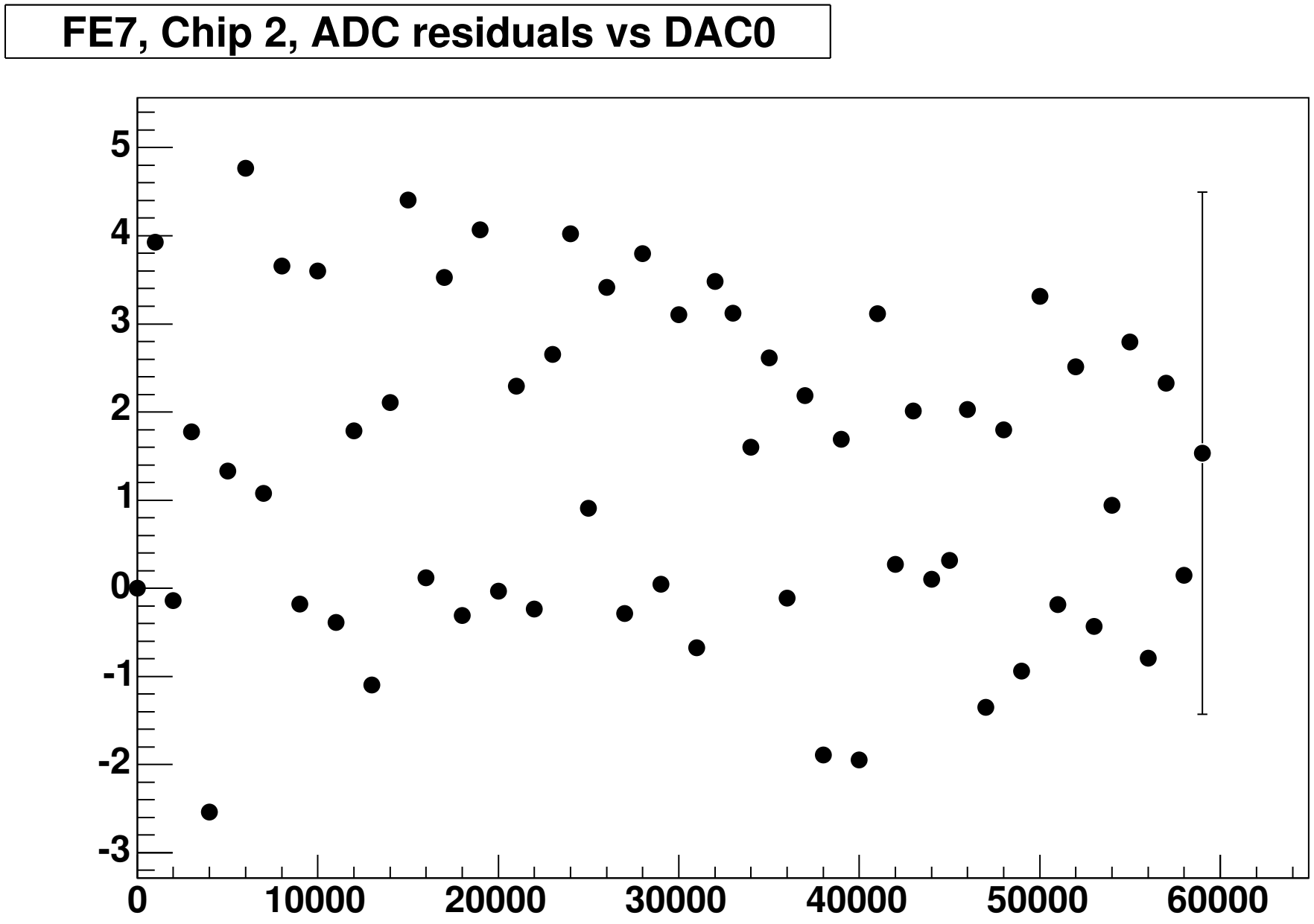

FE7, Chip 1, ADC mean vs DAC1
χ² / ndf 3.152e+05 / 57
p0 35.29 ± 0.003861
p1 1.155e-06 ± 1.119e-07
36.5
36
35.5
35
34.5
34
33.5
33
32.5
0
10000
20000
30000
40000
50000
60000

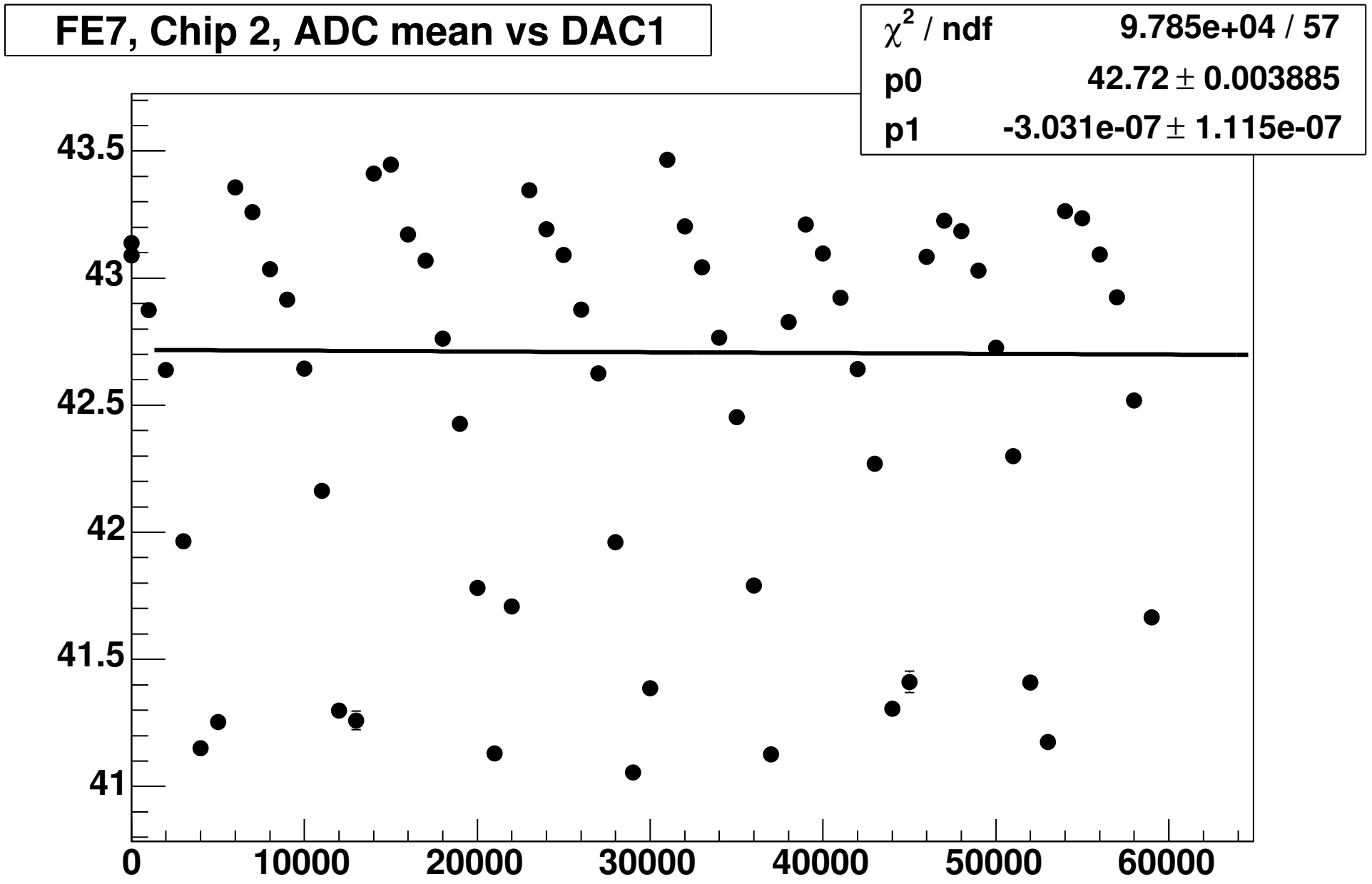

FE7, Chip 1, ADC noise vs DAC1
1.15
1.1
1.05
1
0.95
0.9
0
10000
20000
30000
40000
50000
60000

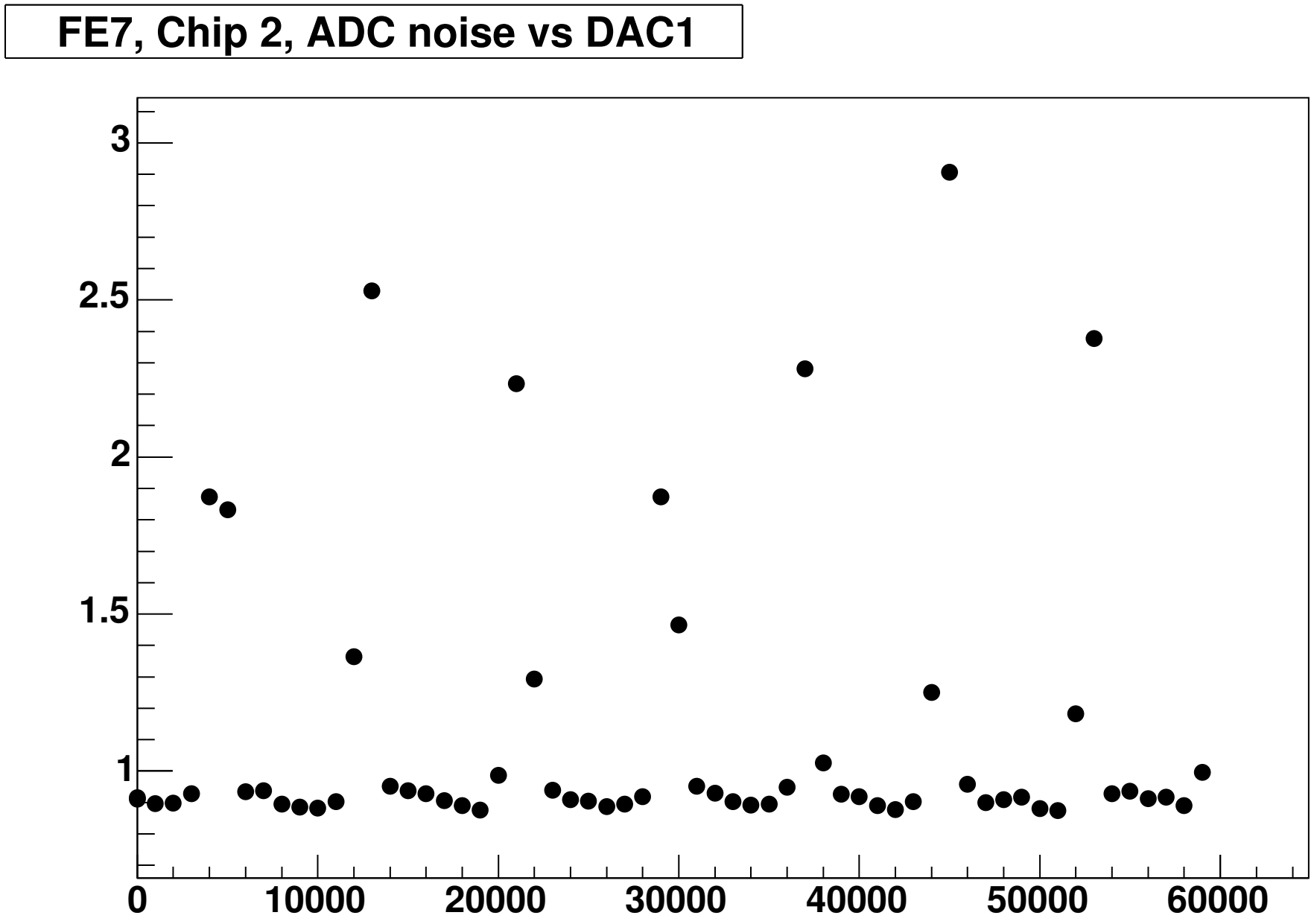

FE7, Chip 1, ADC residuals vs DAC1
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
-3
0
10000
20000
30000
40000
50000
60000

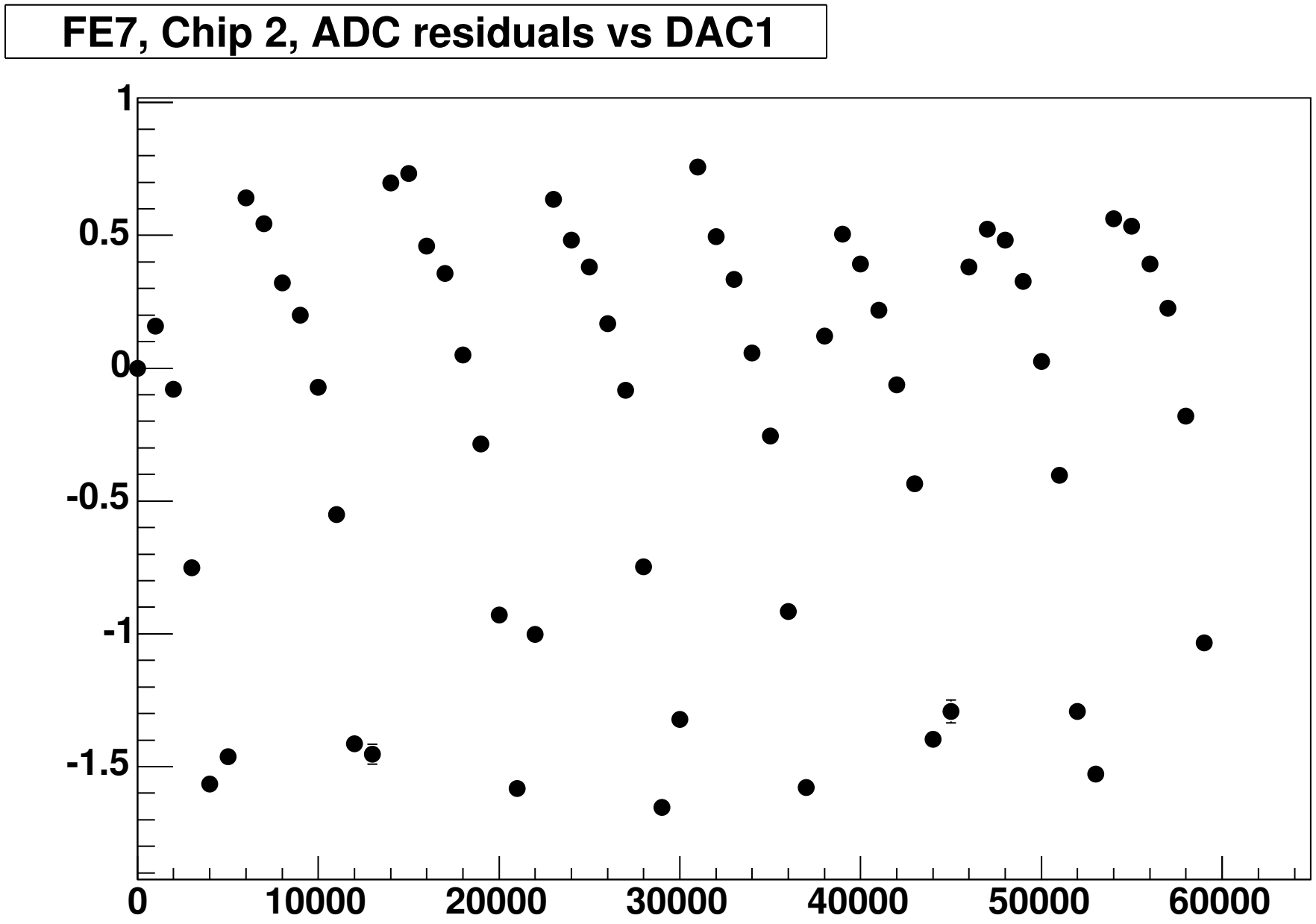

FE7, Chip 2, ADC mean vs DAC0
χ² / ndf 1.331e+05 / 57
p0 -100.2 ± 0.006758
p1 0.2328 ± 2.353e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

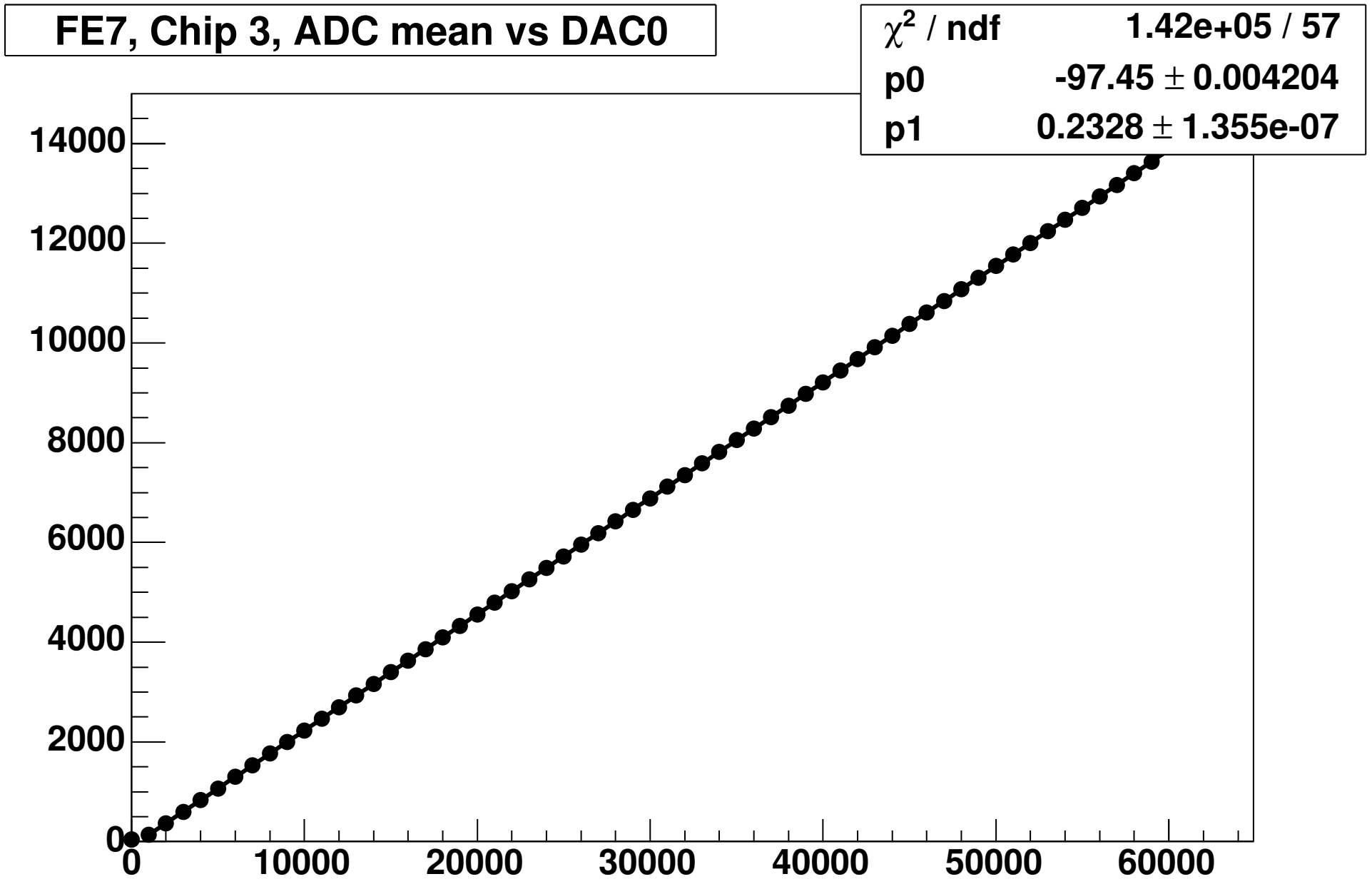

FE7, Chip 2, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

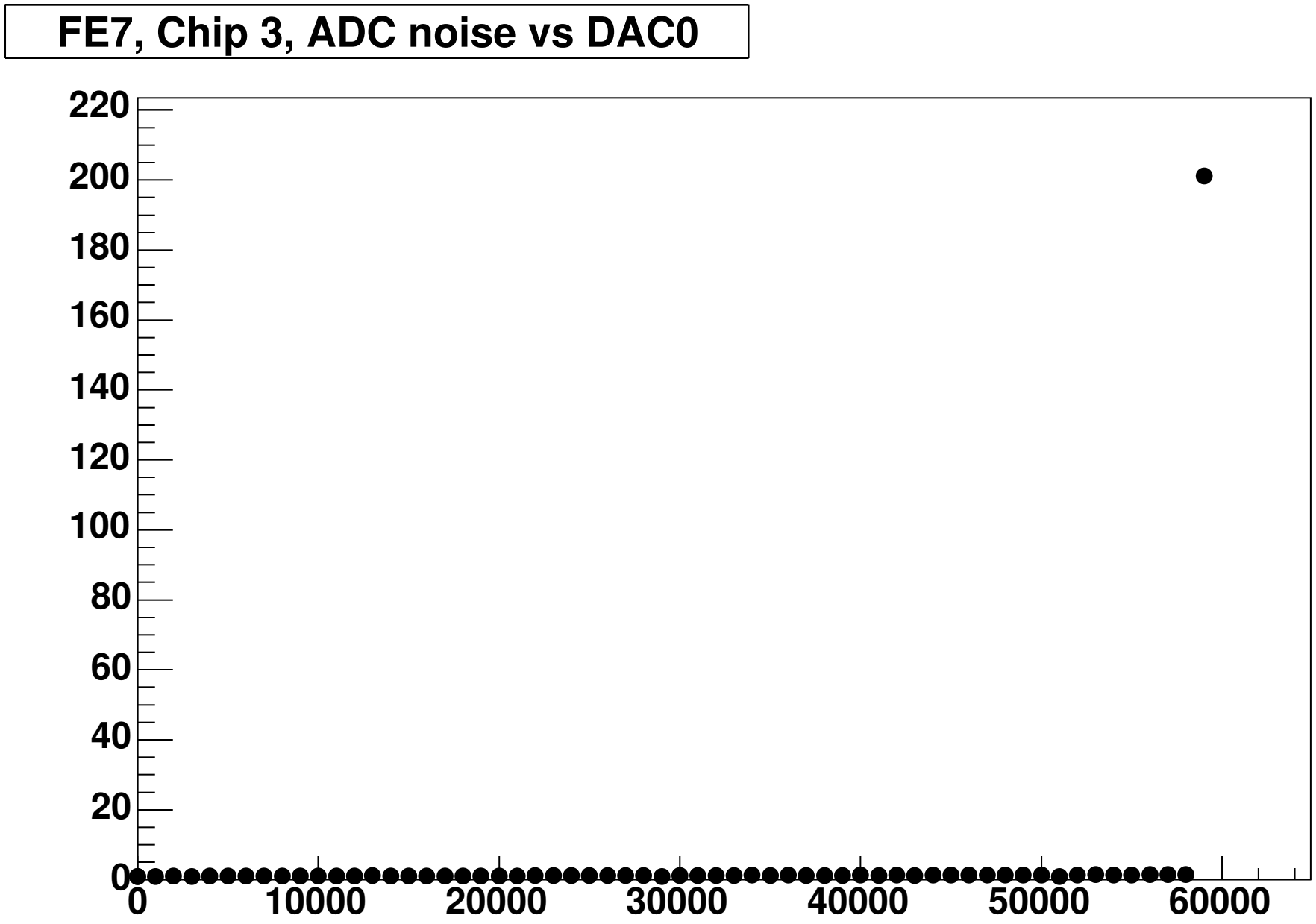

FE7, Chip 2, ADC residuals vs DAC0
5
4
3
2
1
0
-1
-2
-3
0
10000
20000
30000
40000
50000
60000

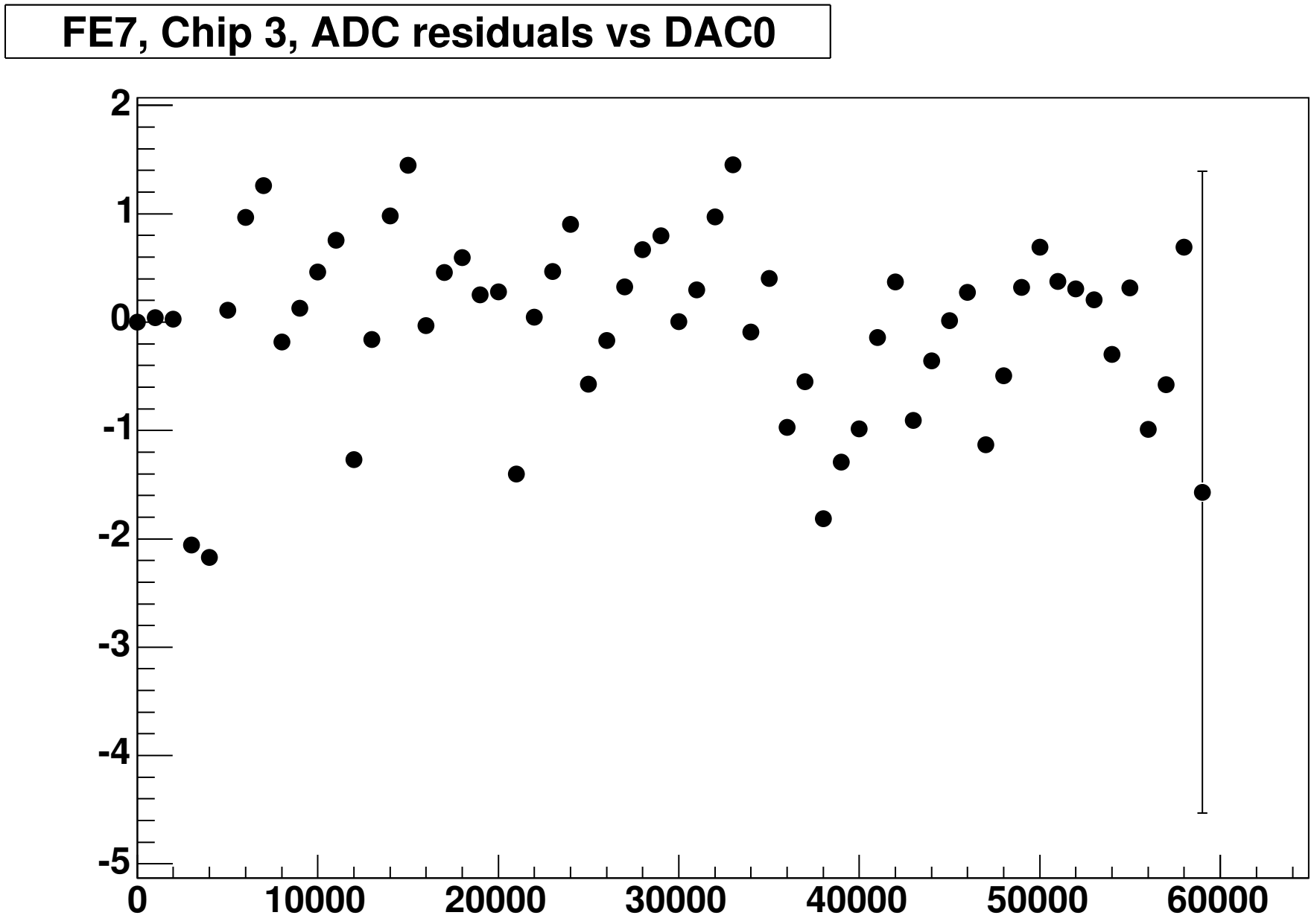

FE7, Chip 2, ADC mean vs DAC1
χ² / ndf 9.785e+04 / 57
p0 42.72 ± 0.003885
p1 -3.031e-07 ± 1.115e-07
43.5
43
42.5
42
41.5
41
0
10000
20000
30000
40000
50000
60000

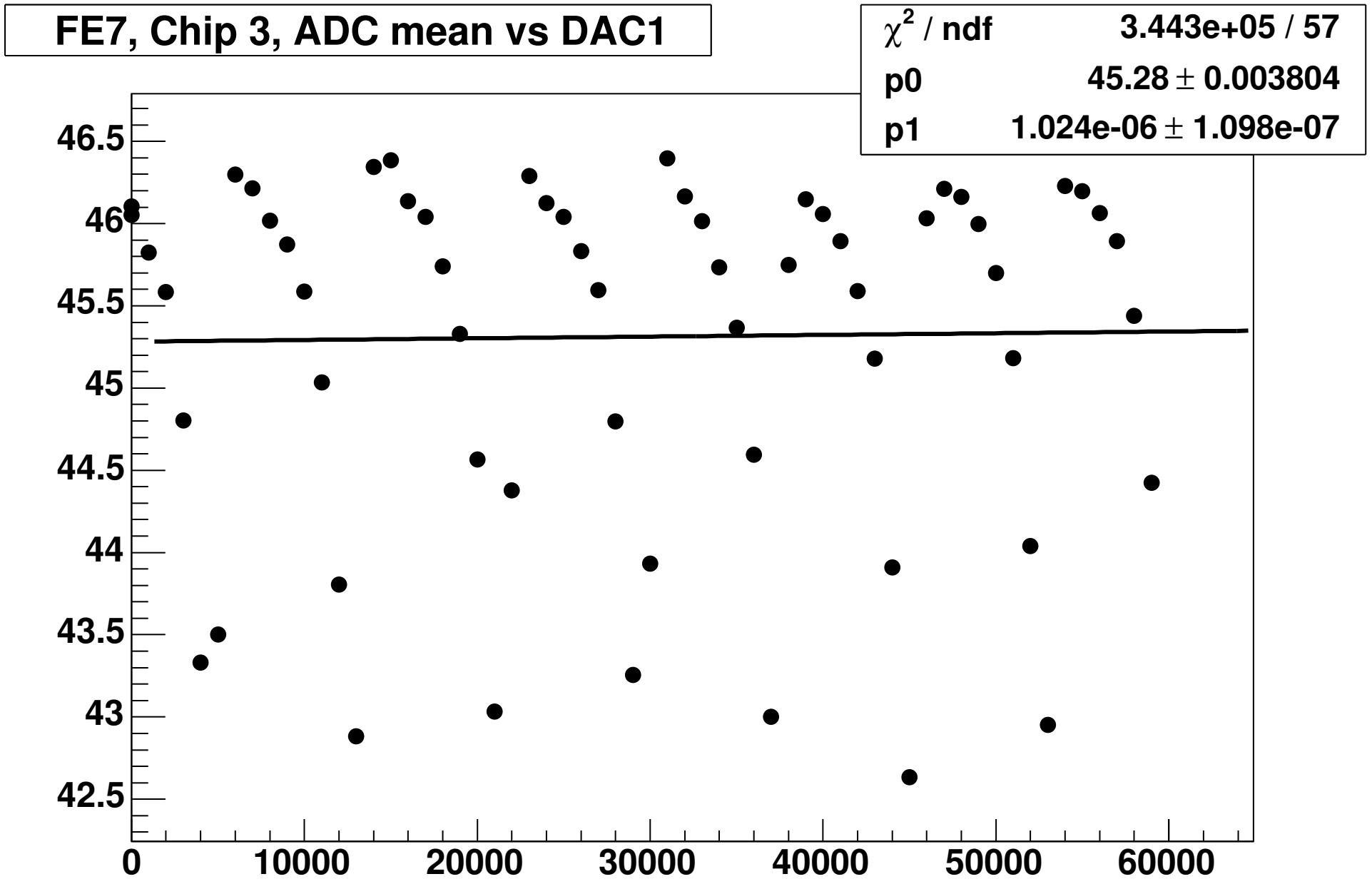

FE7, Chip 2, ADC noise vs DAC1
3
2.5
2
1.5
1
0
10000
20000
30000
40000
50000
60000

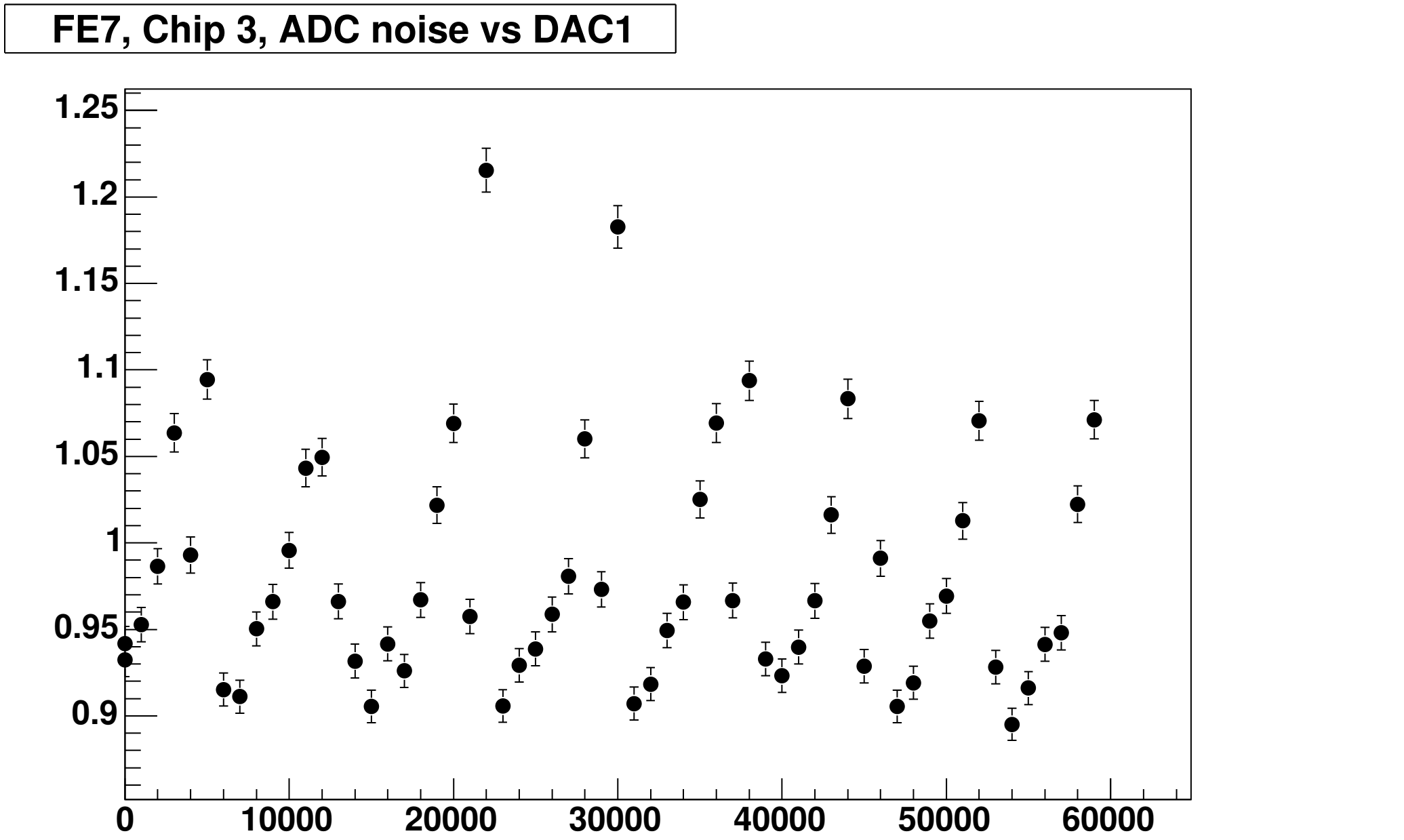

FE7, Chip 2, ADC residuals vs DAC1
1
0.5
0
-0.5
-1
-1.5
0
10000
20000
30000
40000
50000
60000

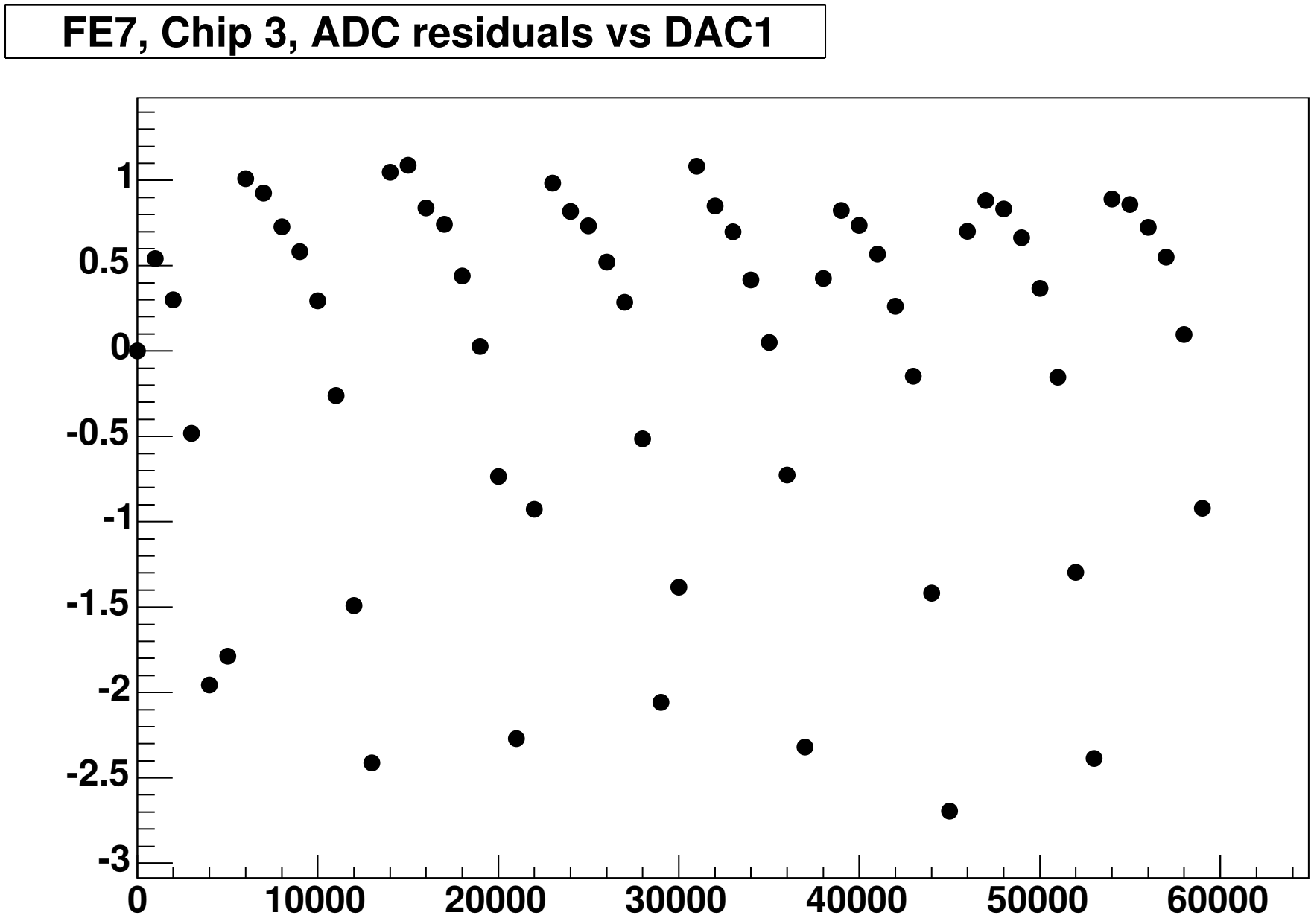

FE7, Chip 3, ADC mean vs DAC0
χ² / ndf 1.42e+05 / 57
p0 -97.45 ± 0.004204
p1 0.2328 ± 1.355e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

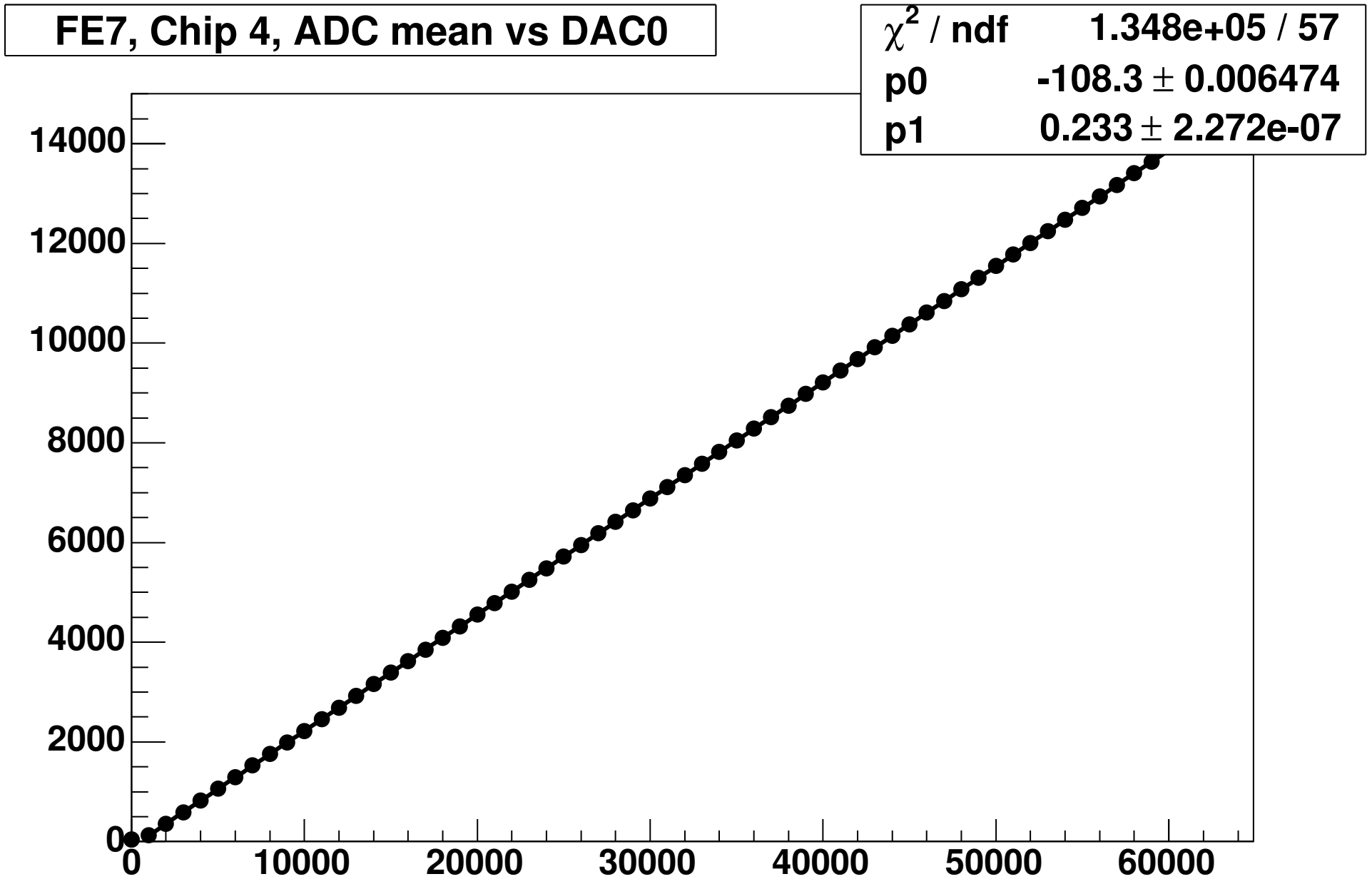

FE7, Chip 3, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

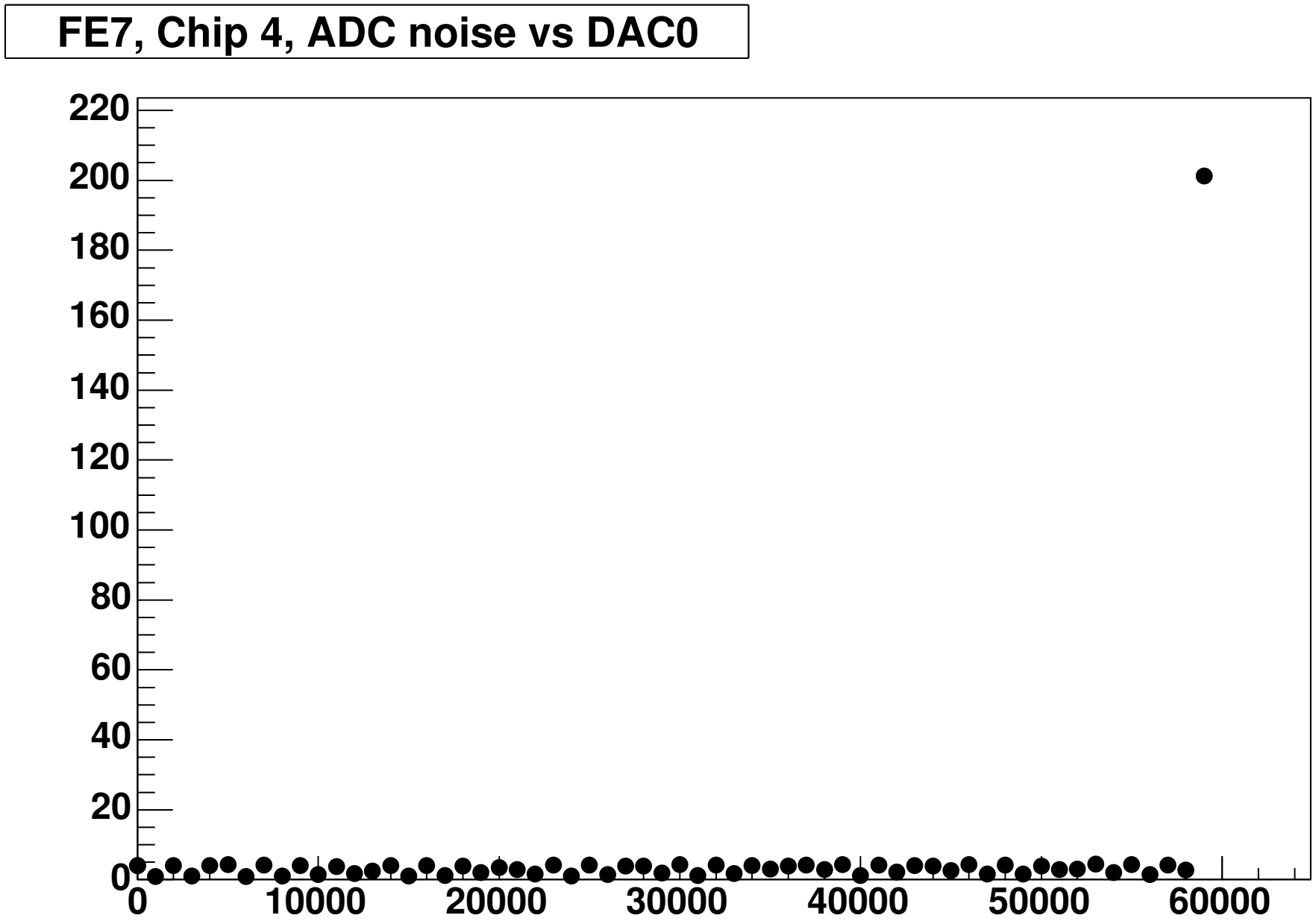

FE7, Chip 3, ADC residuals vs DAC0
2
1
0
-1
-2
-3
-4
-5
0
10000
20000
30000
40000
50000
60000

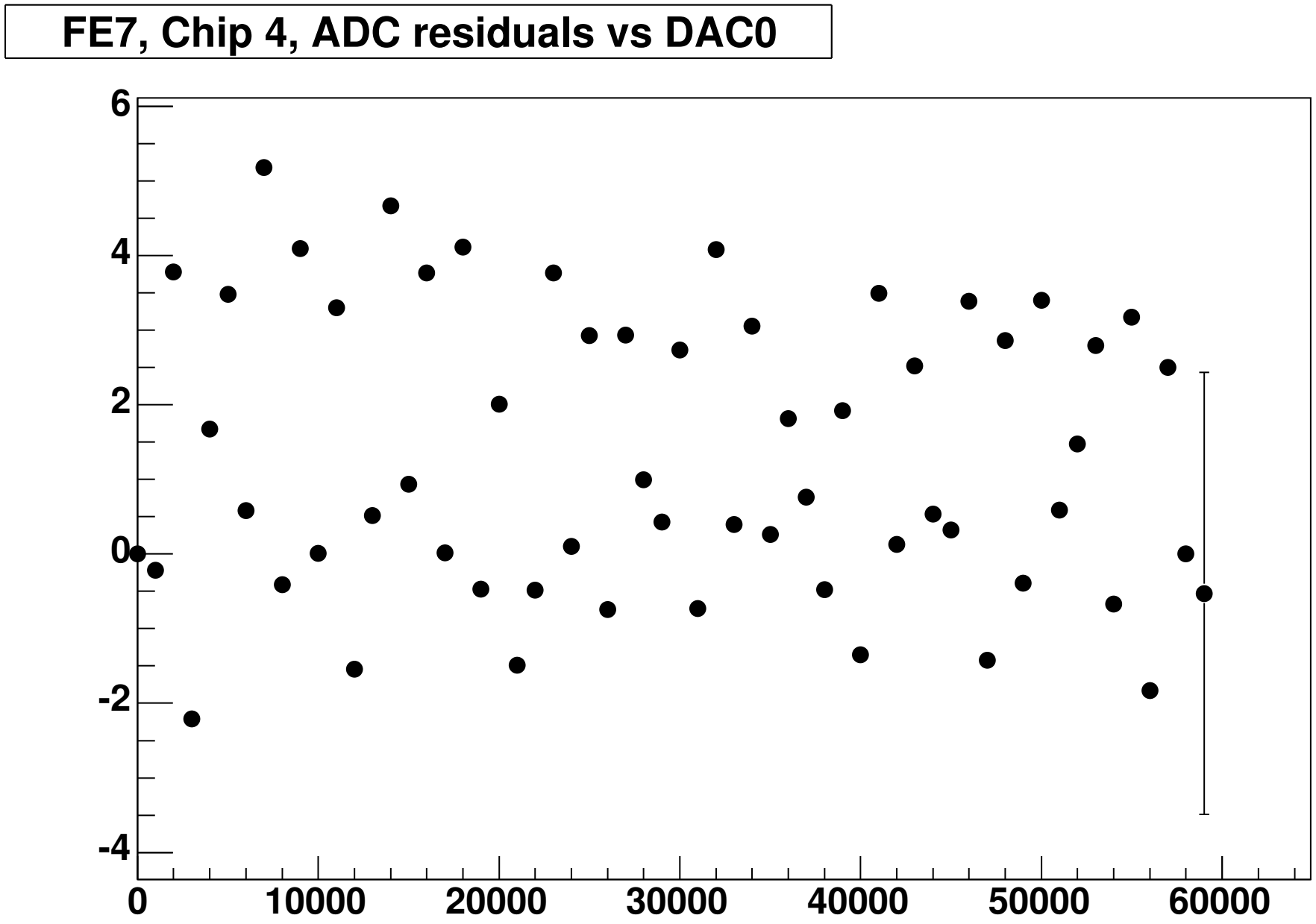

FE7, Chip 3, ADC mean vs DAC1
χ² / ndf 3.443e+05 / 57
p0 45.28 ± 0.003804
p1 1.024e-06 ± 1.098e-07
46.5
46
45.5
45
44.5
44
43.5
43
42.5
0
10000
20000
30000
40000
50000
60000

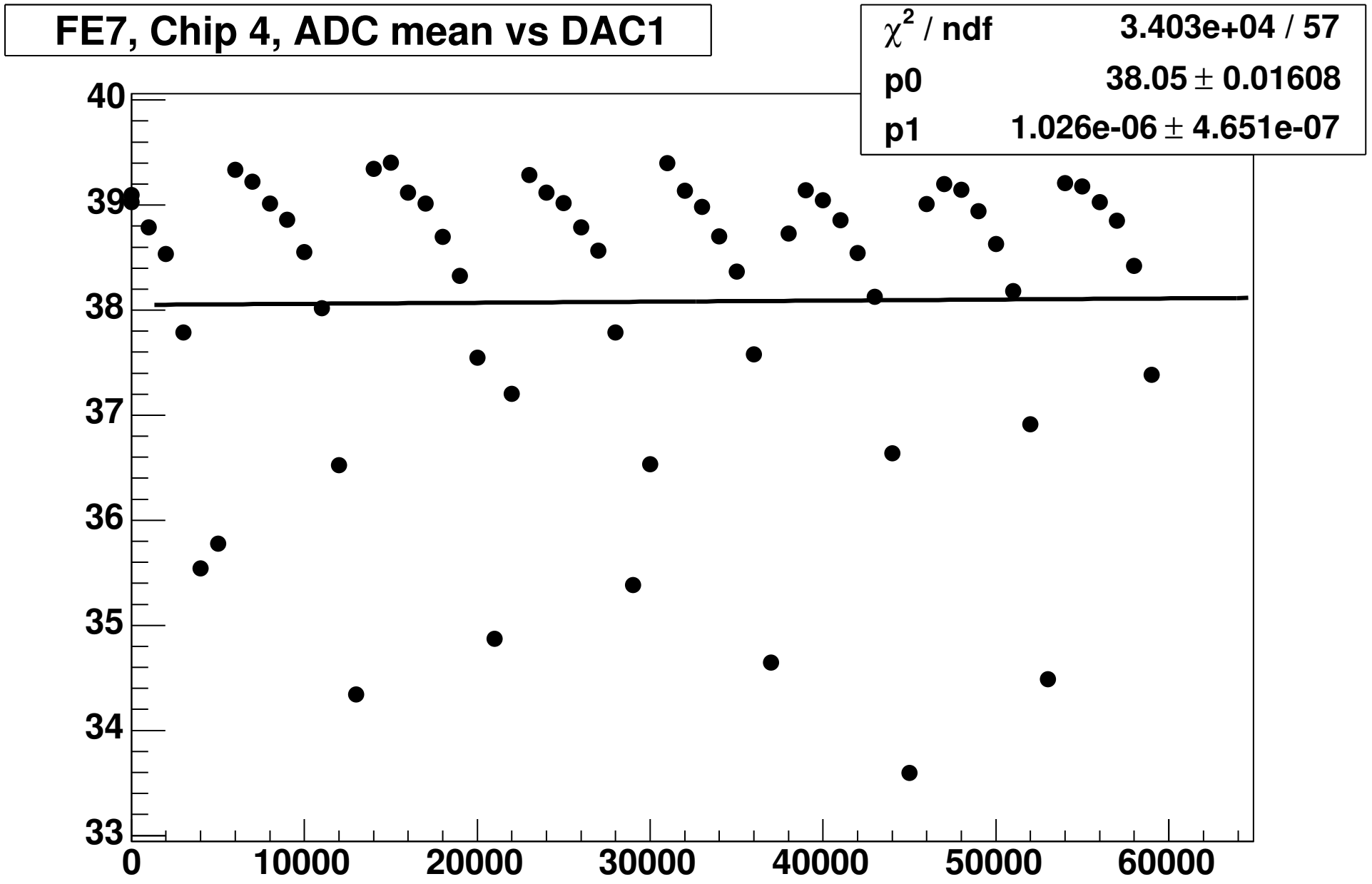

FE7, Chip 3, ADC noise vs DAC1
1.25
1.2
1.15
1.1
1.05
1
0.95
0.9
0
10000
20000
30000
40000
50000
60000

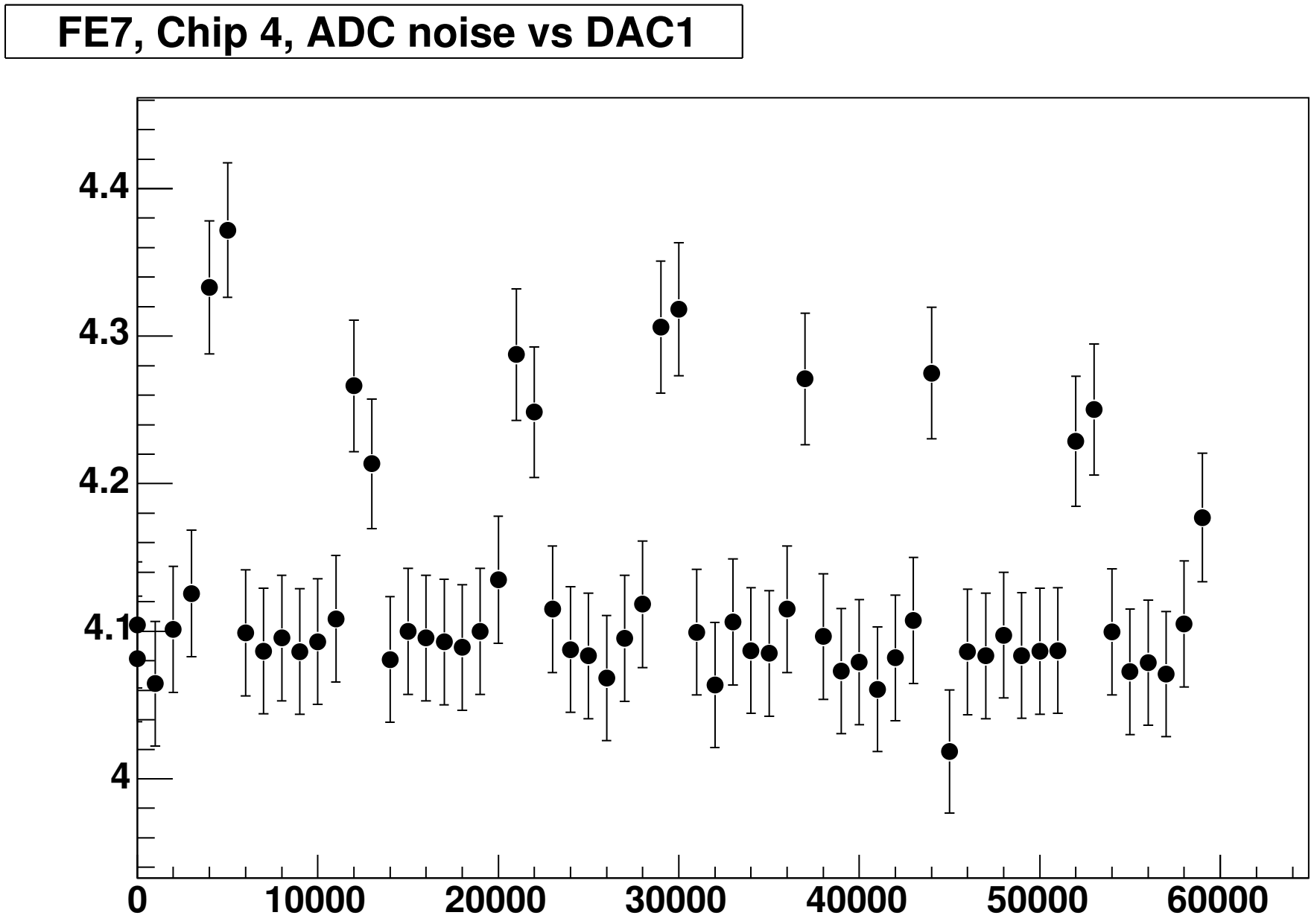

FE7, Chip 3, ADC residuals vs DAC1
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
-3
0
10000
20000
30000
40000
50000
60000

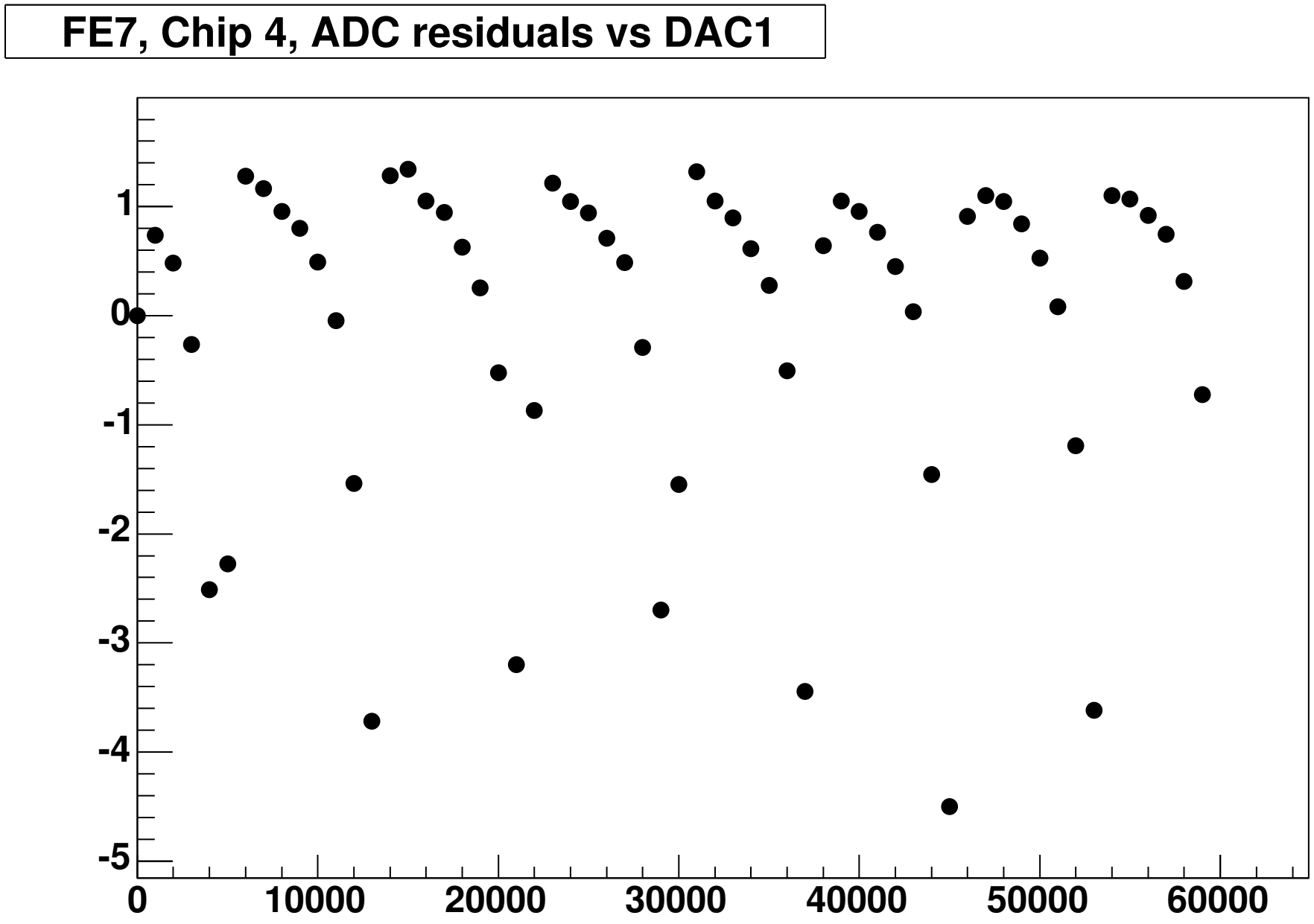

FE7, Chip 4, ADC mean vs DAC0
χ² / ndf 1.348e+05 / 57
p0 -108.3 ± 0.006474
p1 0.233 ± 2.272e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

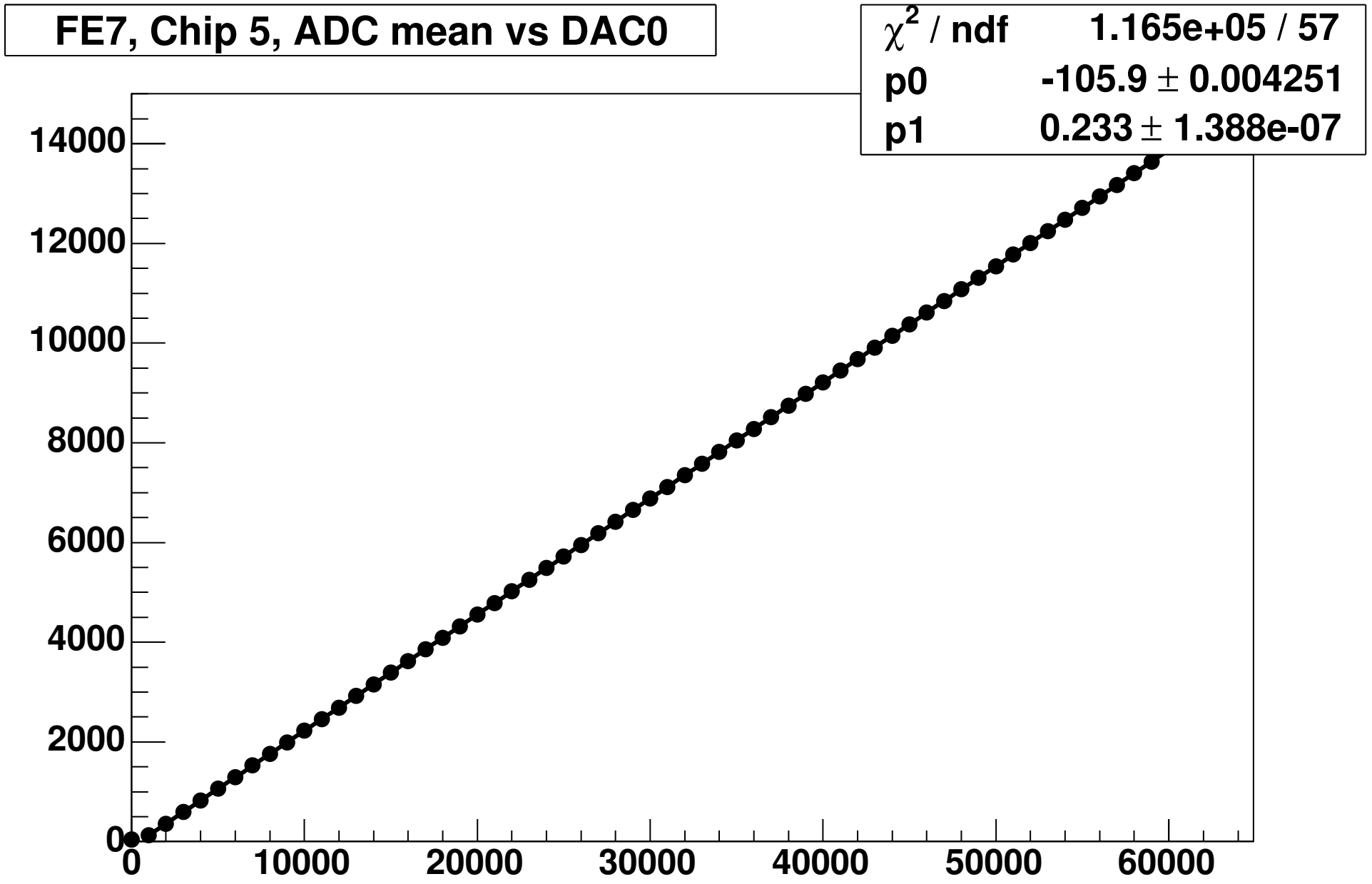

FE7, Chip 4, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

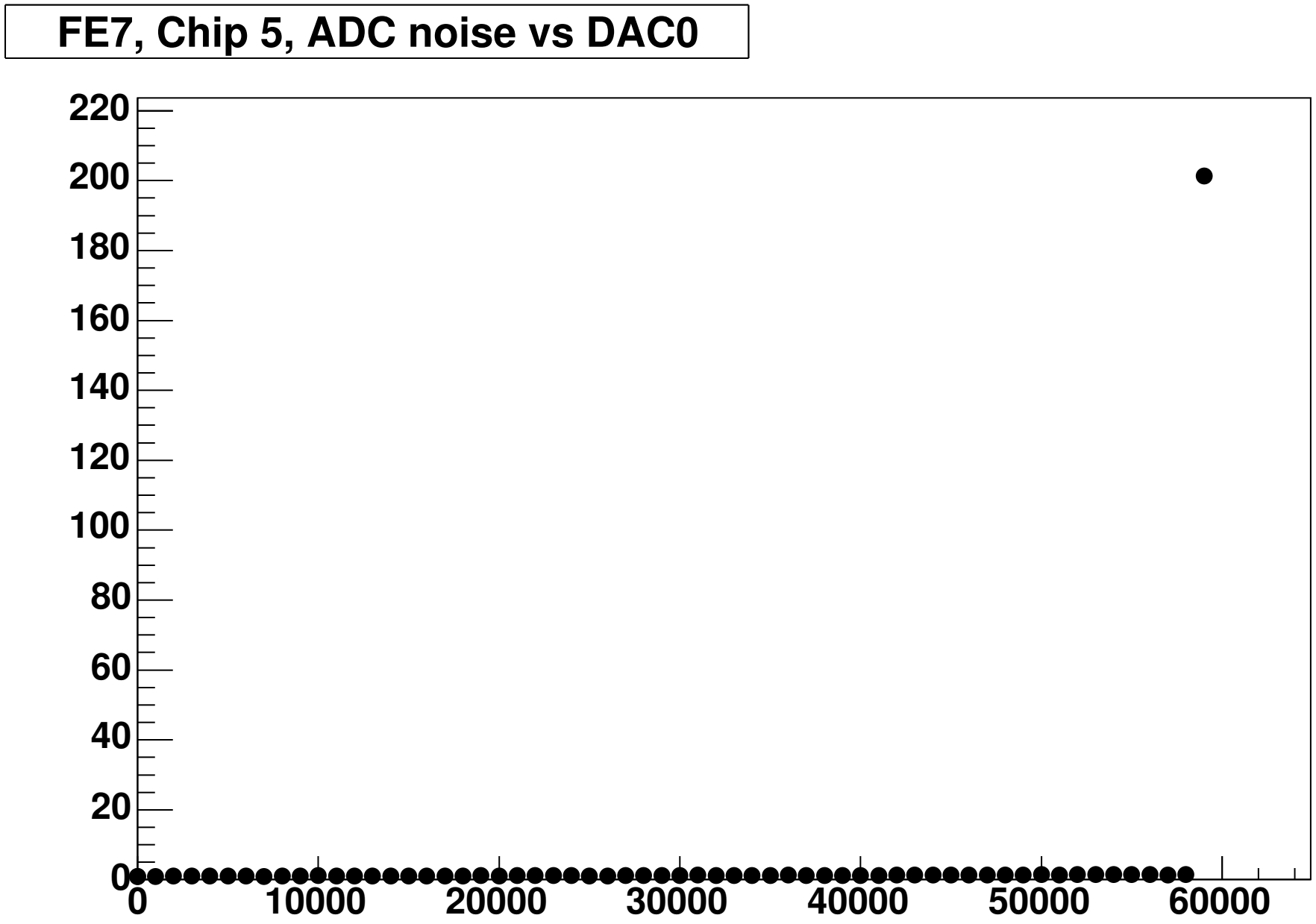

FE7, Chip 4, ADC residuals vs DAC0
6
4
2
0
-2
-4
0
10000
20000
30000
40000
50000
60000

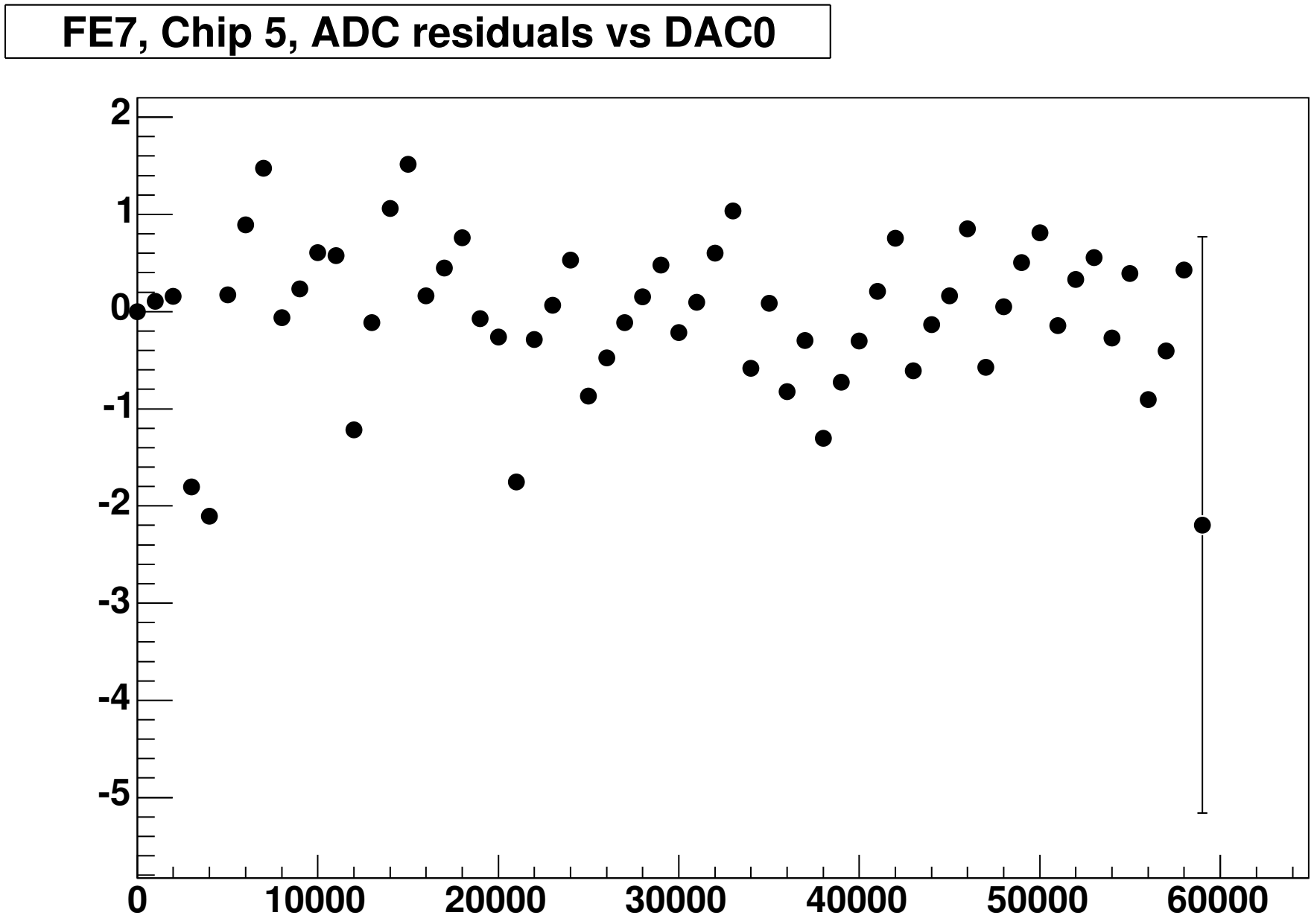

FE7, Chip 4, ADC mean vs DAC1
χ² / ndf 3.403e+04 / 57
p0 38.05 ± 0.01608
p1 1.026e-06 ± 4.651e-07
40
39
38
37
36
35
34
33
0
10000
20000
30000
40000
50000
60000

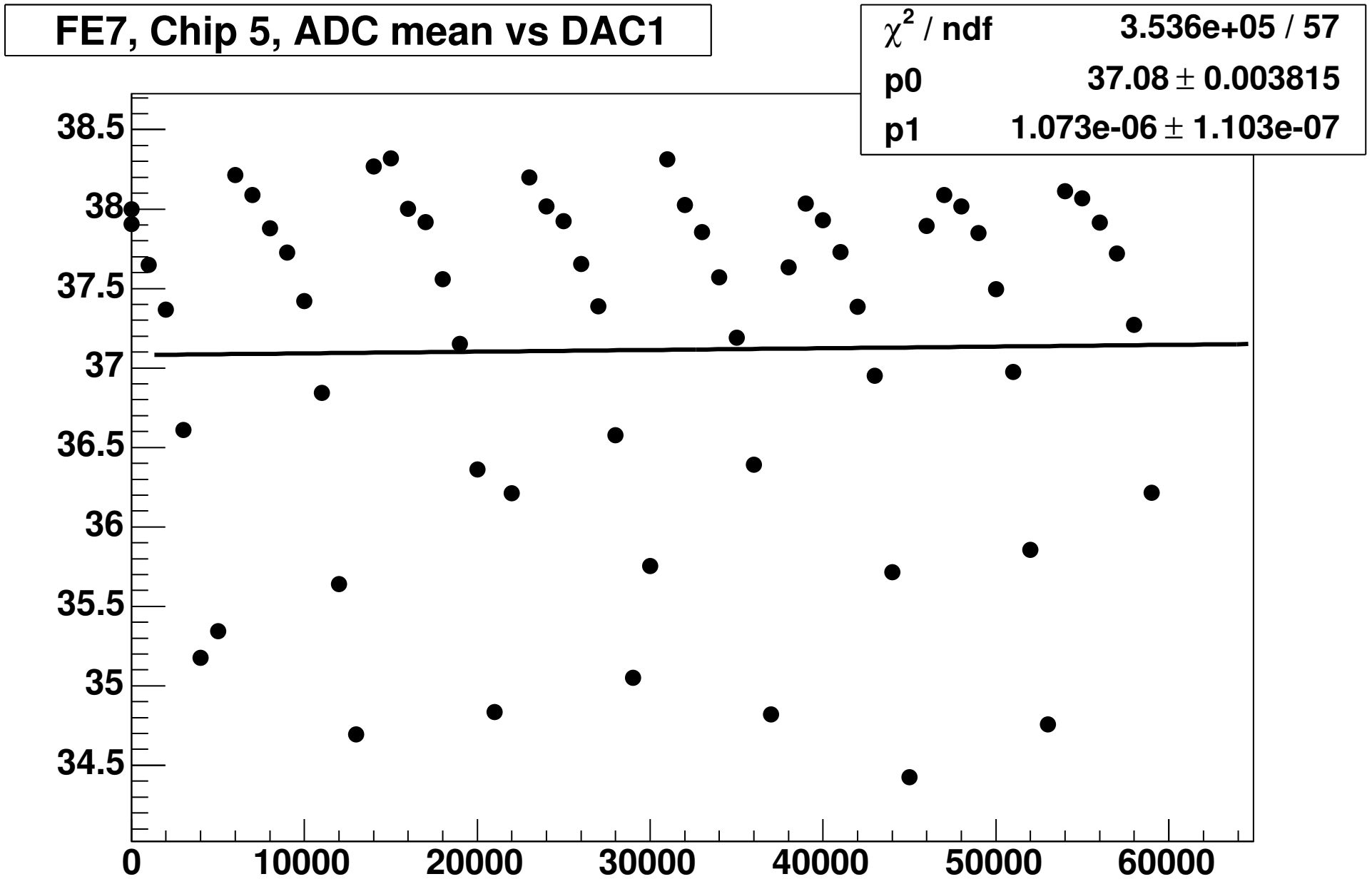

FE7, Chip 4, ADC noise vs DAC1
4.4
4.3
4.2
4.1
4
0
10000
20000
30000
40000
50000
60000

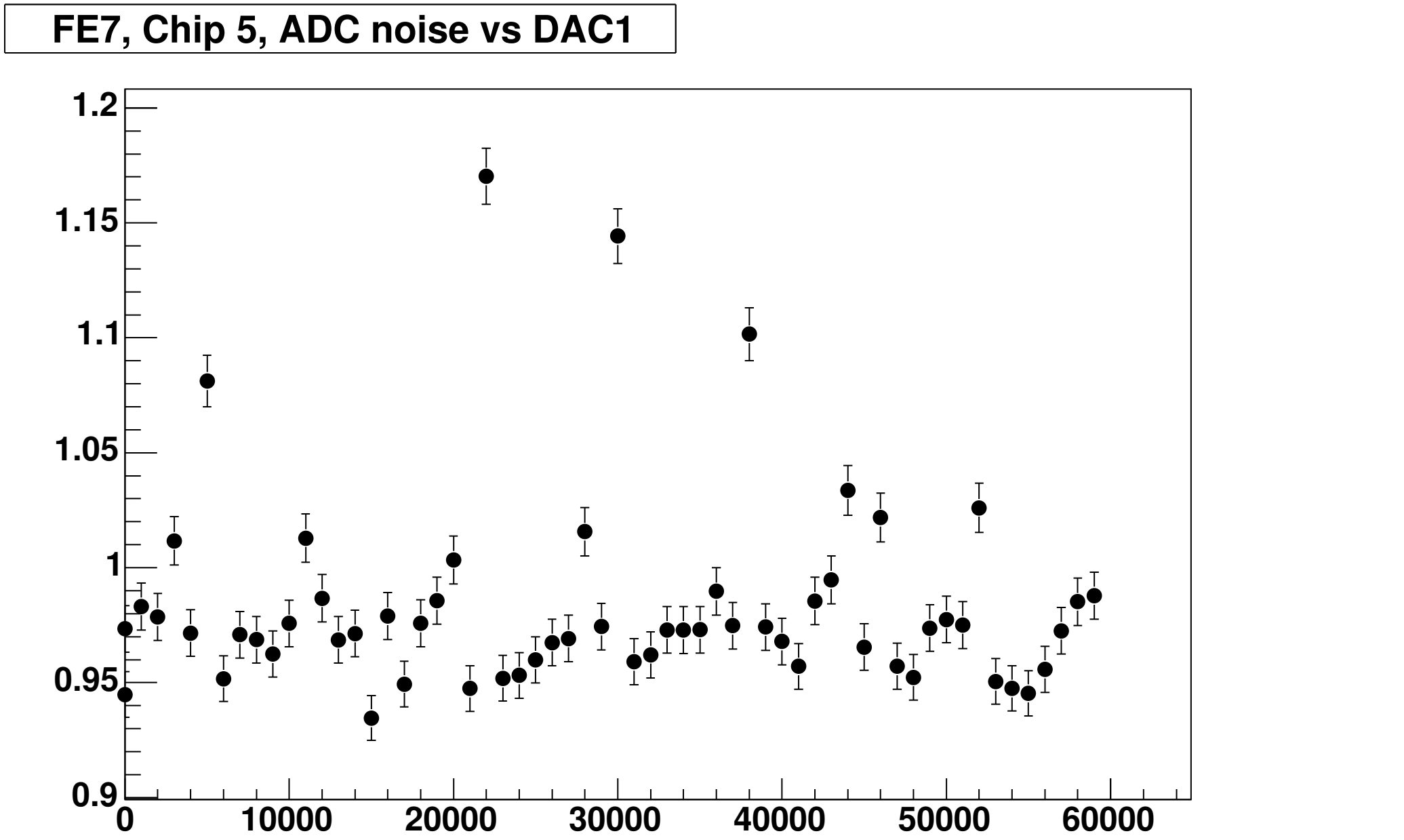

FE7, Chip 4, ADC residuals vs DAC1
1
0
-1
-2
-3
-4
-5
0
10000
20000
30000
40000
50000
60000

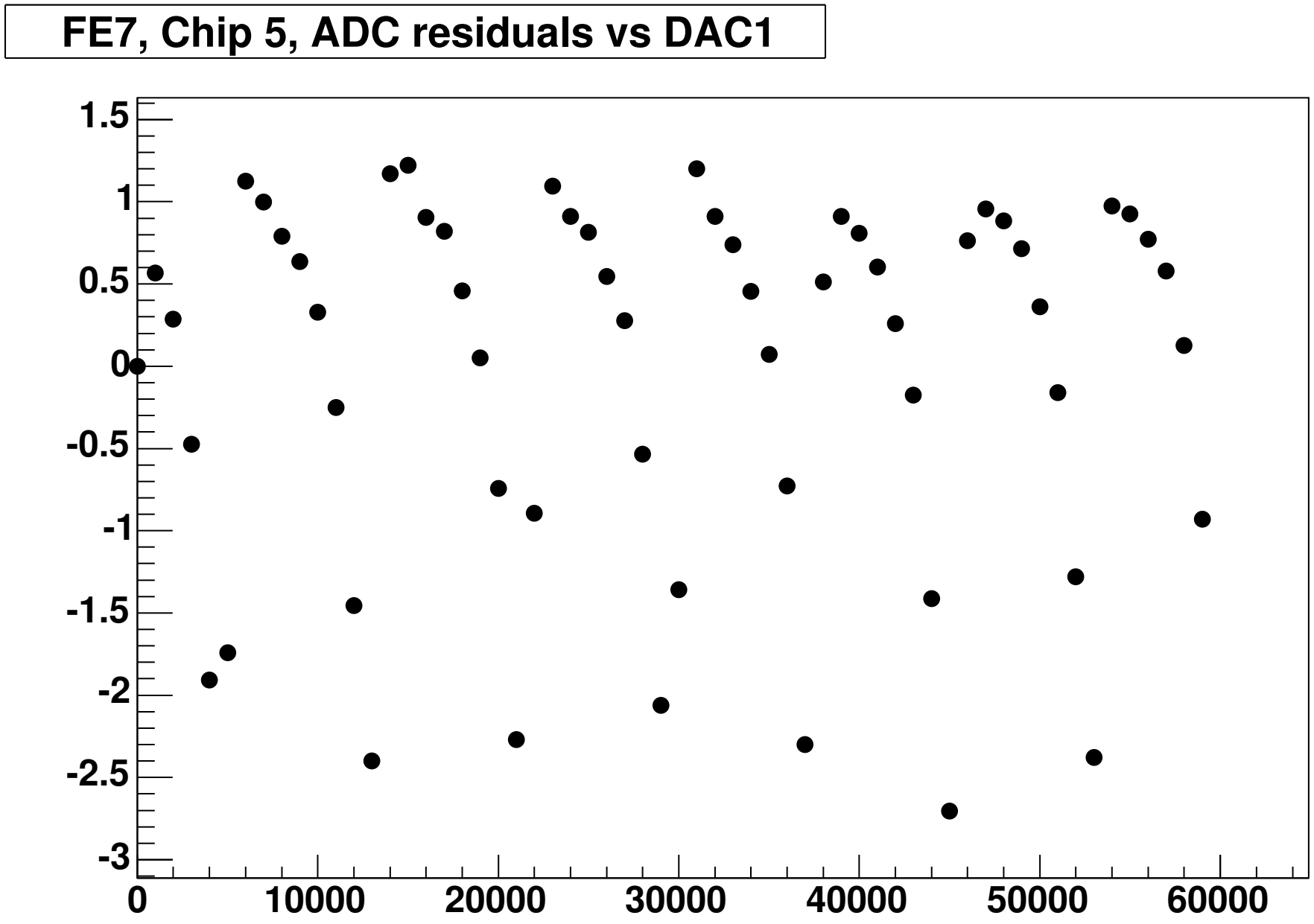

FE7, Chip 5, ADC mean vs DAC0
χ² / ndf 1.165e+05 / 57
p0 -105.9 ± 0.004251
p1 0.233 ± 1.388e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

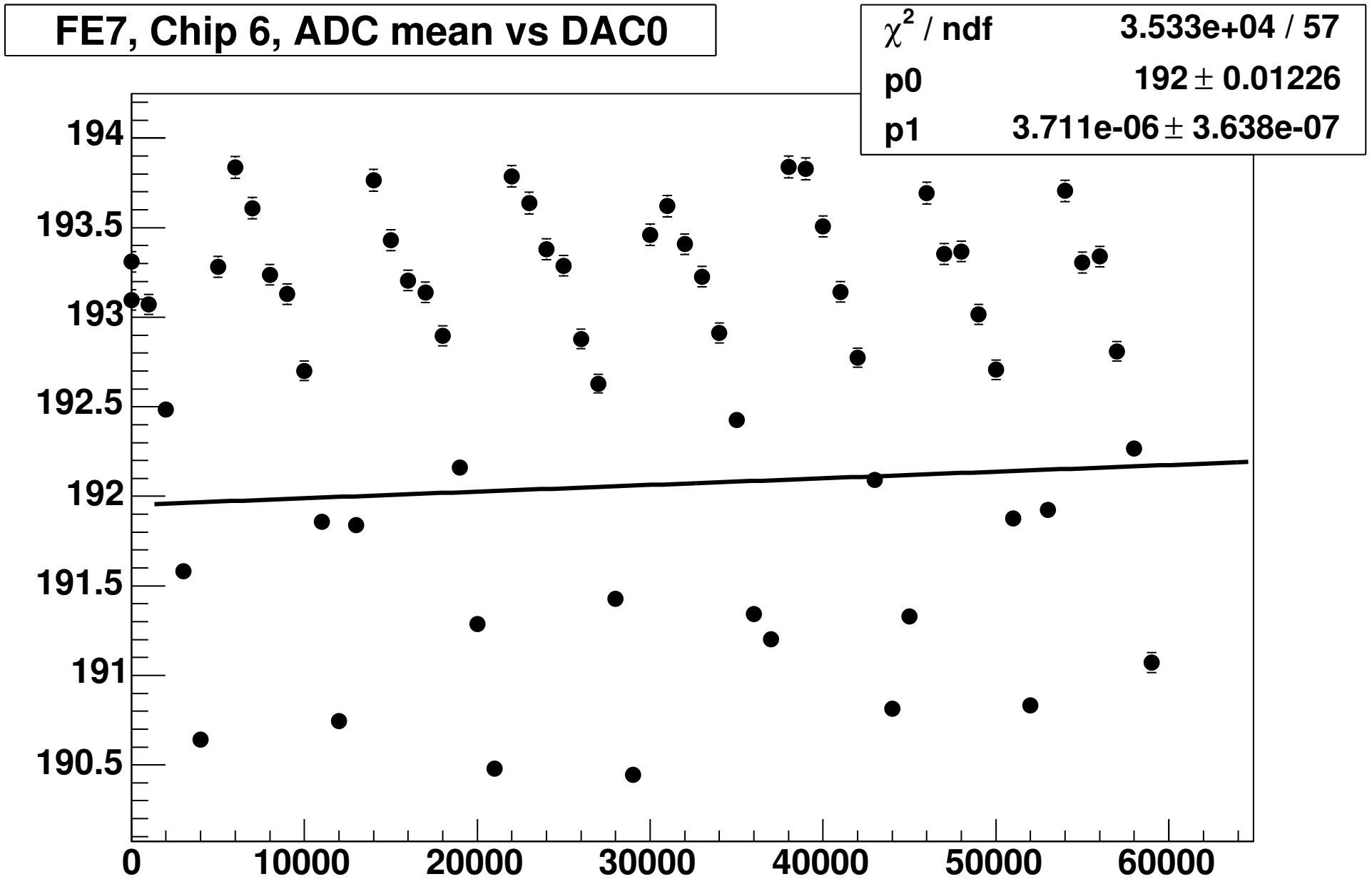

FE7, Chip 5, ADC noise vs DAC0
220
200
180
160
140
120
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
60000

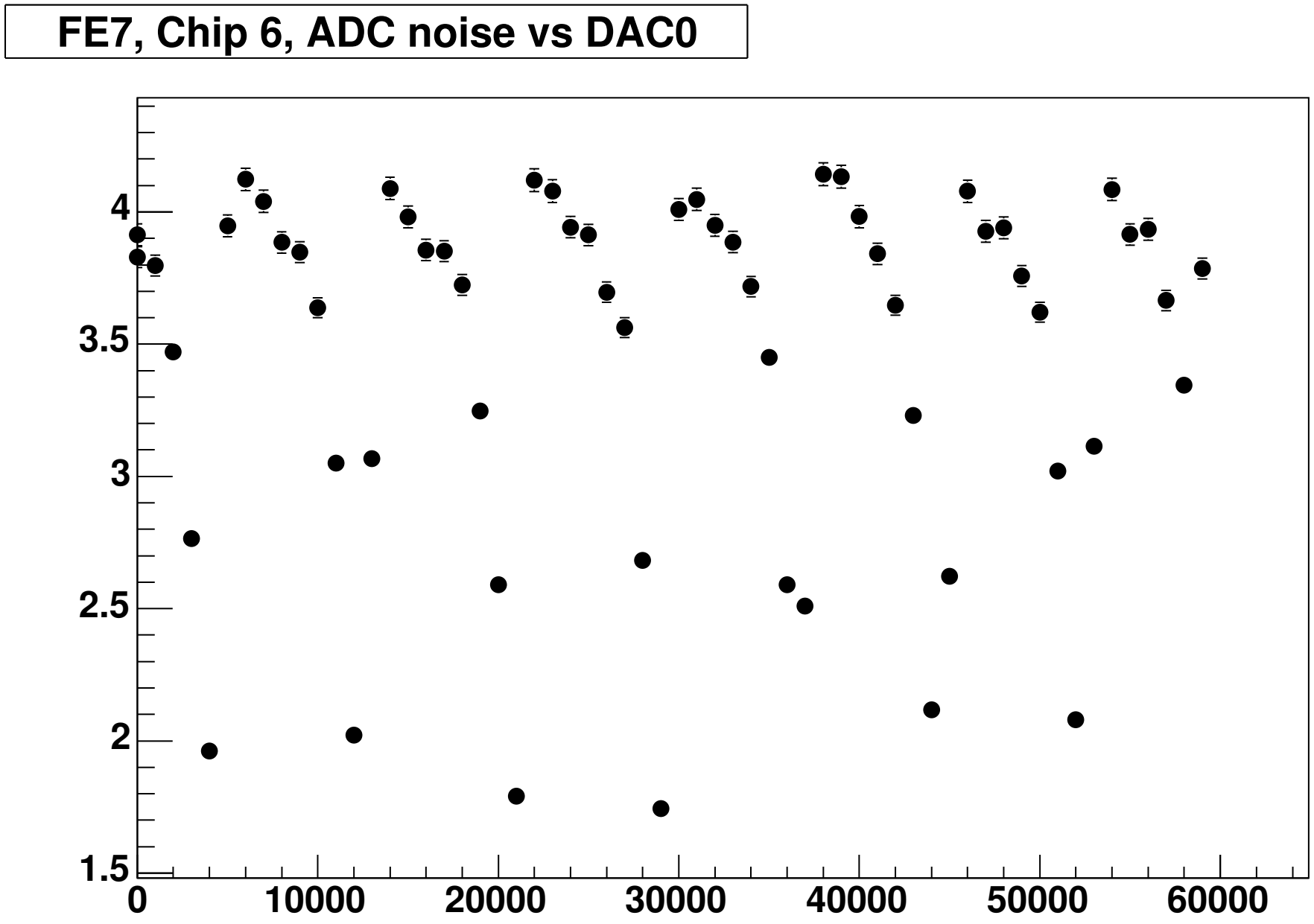

FE7, Chip 5, ADC residuals vs DAC0
2
1
0
-1
-2
-3
-4
-5
0
10000
20000
30000
40000
50000
60000

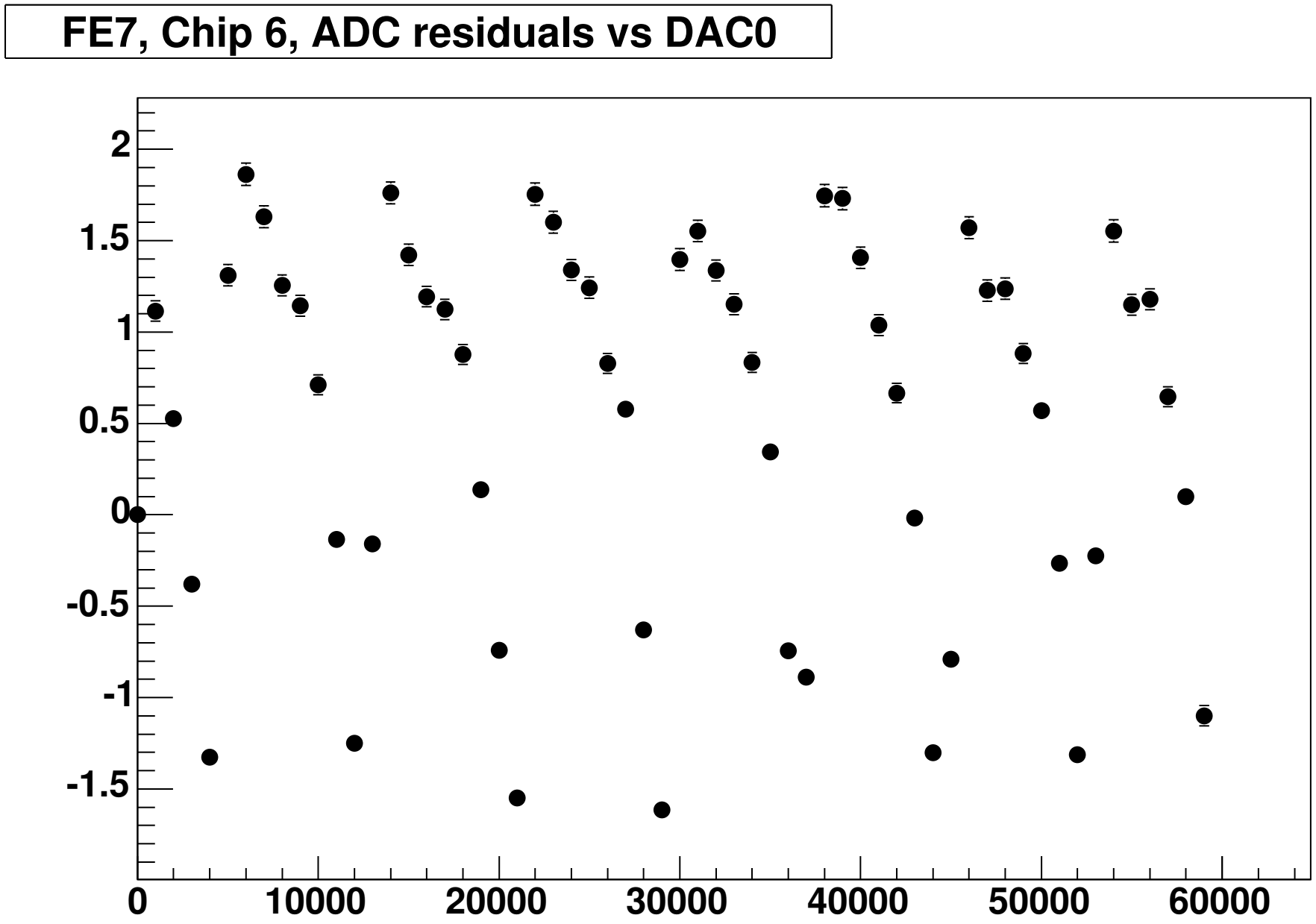

FE7, Chip 5, ADC mean vs DAC1
χ² / ndf 3.536e+05 / 57
p0 37.08 ± 0.003815
p1 1.073e-06 ± 1.103e-07
38.5
38
37.5
37
36.5
36
35.5
35
34.5
0
10000
20000
30000
40000
50000
60000

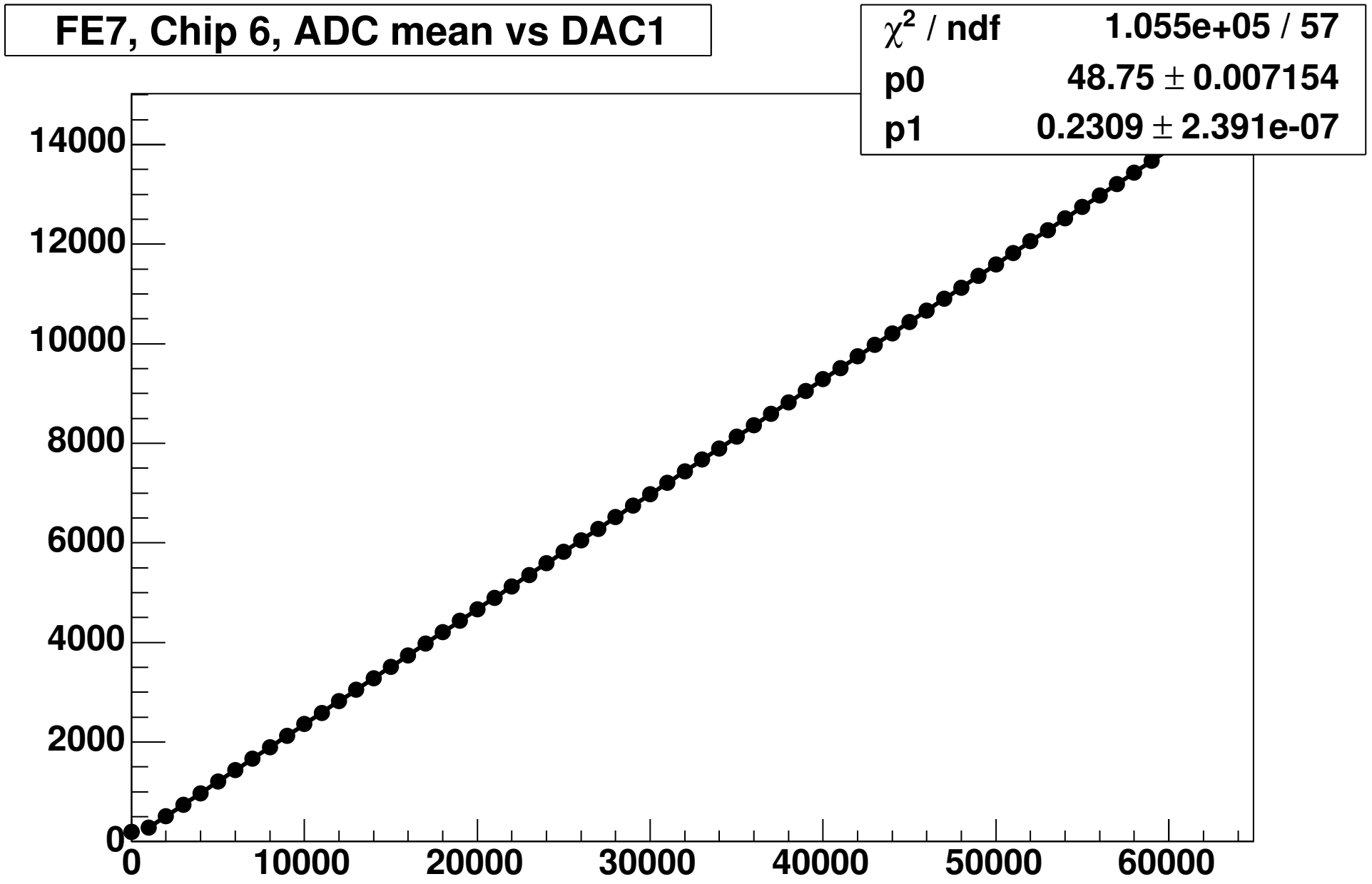

FE7, Chip 5, ADC noise vs DAC1
1.2
1.15
1.1
1.05
1
0.95
0.9
0
10000
20000
30000
40000
50000
60000

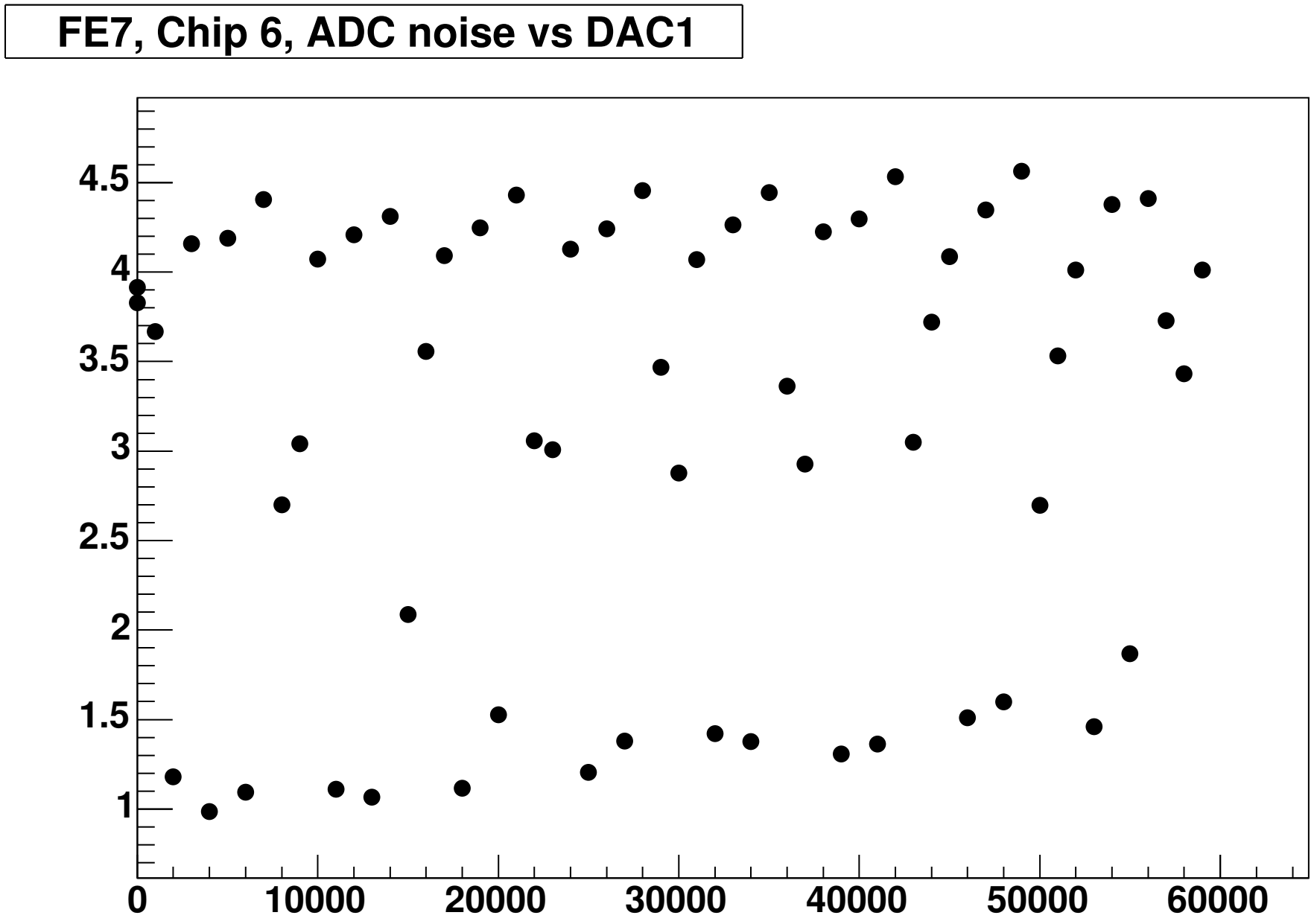

FE7, Chip 5, ADC residuals vs DAC1
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
-3
0
10000
20000
30000
40000
50000
60000


FE7, Chip 6, ADC mean vs DAC0
χ² / ndf 3.533e+04 / 57
p0 192 ± 0.01226
p1 3.711e-06 ± 3.638e-07
194
193.5
193
192.5
192
191.5
191
190.5
0
10000
20000
30000
40000
50000
60000

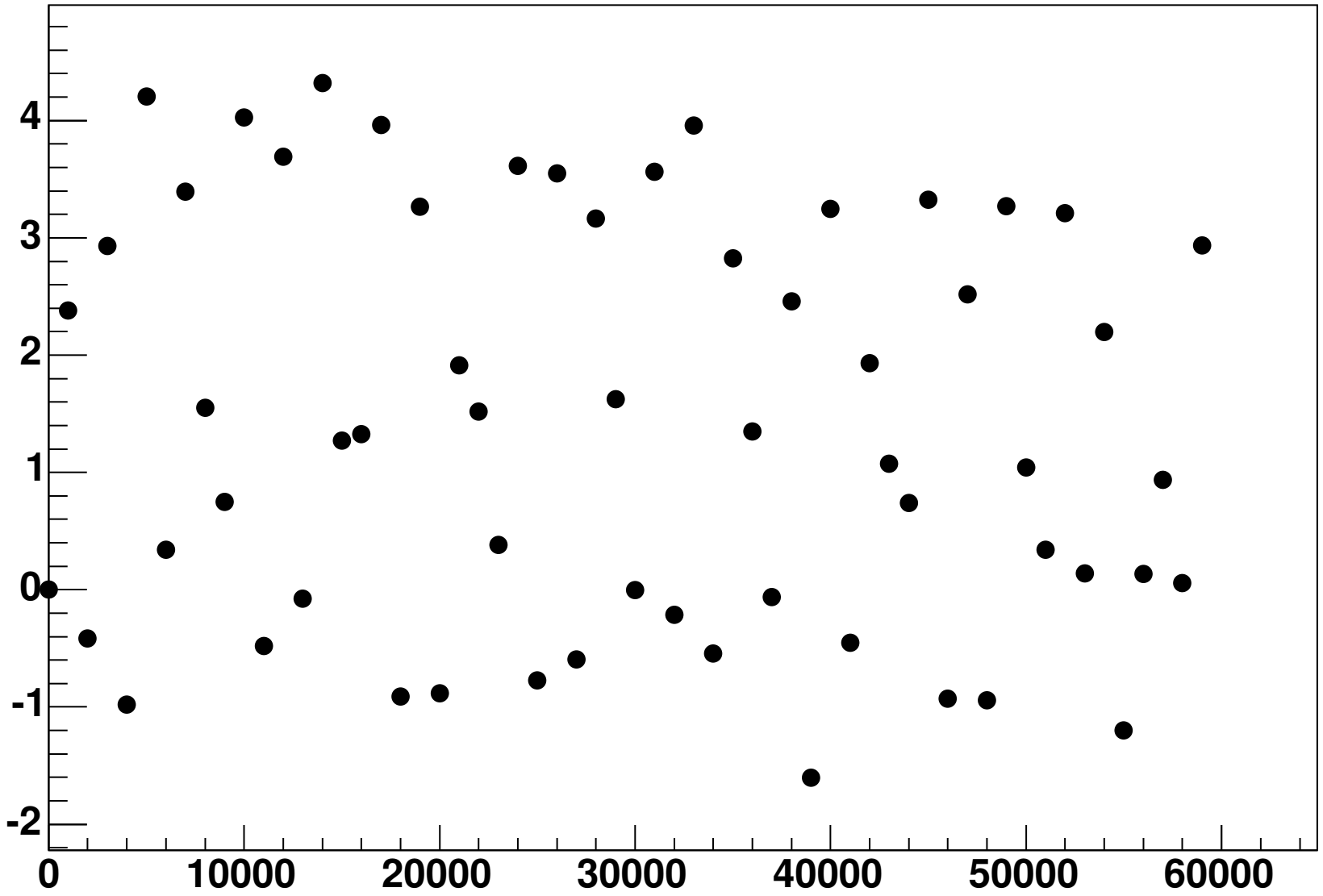

FE7, Chip 6, ADC noise vs DAC0
4
3.5
3
2.5
2
1.5
0
10000
20000
30000
40000
50000
60000

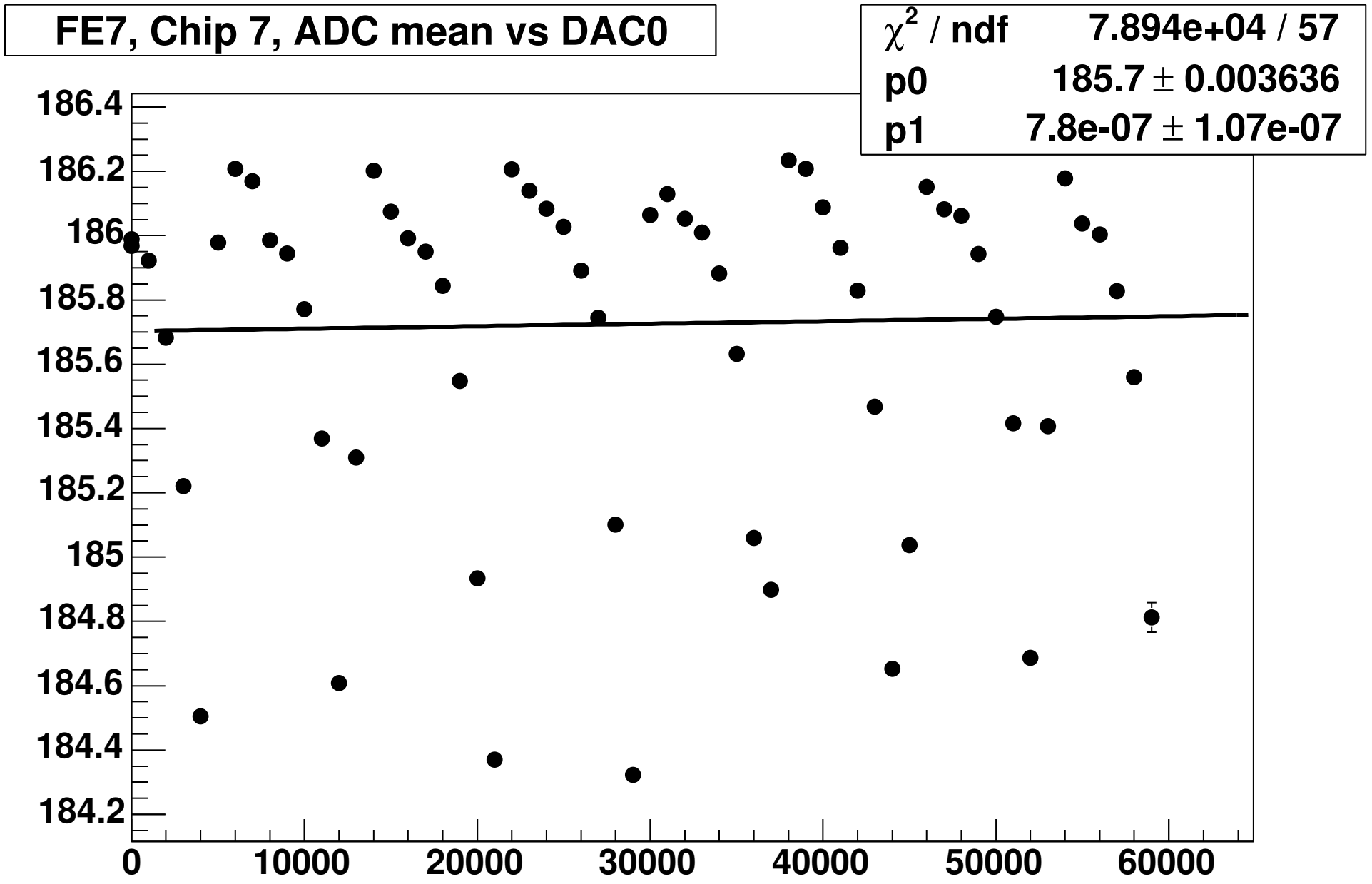

FE7, Chip 6, ADC residuals vs DAC0
2
1.5
1
0.5
0
-0.5
-1
-1.5
0
10000
20000
30000
40000
50000
60000

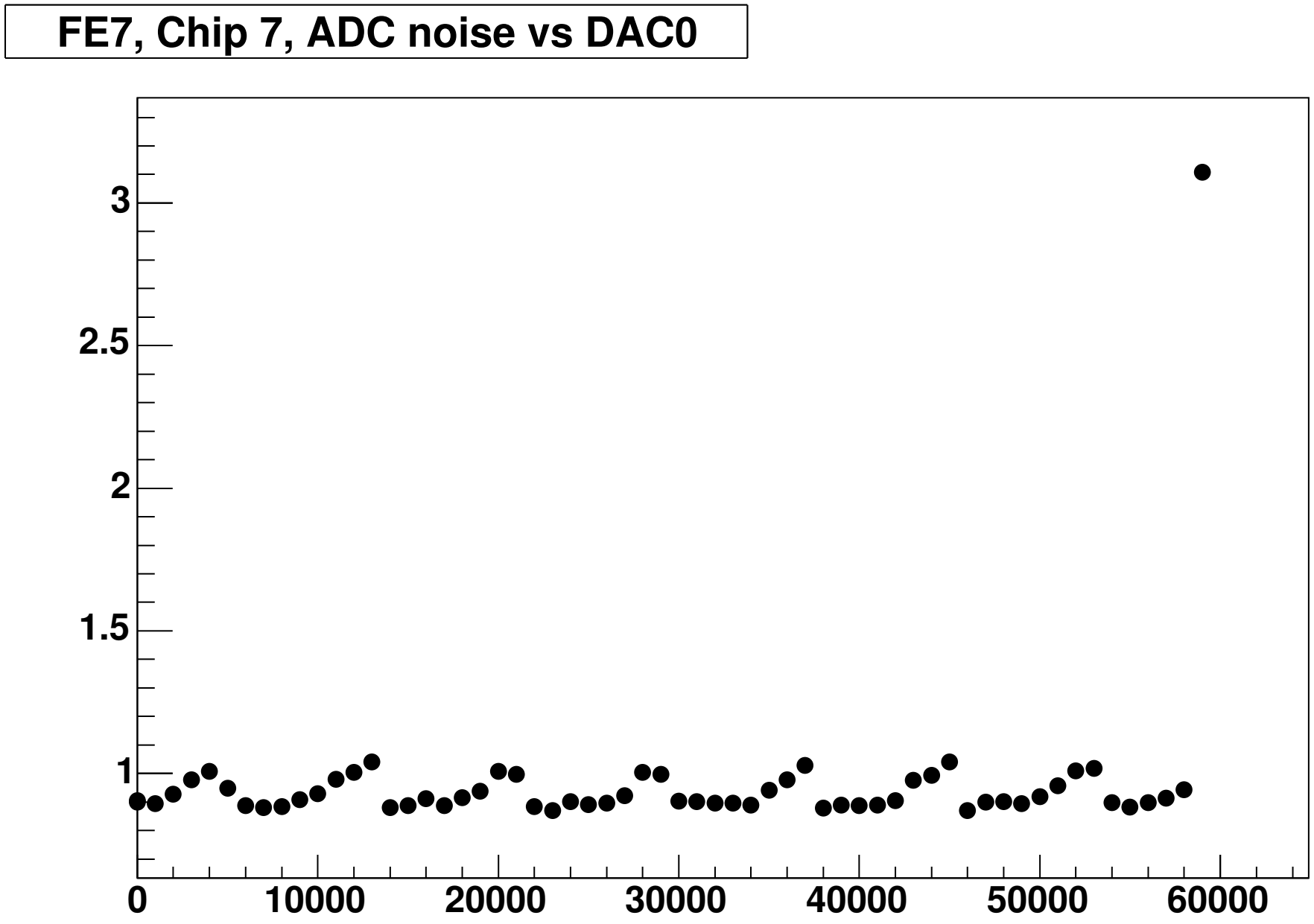

FE7, Chip 6, ADC mean vs DAC1
χ² / ndf 1.055e+05 / 57
p0 48.75 ± 0.007154
p1 0.2309 ± 2.391e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

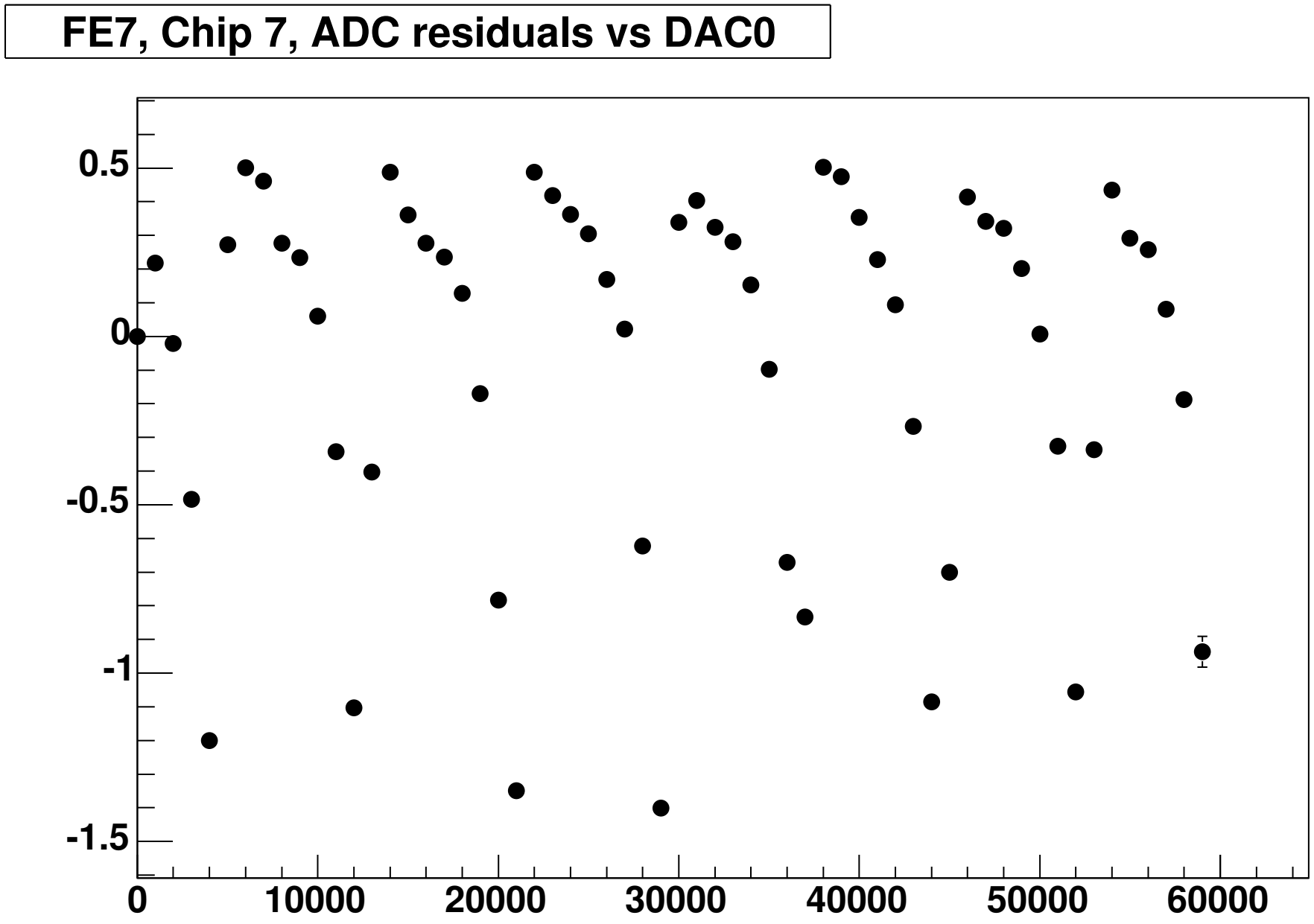

FE7, Chip 6, ADC noise vs DAC1
4.5
4
3.5
3
2.5
2
1.5
1
0
10000
20000
30000
40000
50000
60000

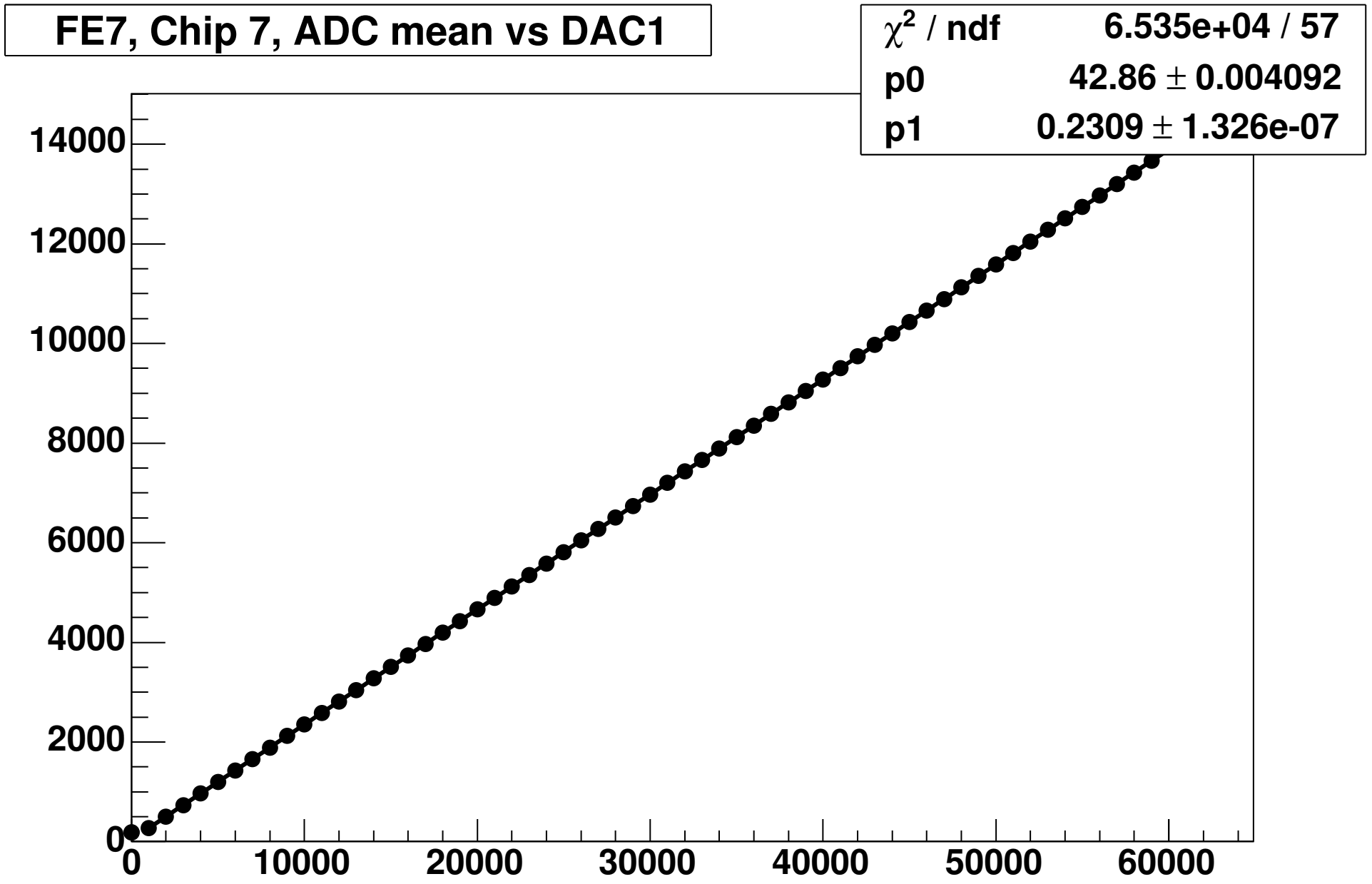
FE7, Chip 6, ADC residuals vs DAC1

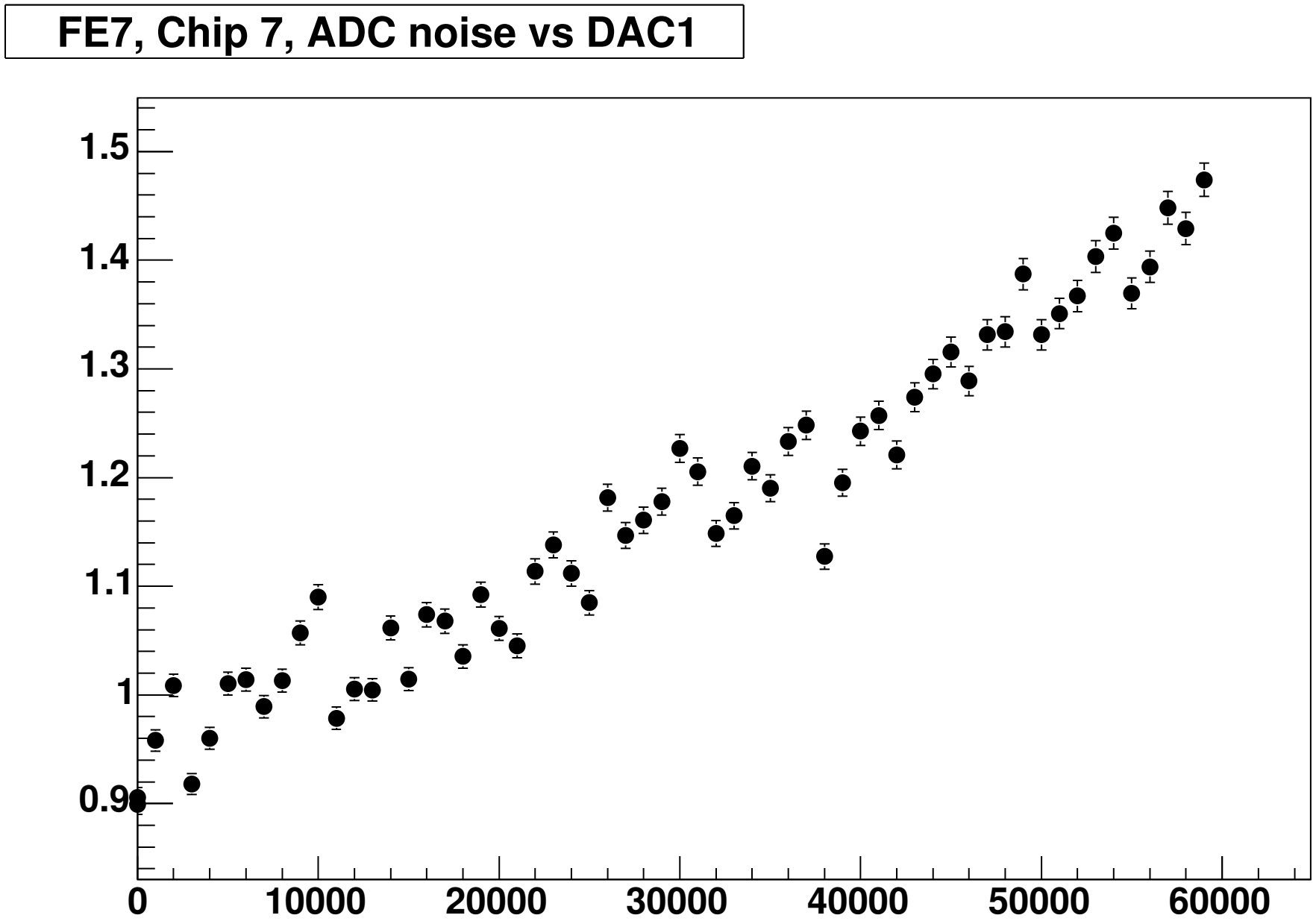


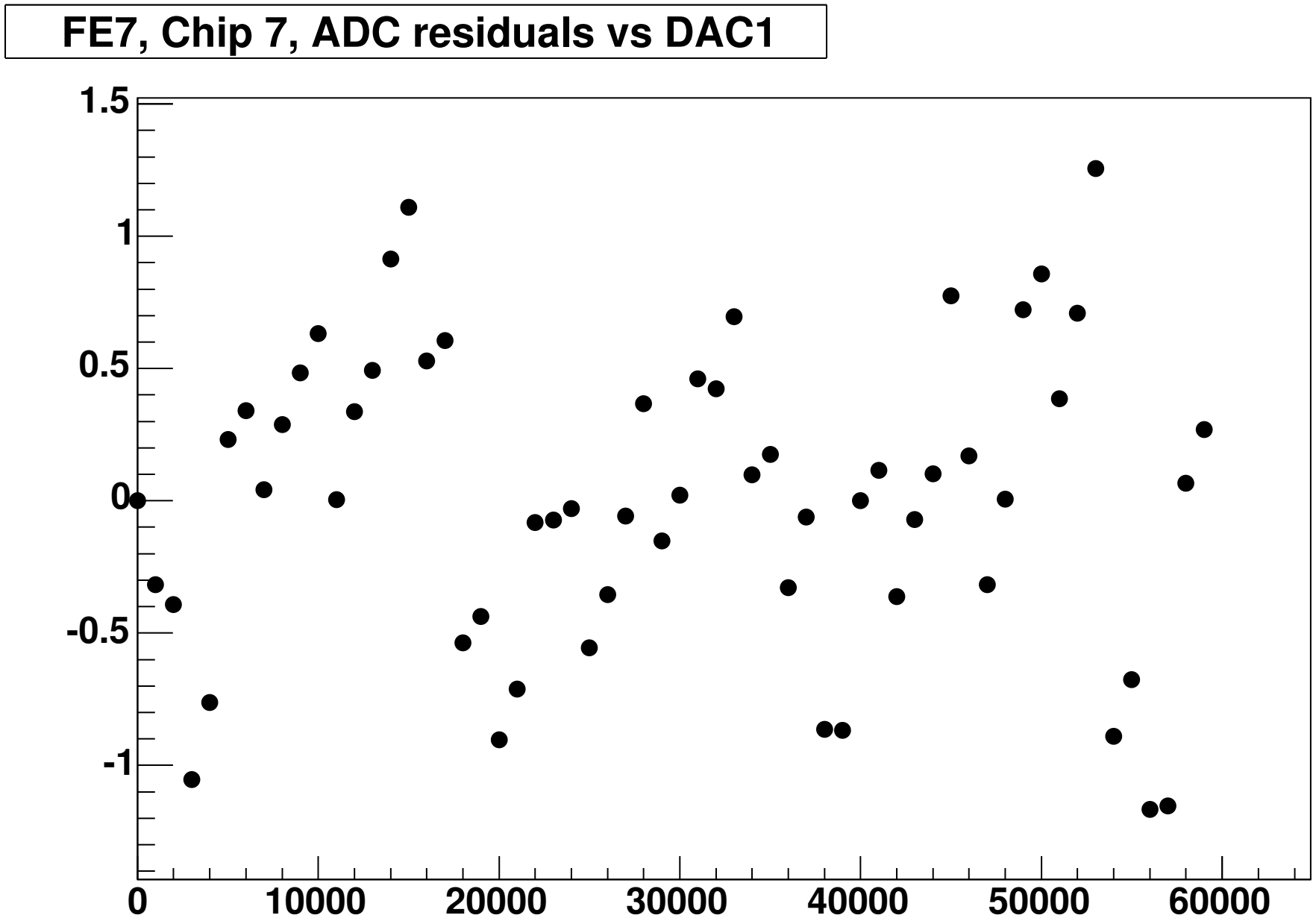

FE7, Chip 7, ADC mean vs DAC0
χ² / ndf 7.894e+04 / 57
p0 185.7 ± 0.003636
p1 7.8e-07 ± 1.07e-07
186.4
186.2
186
185.8
185.6
185.4
185.2
185
184.8
184.6
184.4
184.2
0
10000
20000
30000
40000
50000
60000

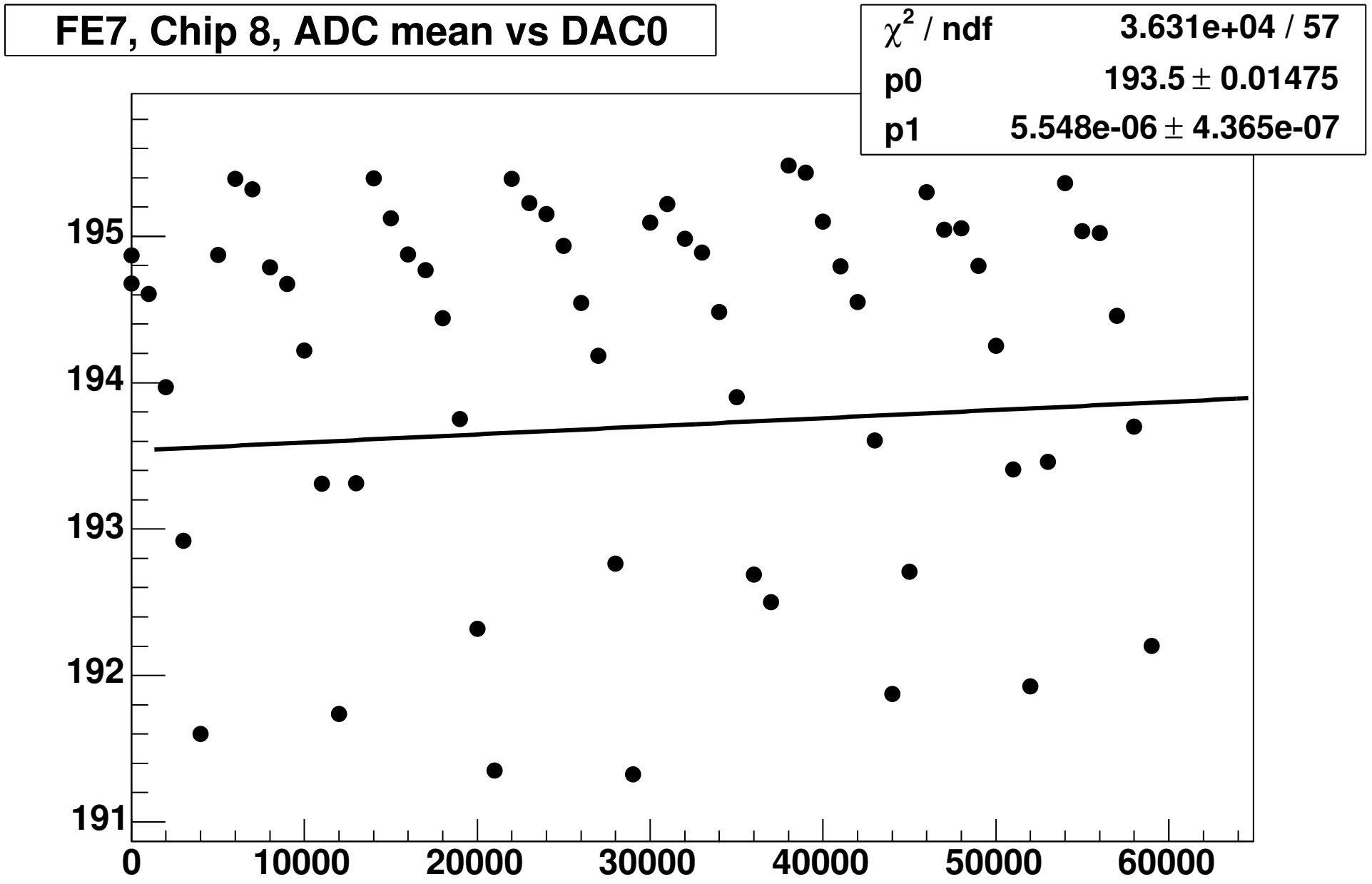

FE7, Chip 7, ADC noise vs DAC0
3
2.5
2
1.5
1
0
10000
20000
30000
40000
50000
60000

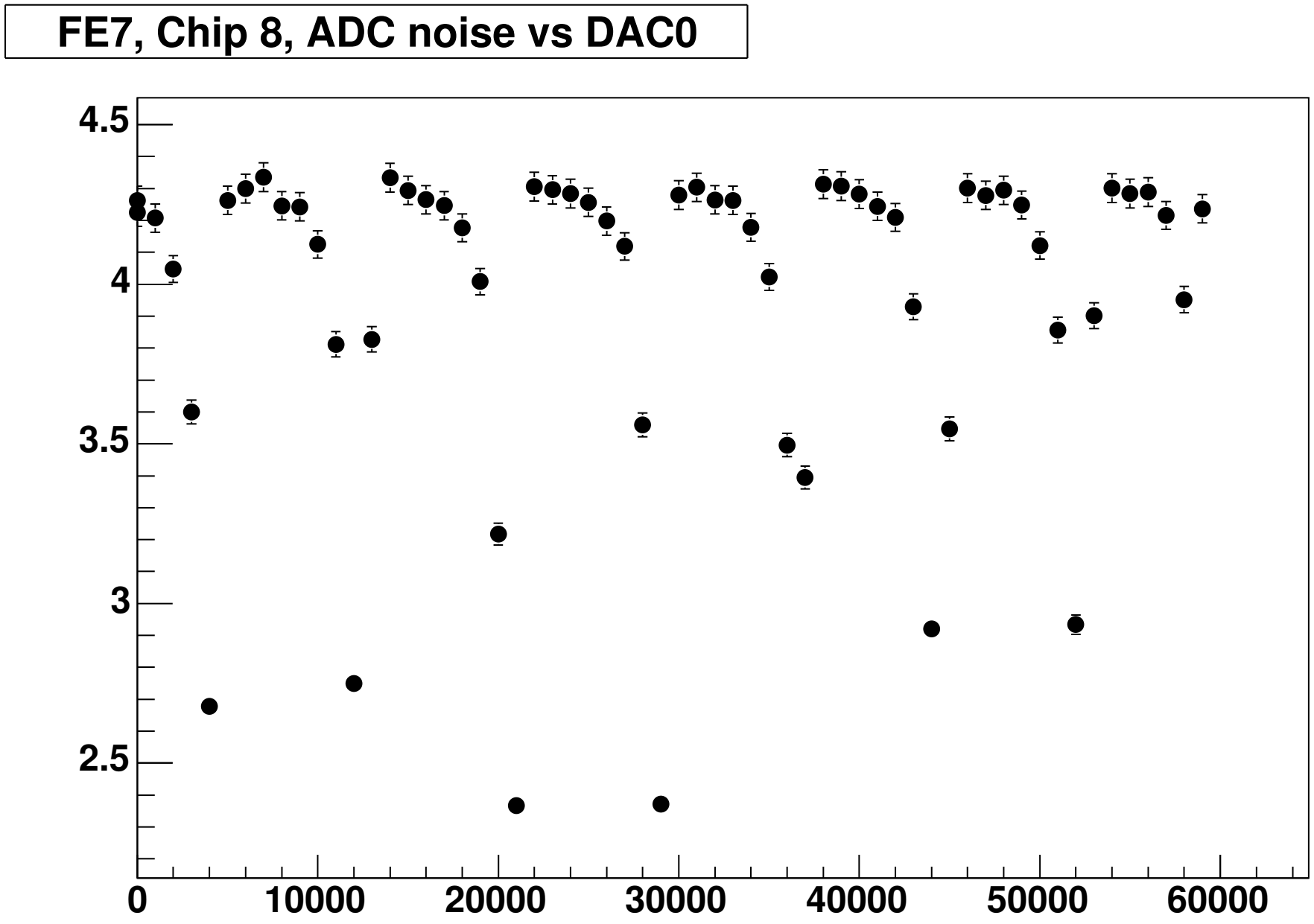

FE7, Chip 7, ADC residuals vs DAC0
0.5
0
-0.5
-1
-1.5
0
10000
20000
30000
40000
50000
60000

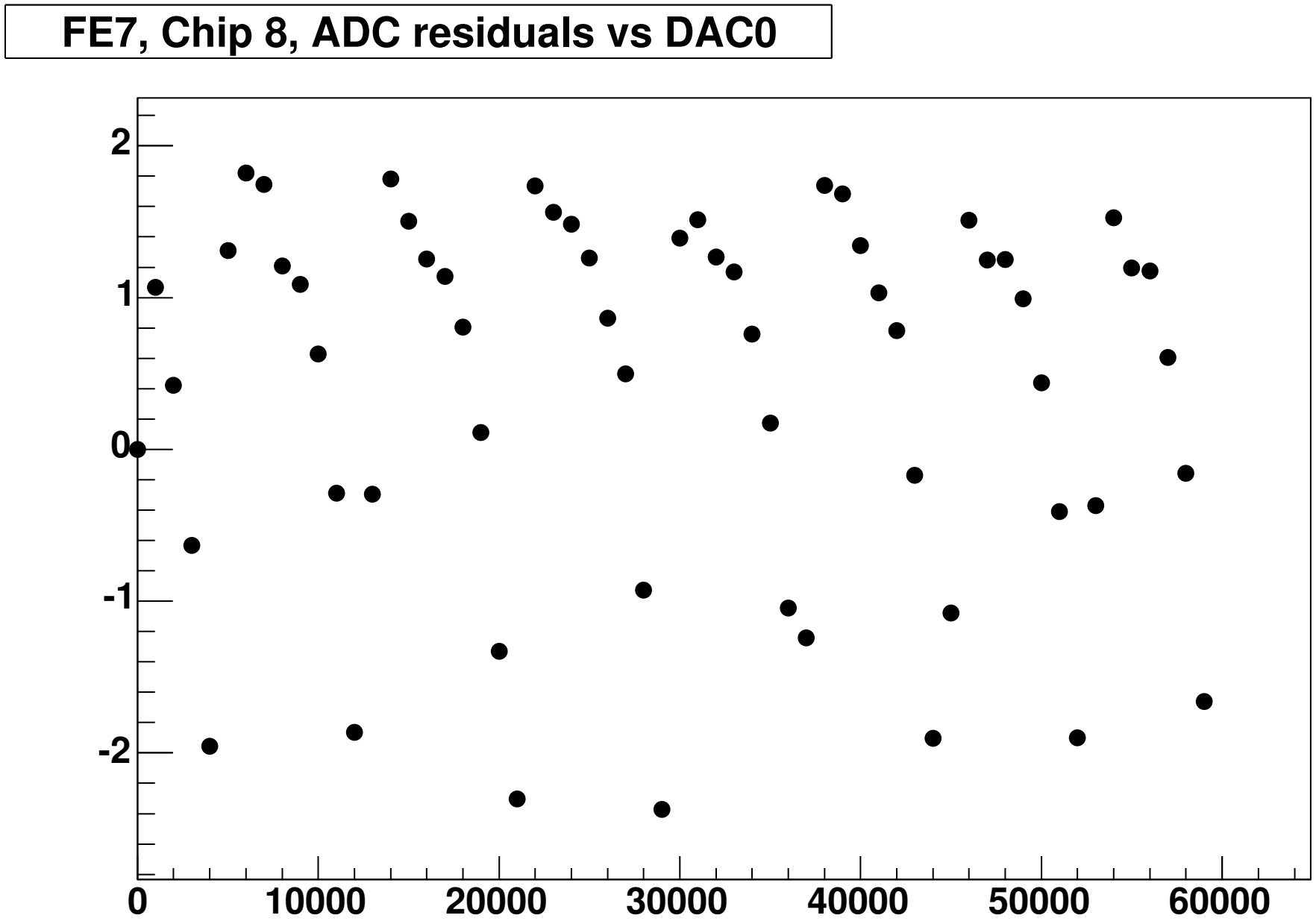

FE7, Chip 7, ADC mean vs DAC1
χ² / ndf 6.535e+04 / 57
p0 42.86 ± 0.004092
p1 0.2309 ± 1.326e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

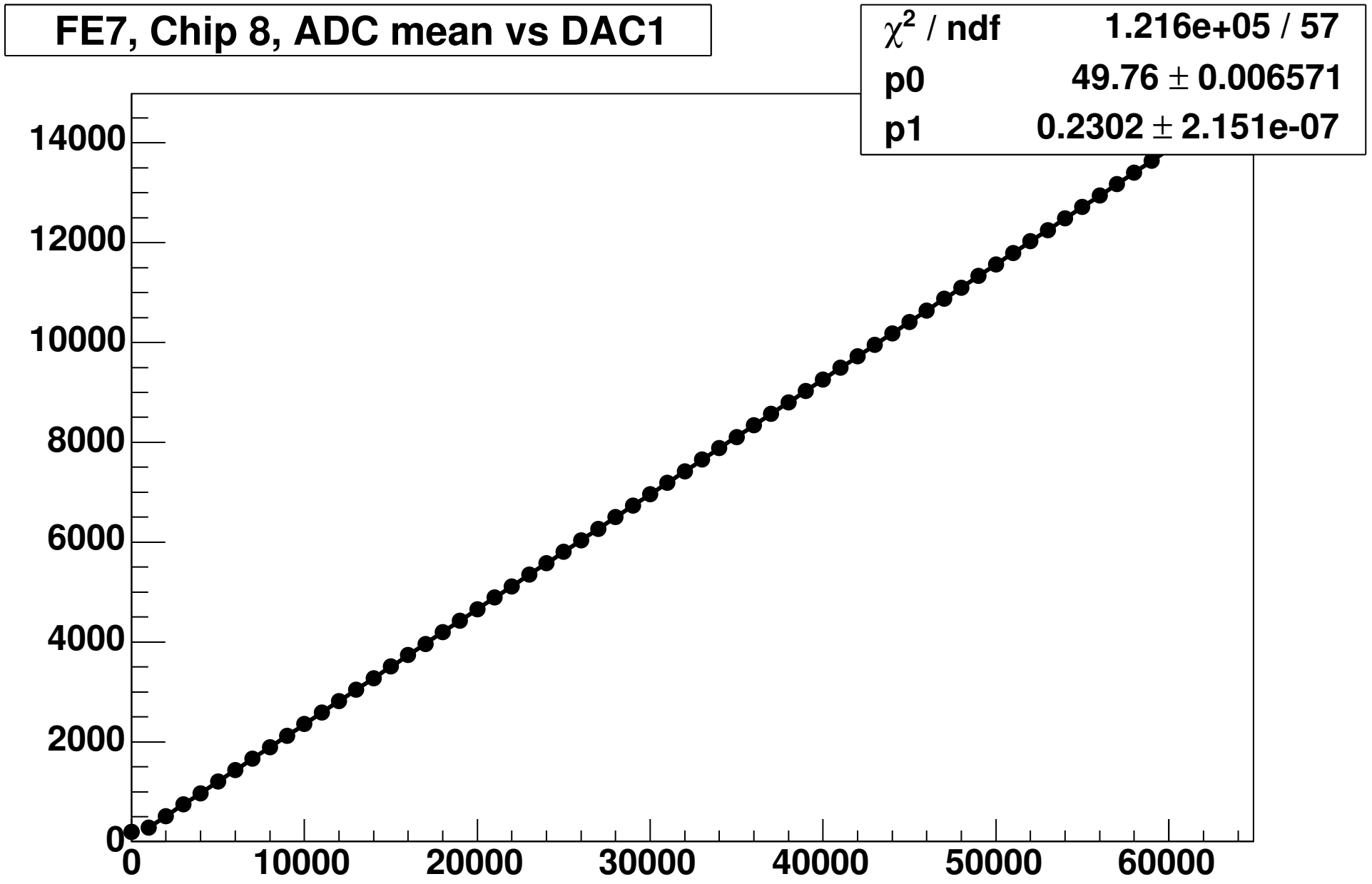

FE7, Chip 7, ADC noise vs DAC1
1.5
1.4
1.3
1.2
1.1
1
0.9
0
10000
20000
30000
40000
50000
60000

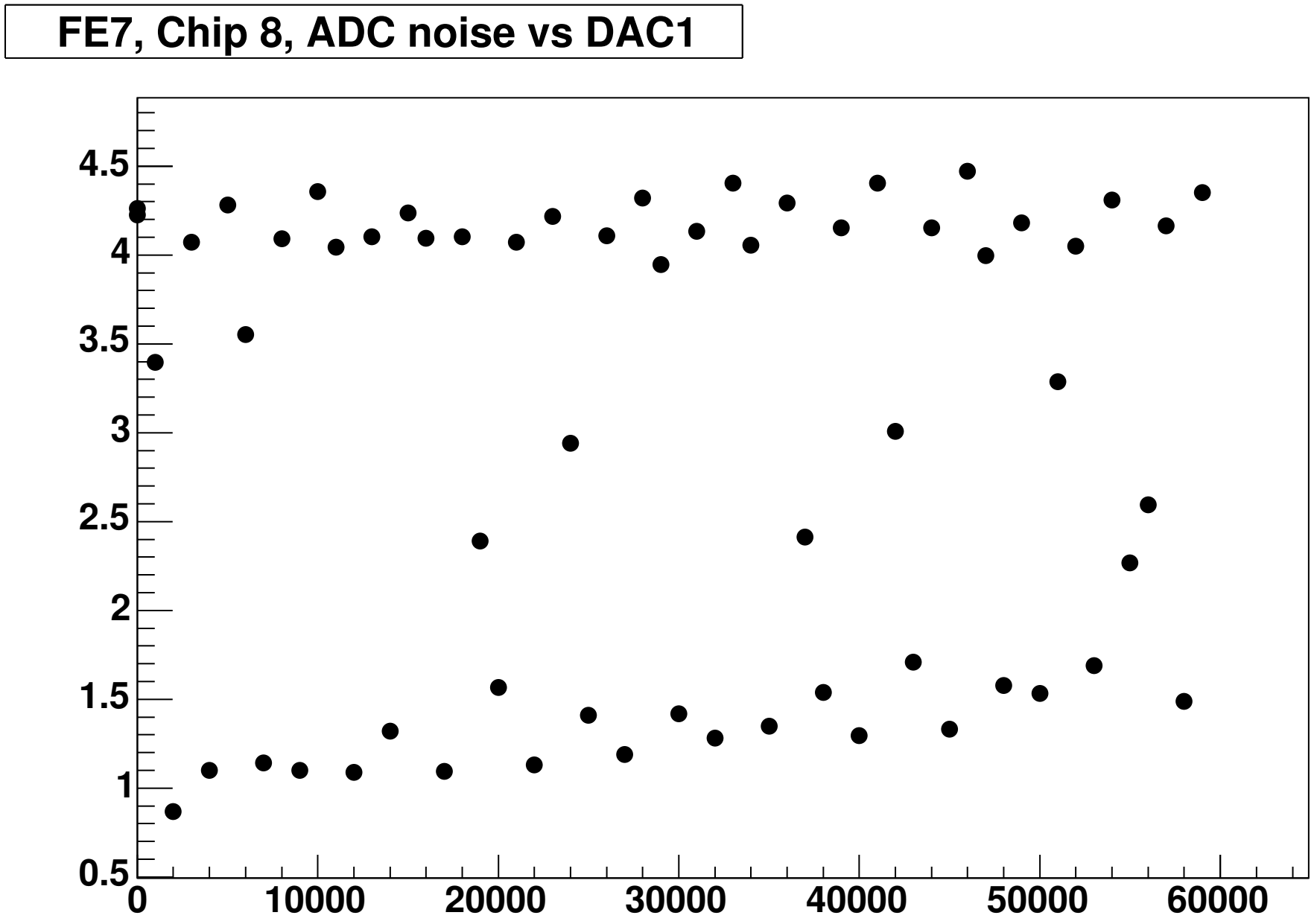

FE7, Chip 7, ADC residuals vs DAC1
1.5
1
0.5
0
-0.5
-1
0
10000
20000
30000
40000
50000
60000

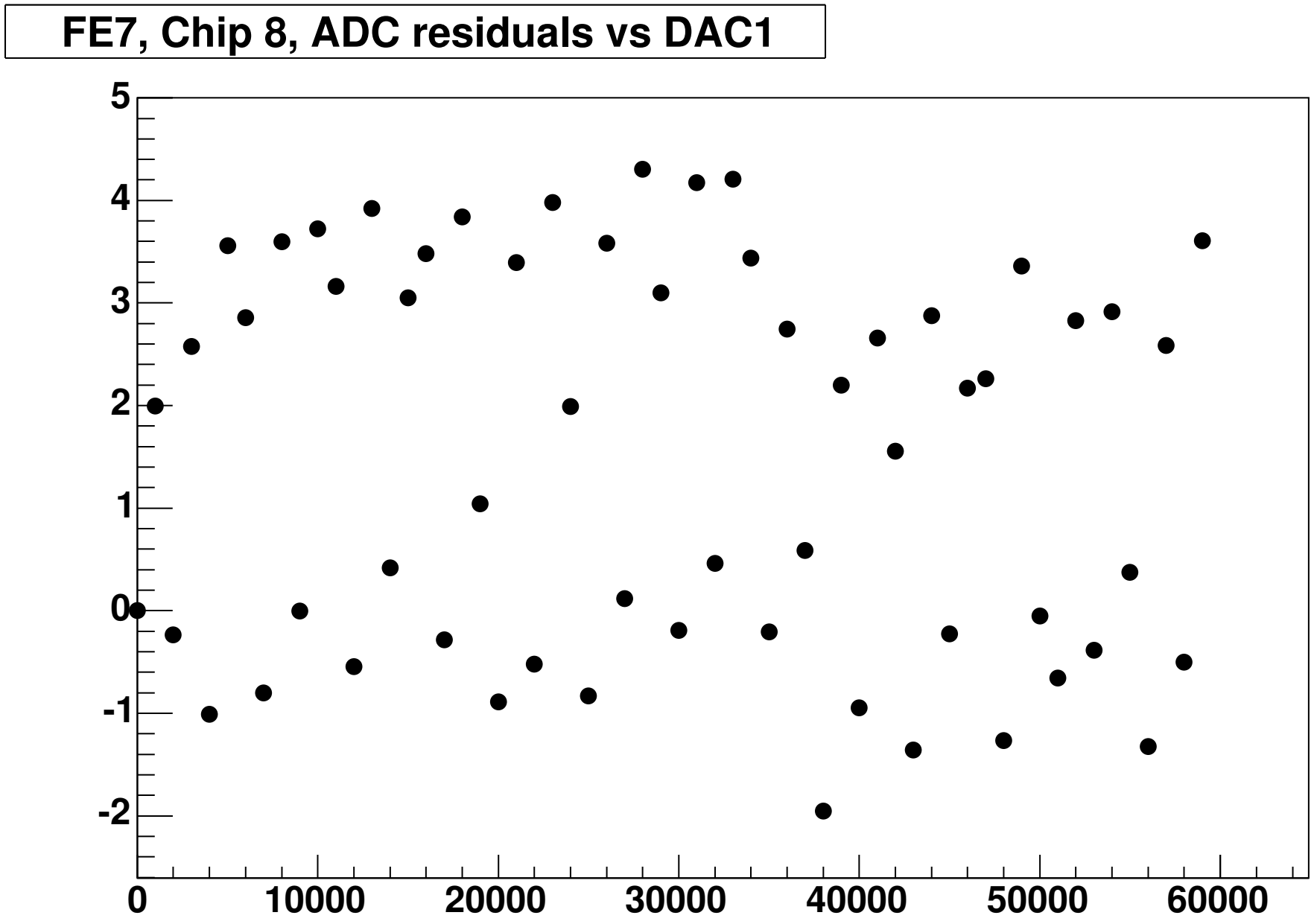

FE7, Chip 8, ADC mean vs DAC0
χ² / ndf 3.631e+04 / 57
p0 193.5 ± 0.01475
p1 5.548e-06 ± 4.365e-07
195
194
193
192
191
0
10000
20000
30000
40000
50000
60000

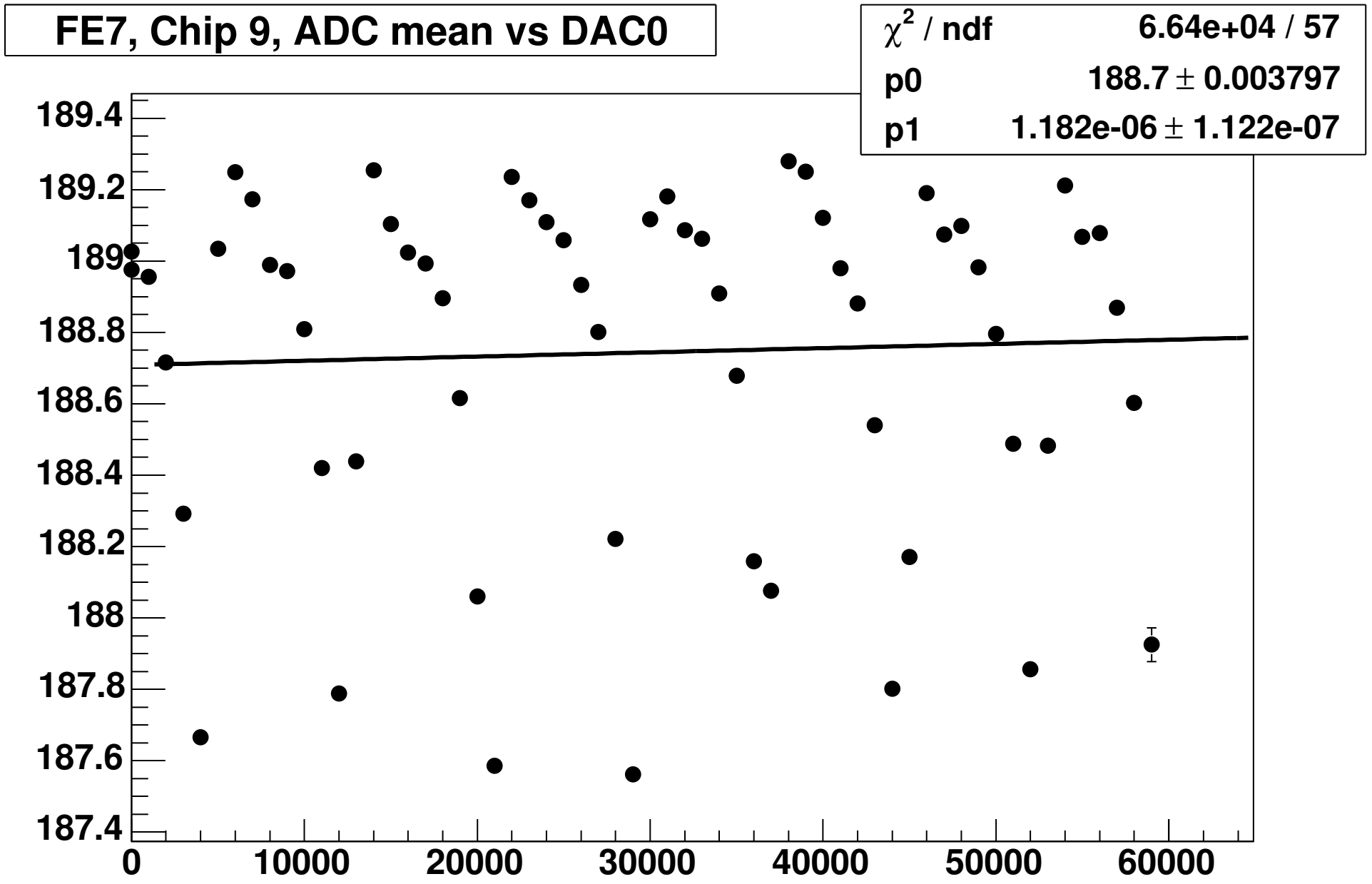

FE7, Chip 8, ADC noise vs DAC0
4.5
4
3.5
3
2.5
0
10000
20000
30000
40000
50000
60000

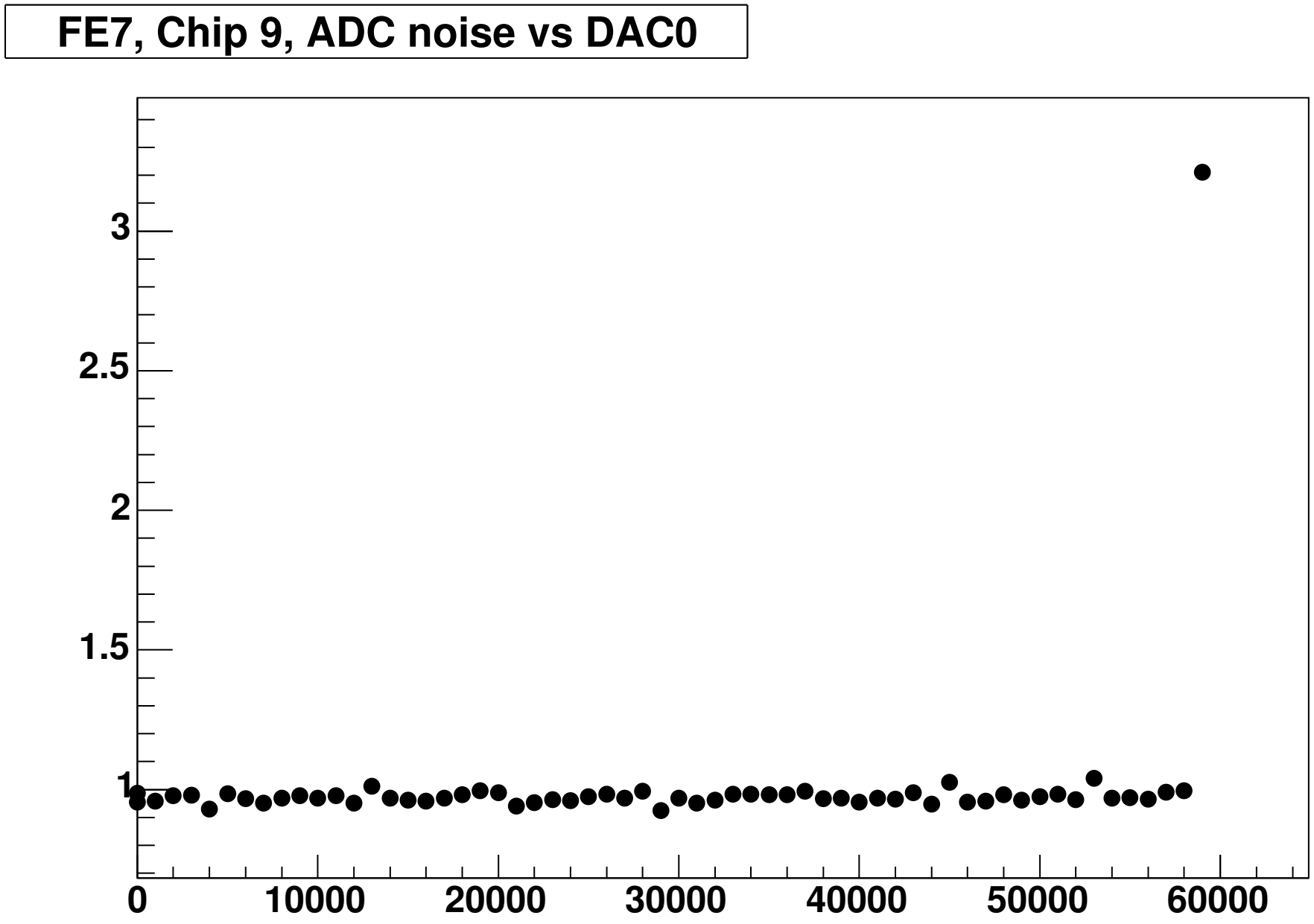

FE7, Chip 8, ADC residuals vs DAC0
2
1
0
-1
-2
0
10000
20000
30000
40000
50000
60000

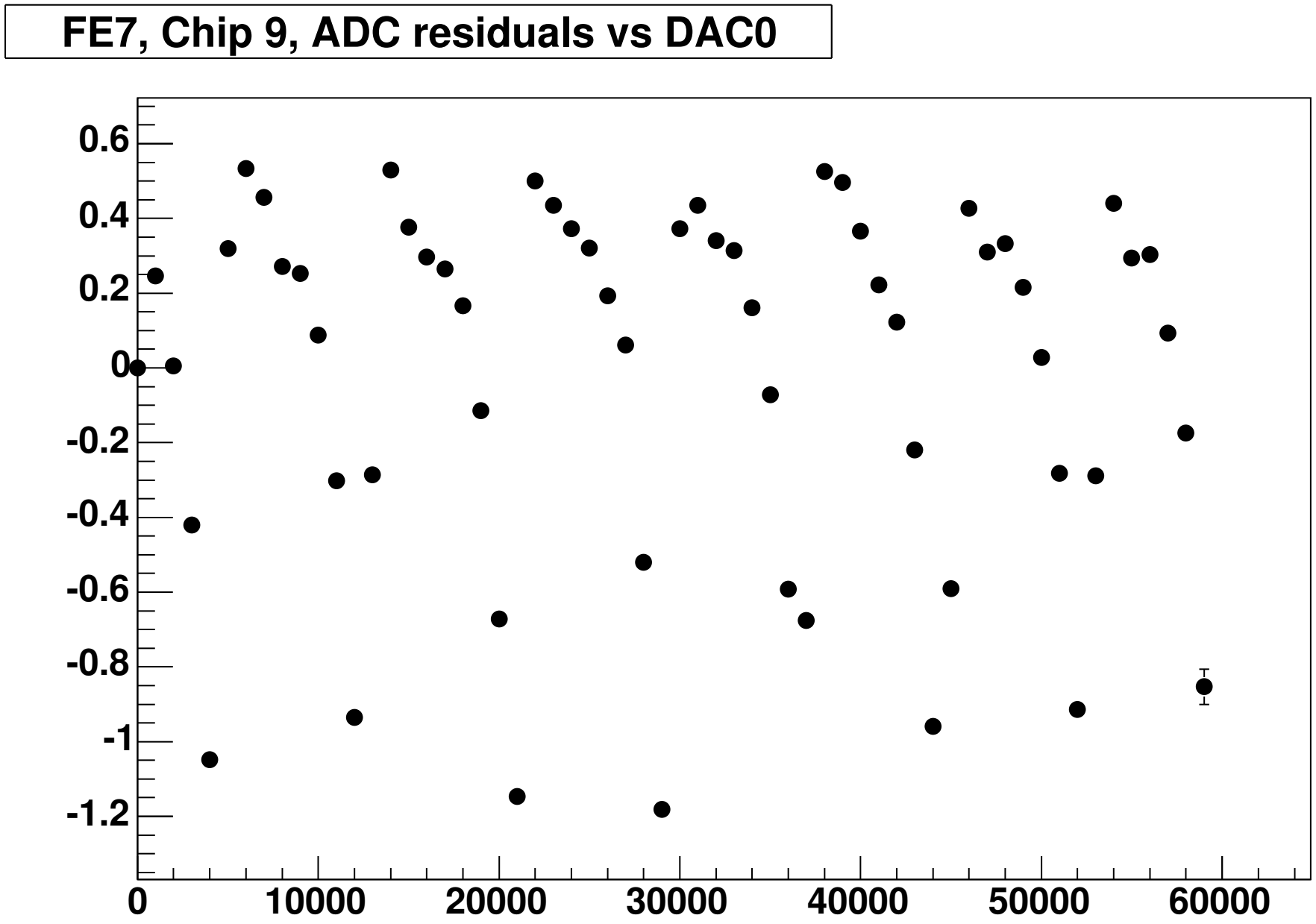

FE7, Chip 8, ADC mean vs DAC1
χ² / ndf 1.216e+05 / 57
p0 49.76 ± 0.006571
p1 0.2302 ± 2.151e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

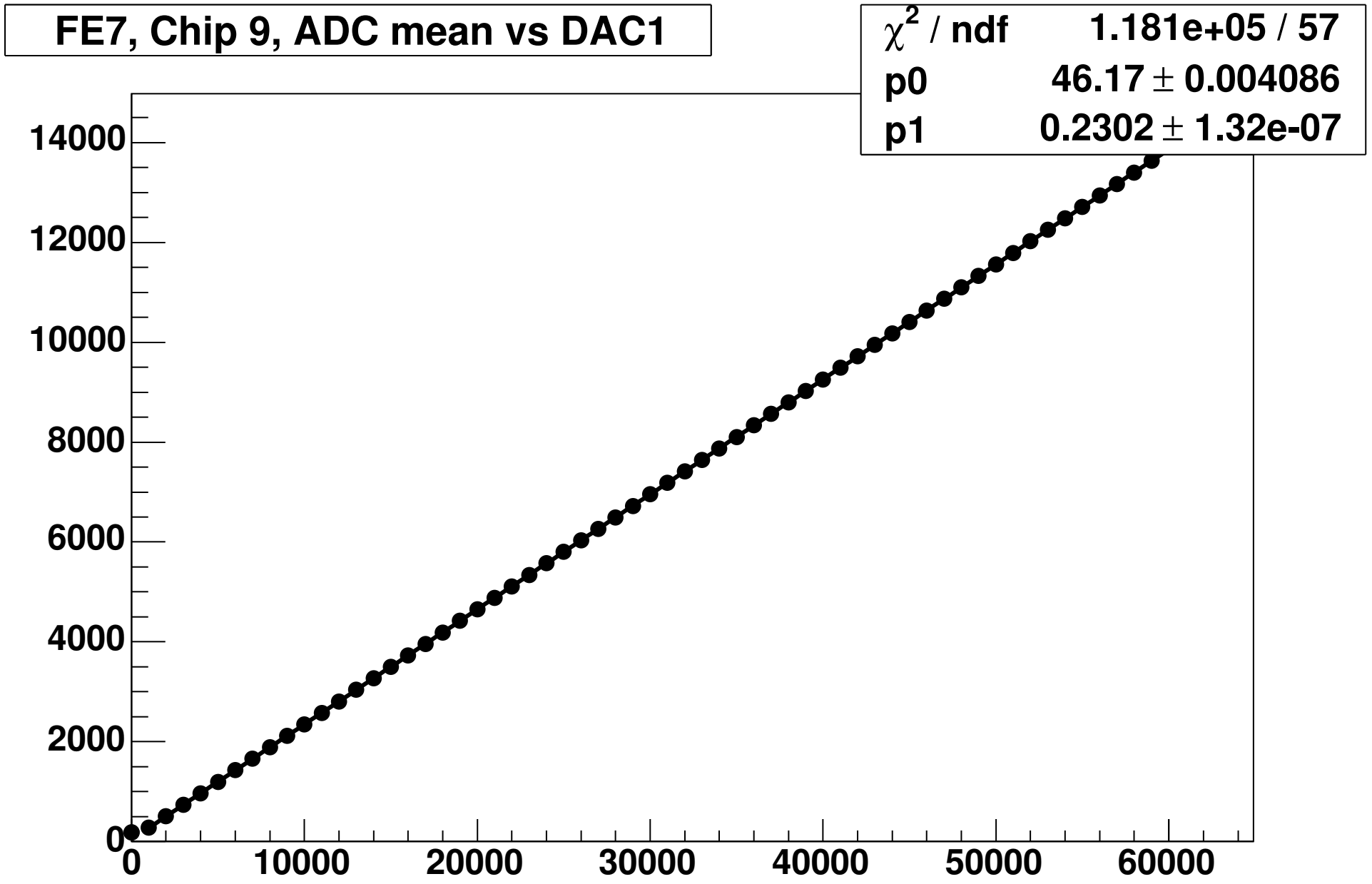

FE7, Chip 8, ADC noise vs DAC1
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
10000
20000
30000
40000
50000
60000

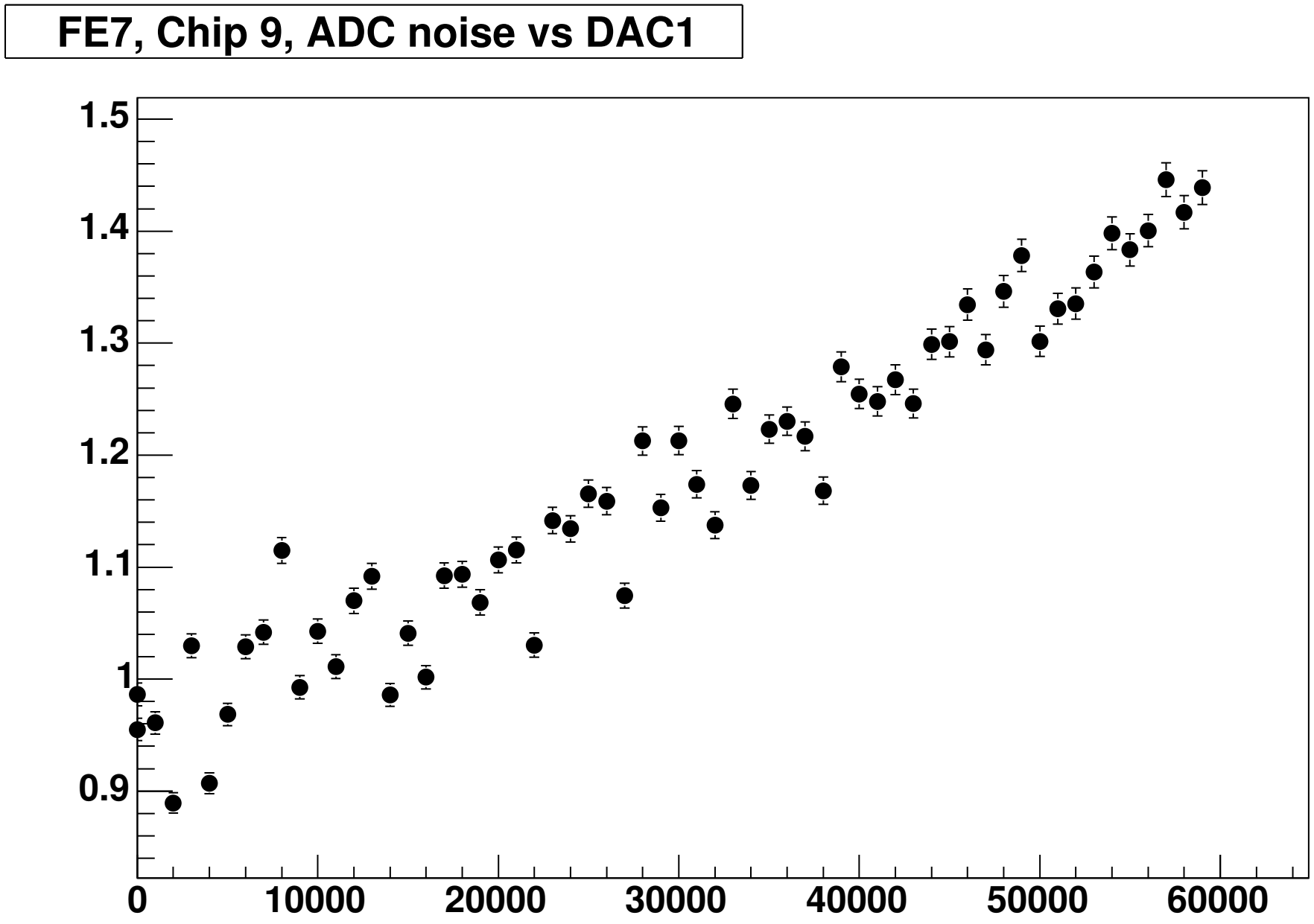

FE7, Chip 8, ADC residuals vs DAC1
5
4
3
2
1
0
-1
-2
0
10000
20000
30000
40000
50000
60000

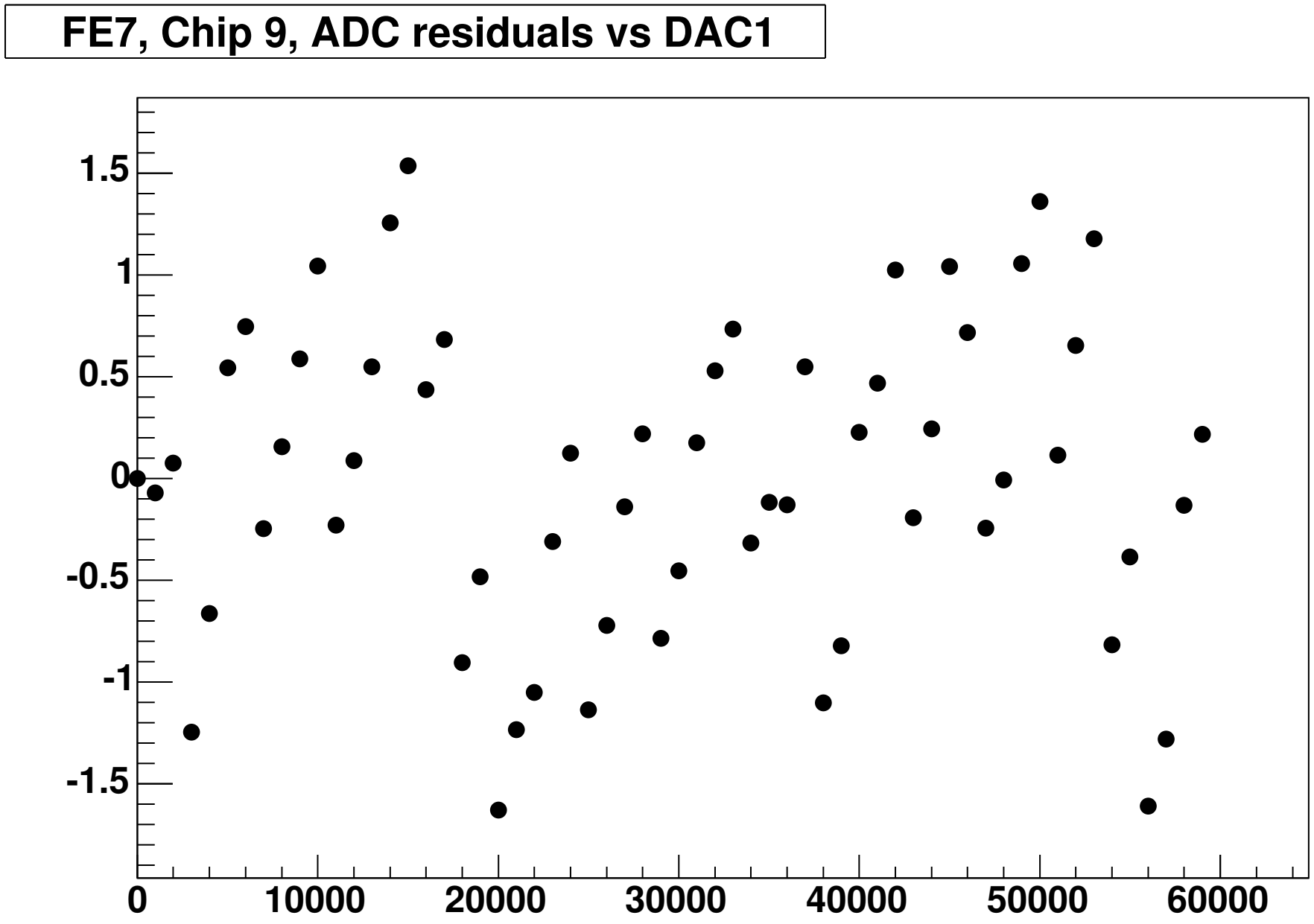

FE7, Chip 9, ADC mean vs DAC0
χ² / ndf 6.64e+04 / 57
p0 188.7 ± 0.003797
p1 1.182e-06 ± 1.122e-07
189.4
189.2
189
188.8
188.6
188.4
188.2
188
187.8
187.6
187.4
0
10000
20000
30000
40000
50000
60000

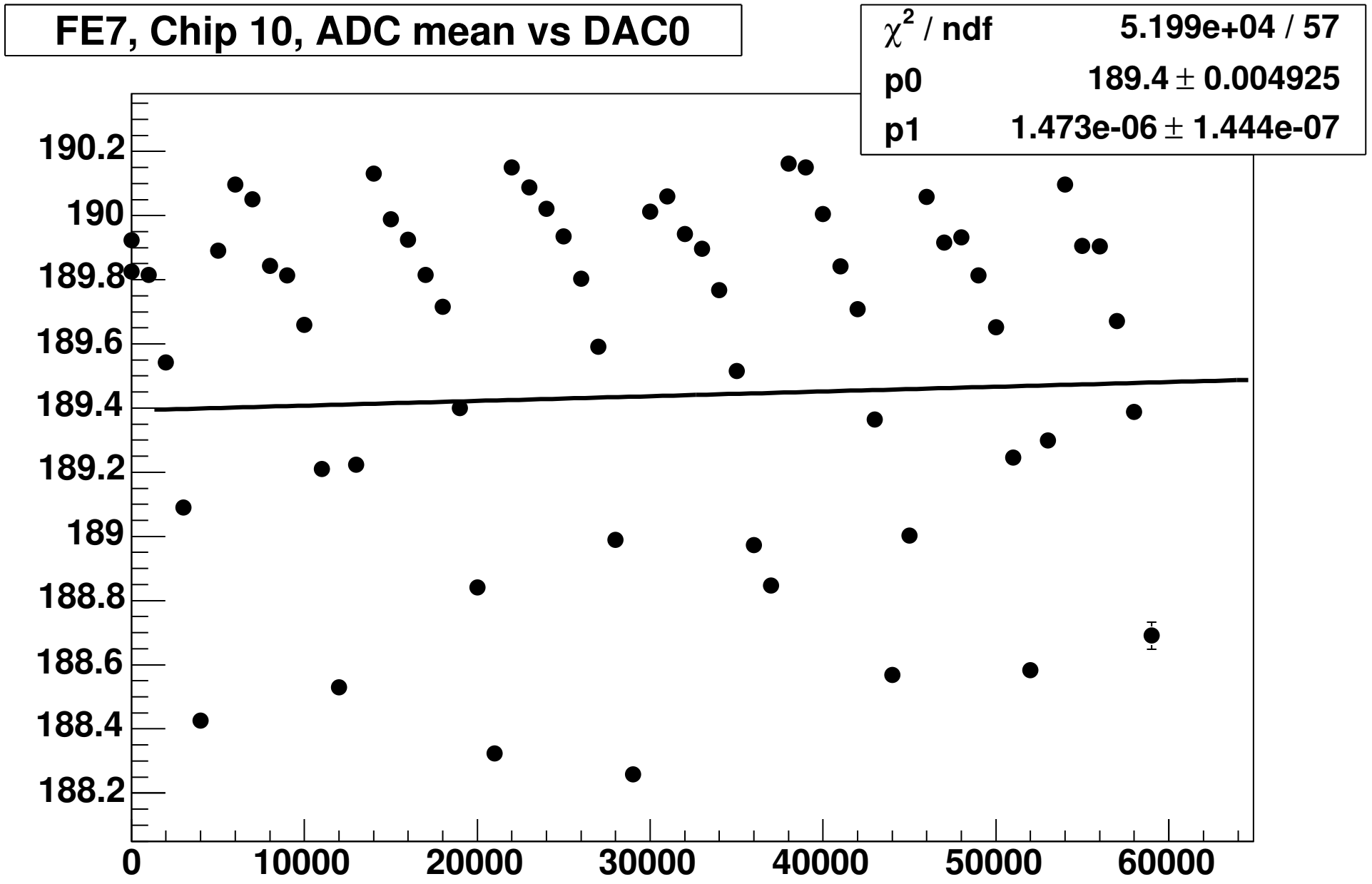

FE7, Chip 9, ADC noise vs DAC0
3
2.5
2
1.5
1
0
10000
20000
30000
40000
50000
60000

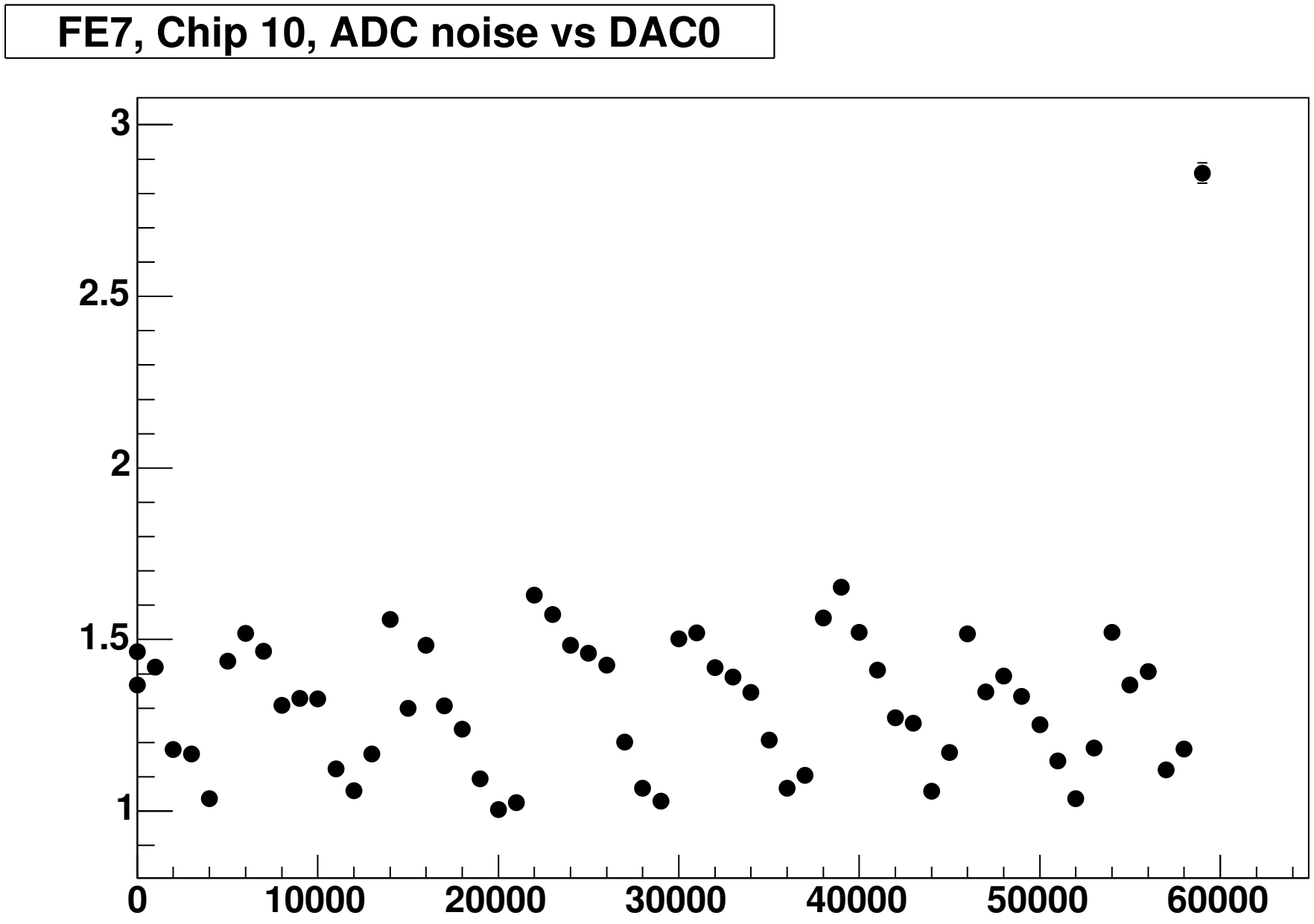

FE7, Chip 9, ADC residuals vs DAC0
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
0
10000
20000
30000
40000
50000
60000

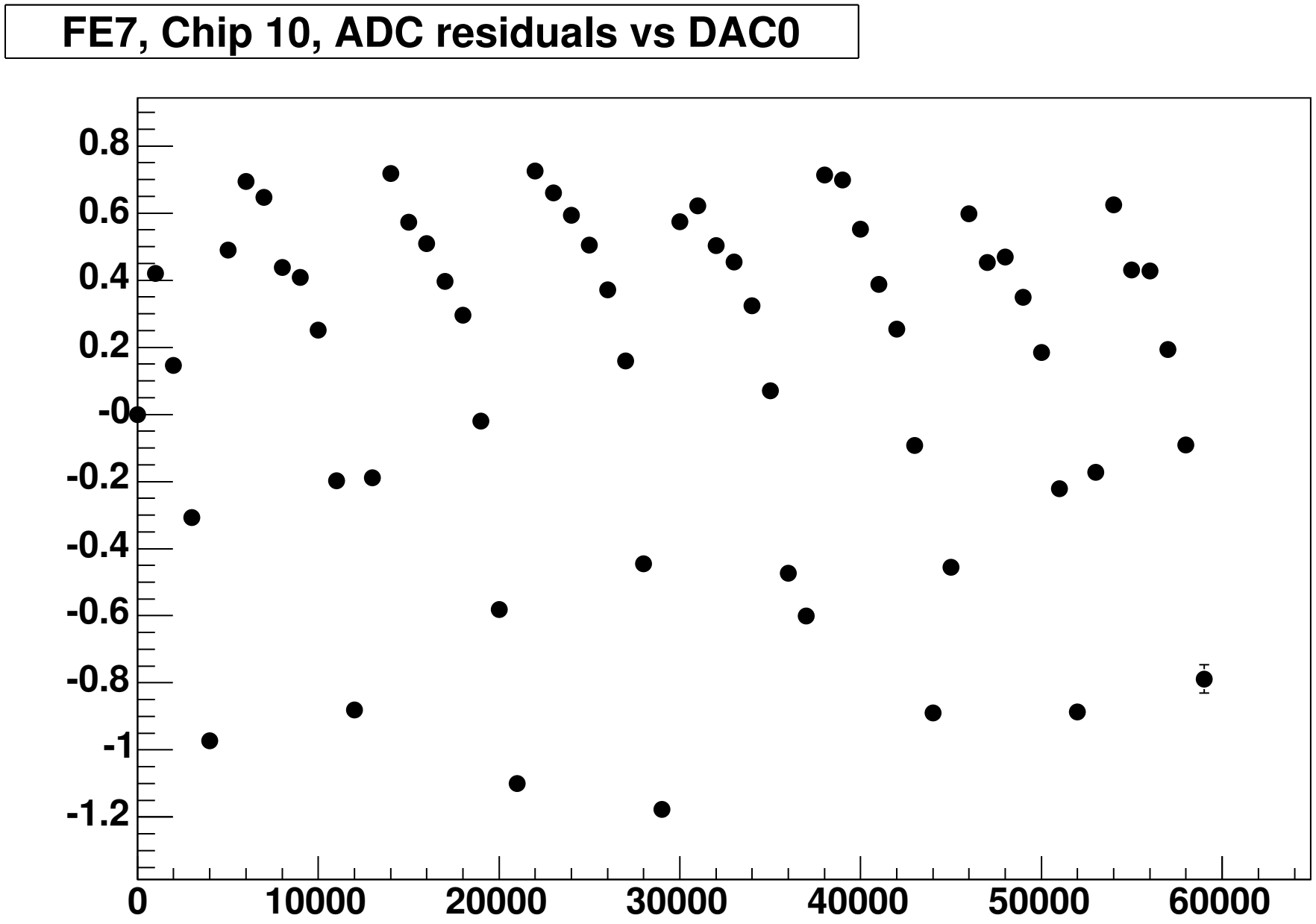

FE7, Chip 9, ADC mean vs DAC1
χ² / ndf 1.181e+05 / 57
p0 46.17 ± 0.004086
p1 0.2302 ± 1.32e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

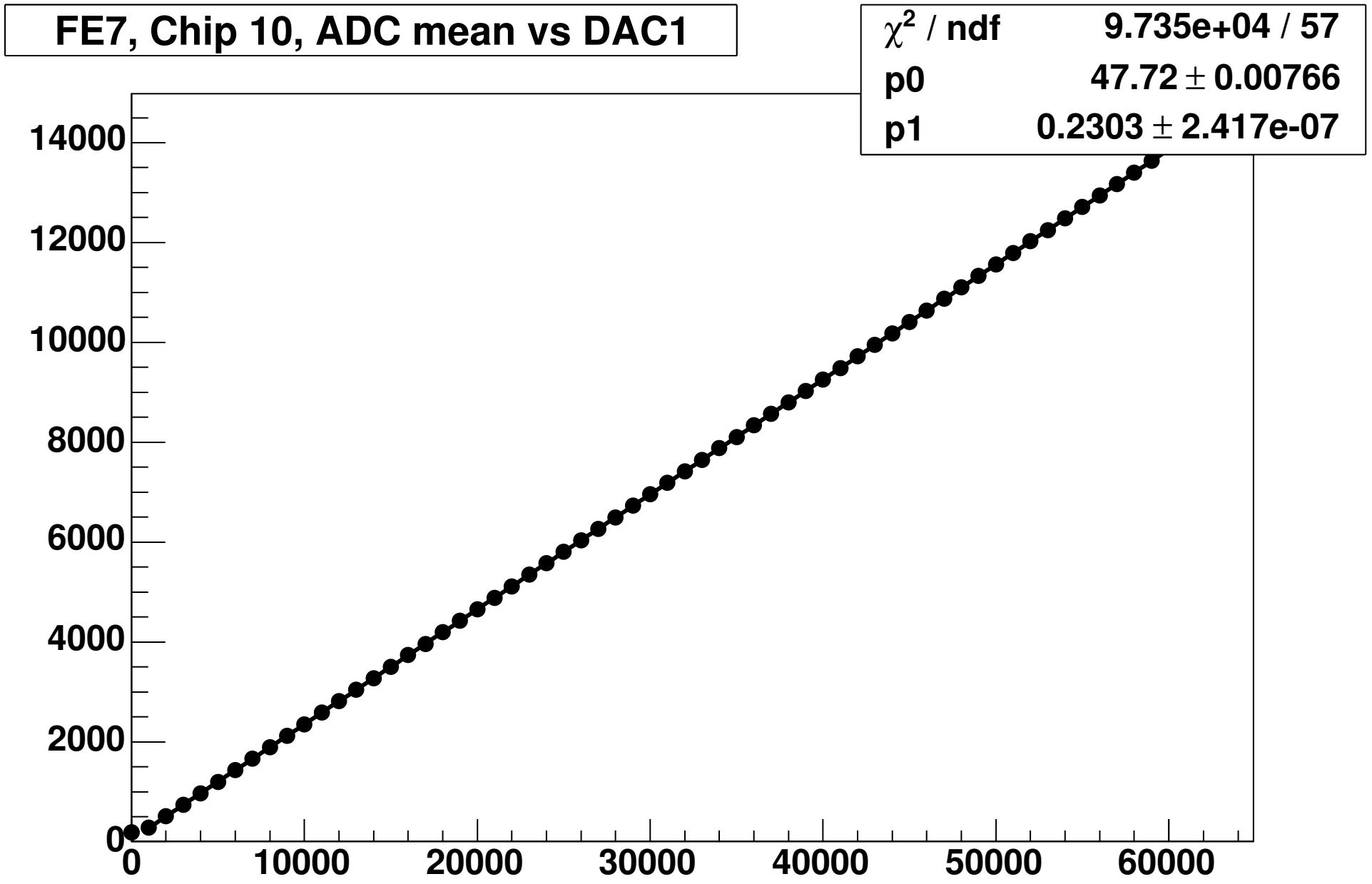

FE7, Chip 9, ADC noise vs DAC1
1.5
1.4
1.3
1.2
1.1
1
0.9
0
10000
20000
30000
40000
50000
60000

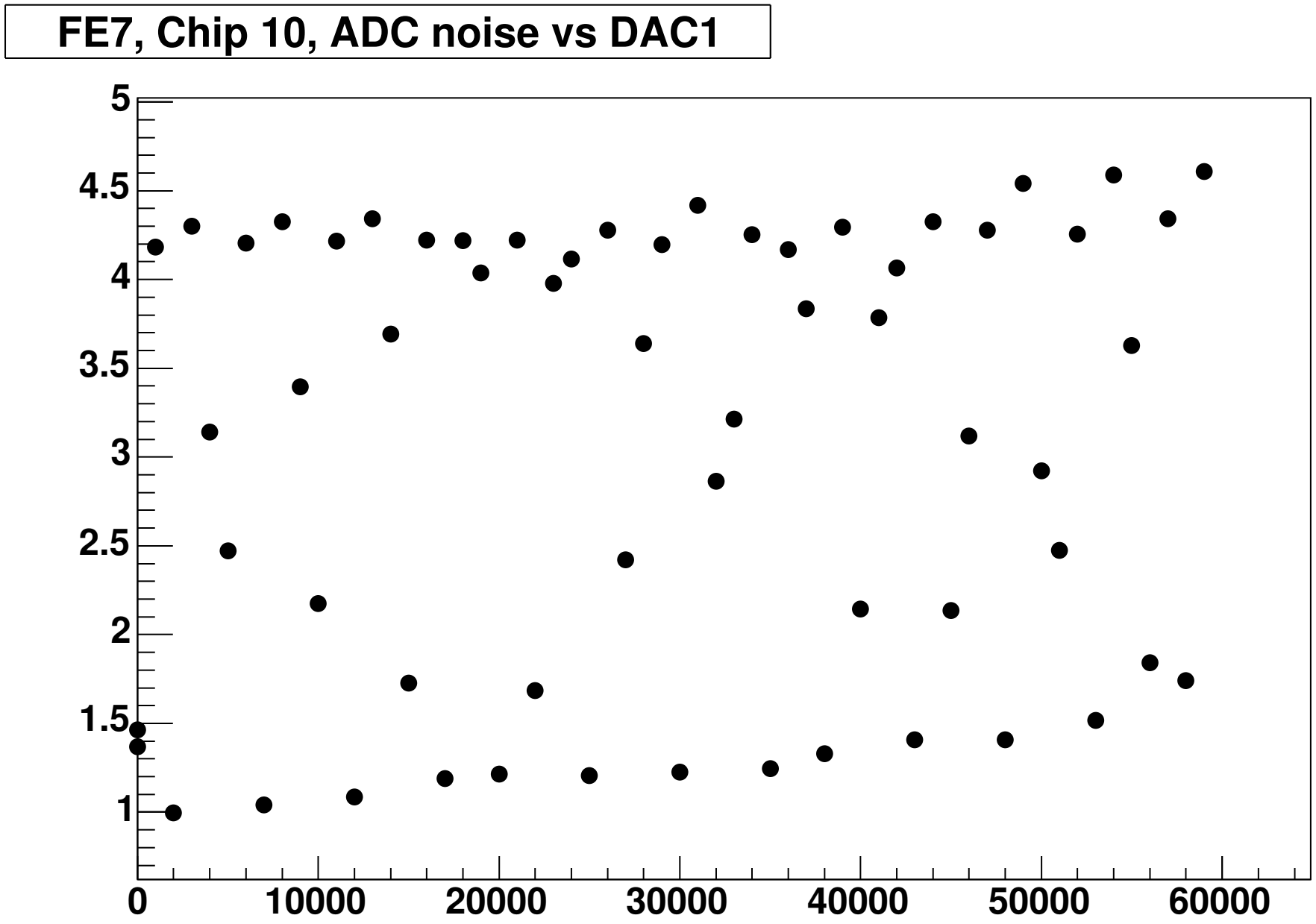

FE7, Chip 9, ADC residuals vs DAC1
1.5
1
0.5
0
-0.5
-1
-1.5
0
10000
20000
30000
40000
50000
60000

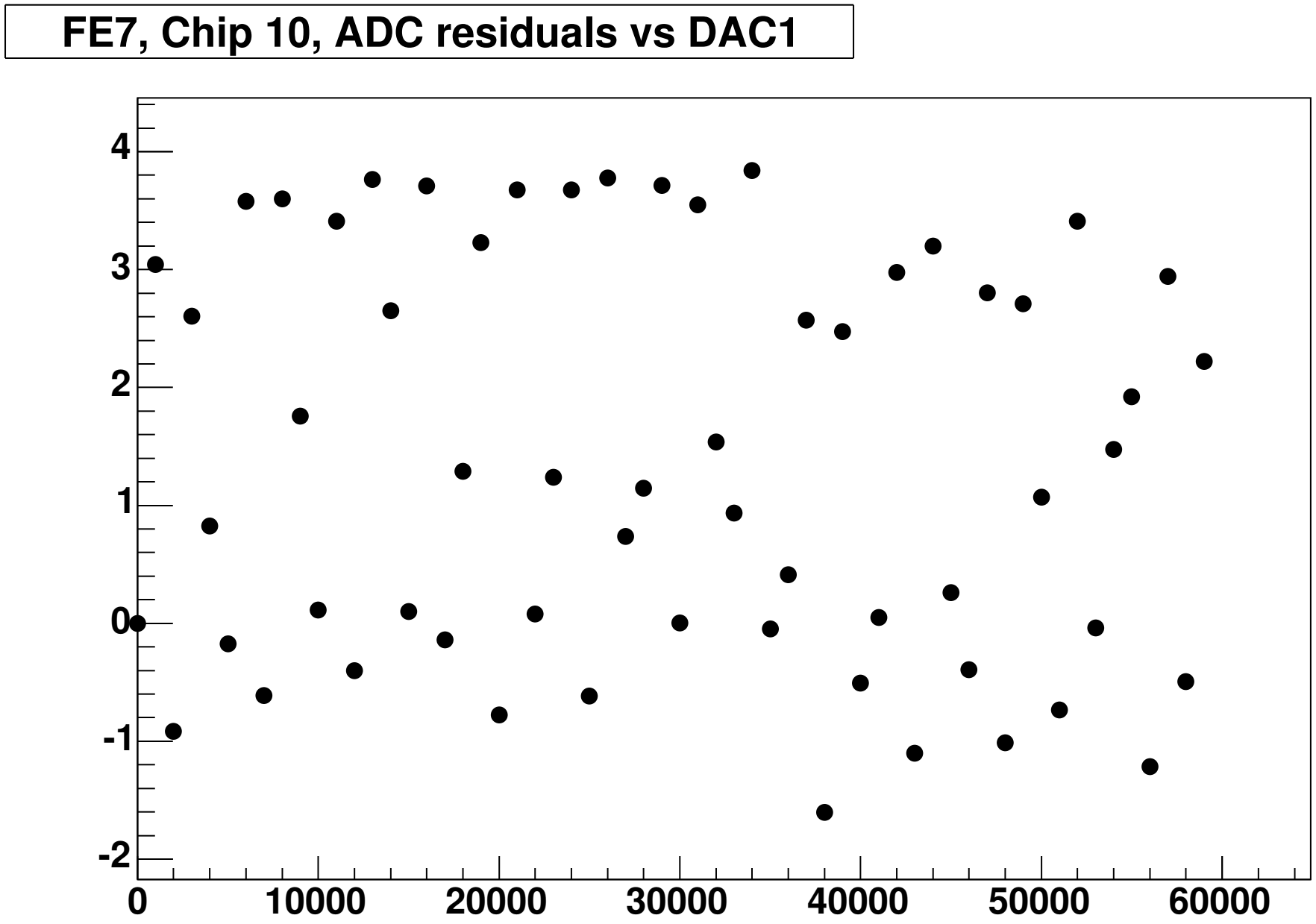

FE7, Chip 10, ADC mean vs DAC0
χ² / ndf 5.199e+04 / 57
p0 189.4 ± 0.004925
p1 1.473e-06 ± 1.444e-07
190.2
190
189.8
189.6
189.4
189.2
189
188.8
188.6
188.4
188.2
0
10000
20000
30000
40000
50000
60000

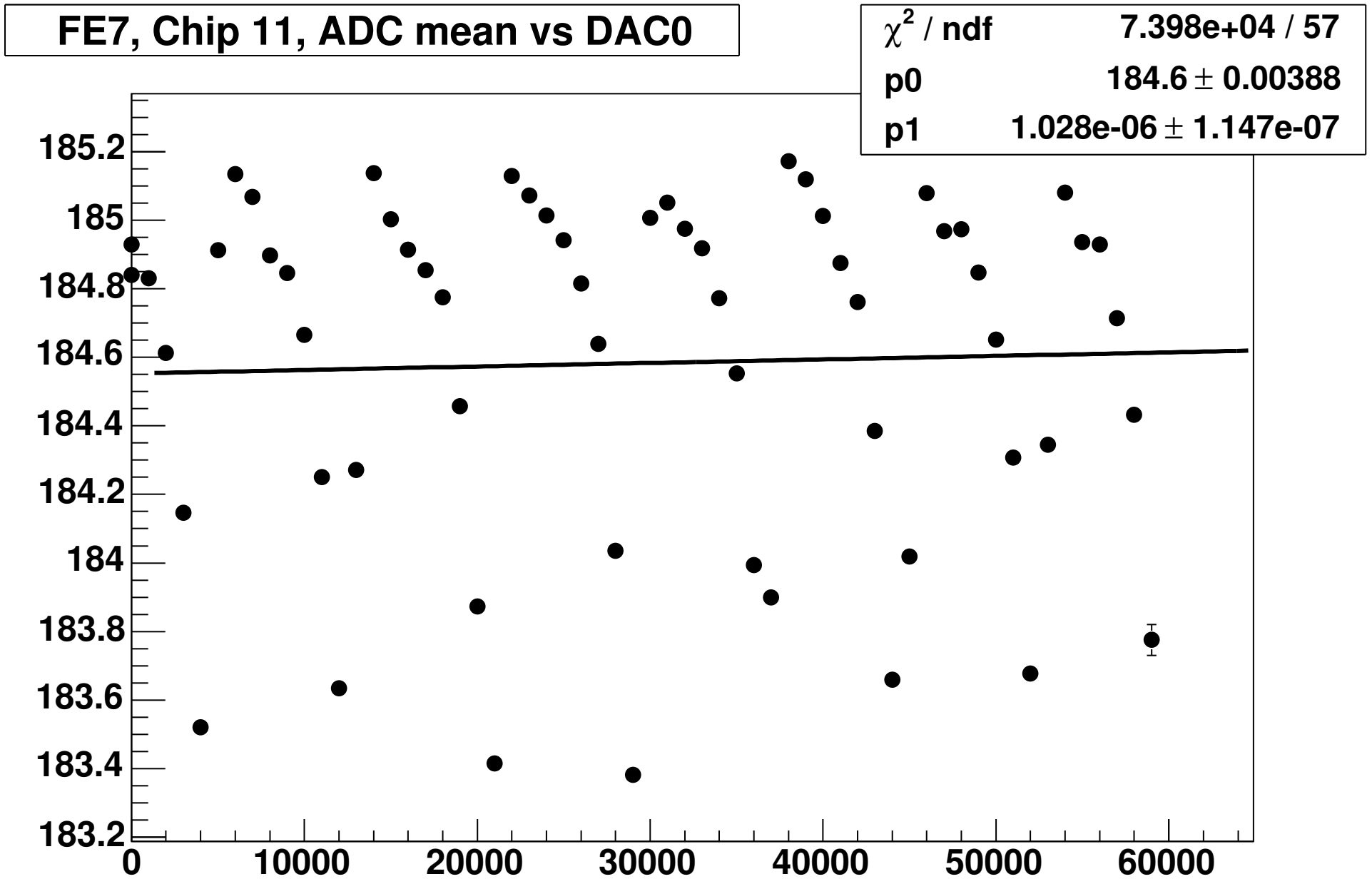

FE7, Chip 10, ADC noise vs DAC0
3
2.5
2
1.5
1
0
10000
20000
30000
40000
50000
60000

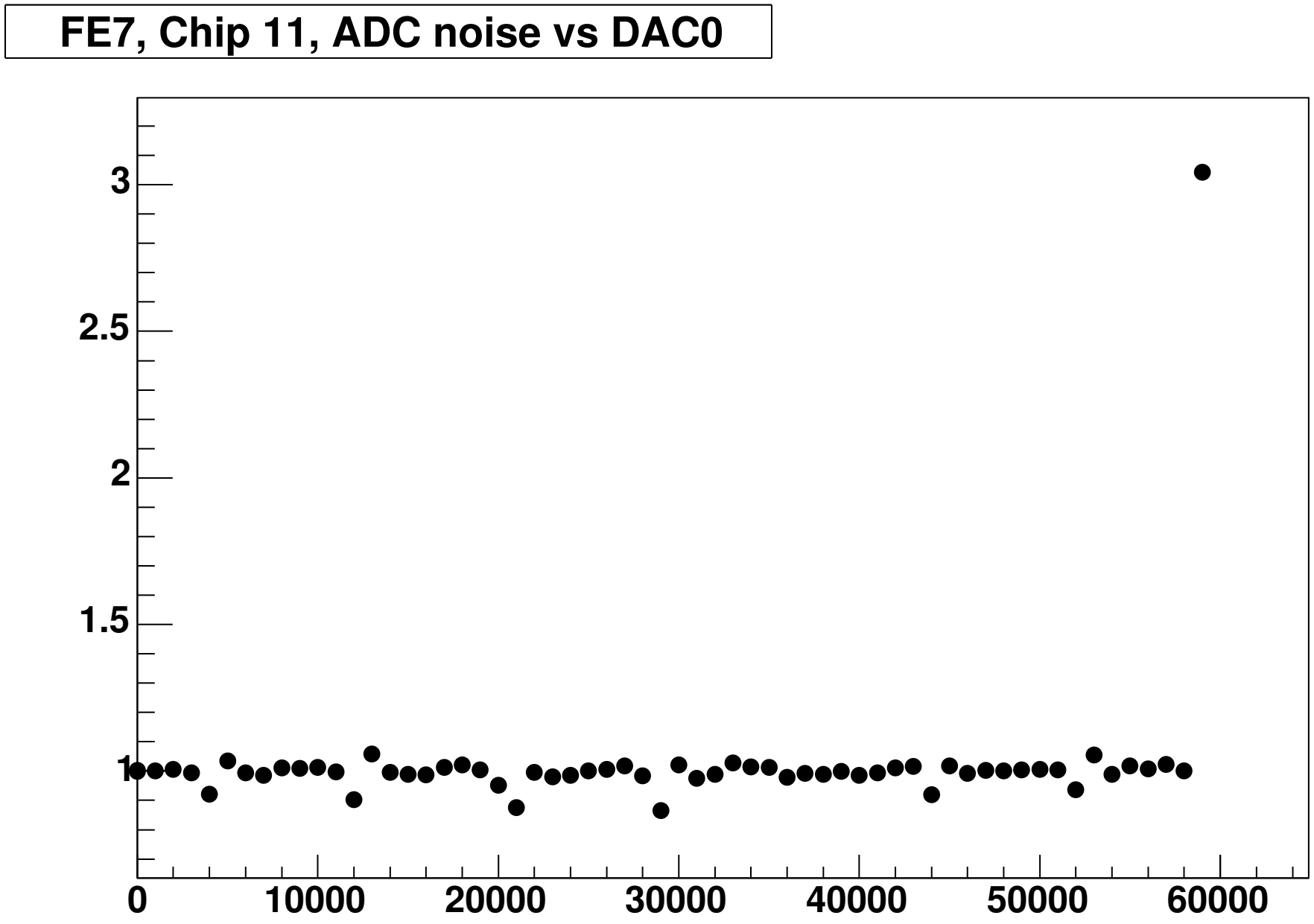

FE7, Chip 10, ADC residuals vs DAC0
0.8
0.6
0.4
0.2
-0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
0
10000
20000
30000
40000
50000
60000

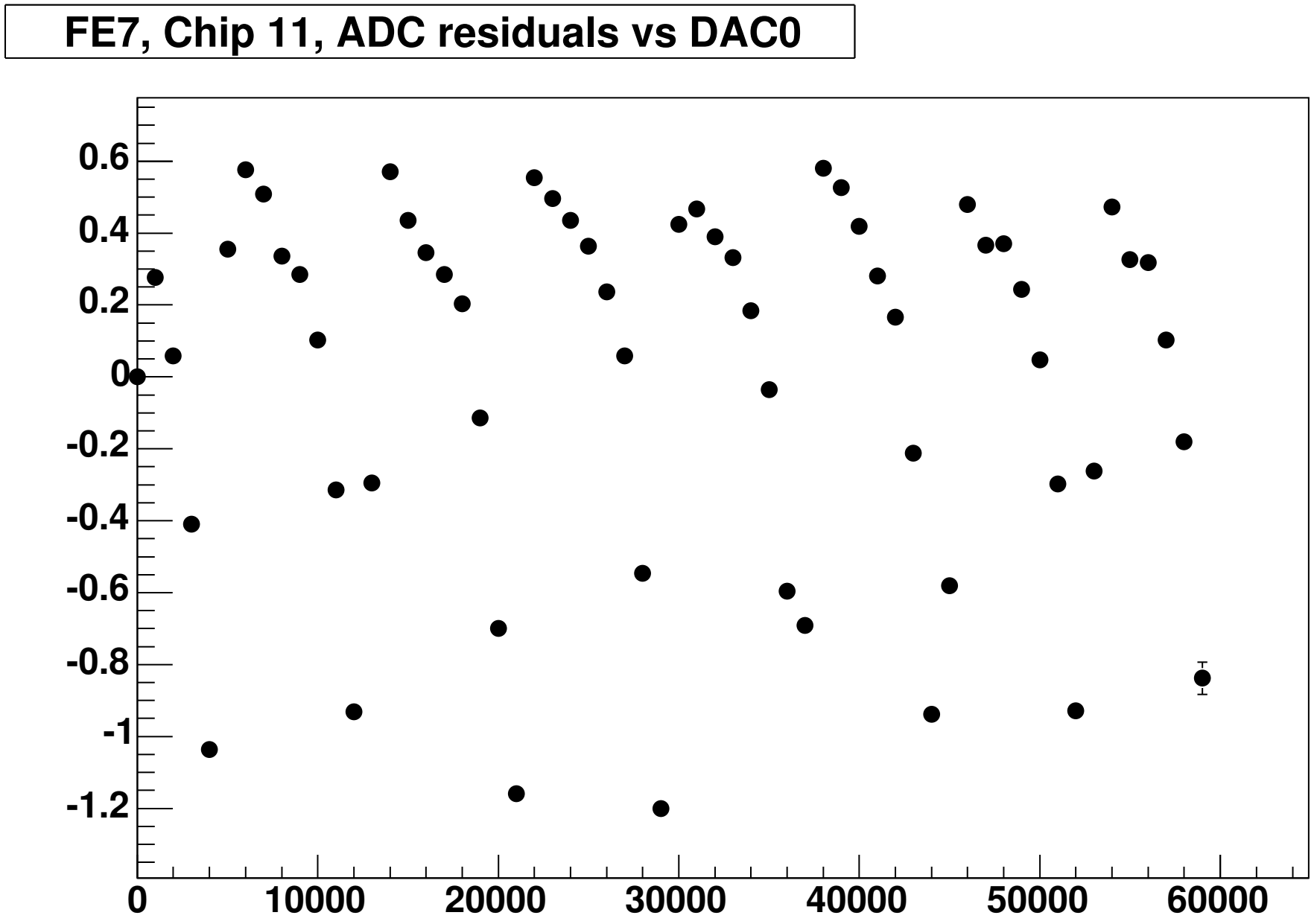

FE7, Chip 10, ADC mean vs DAC1
χ² / ndf 9.735e+04 / 57
p0 47.72 ± 0.00766
p1 0.2303 ± 2.417e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000

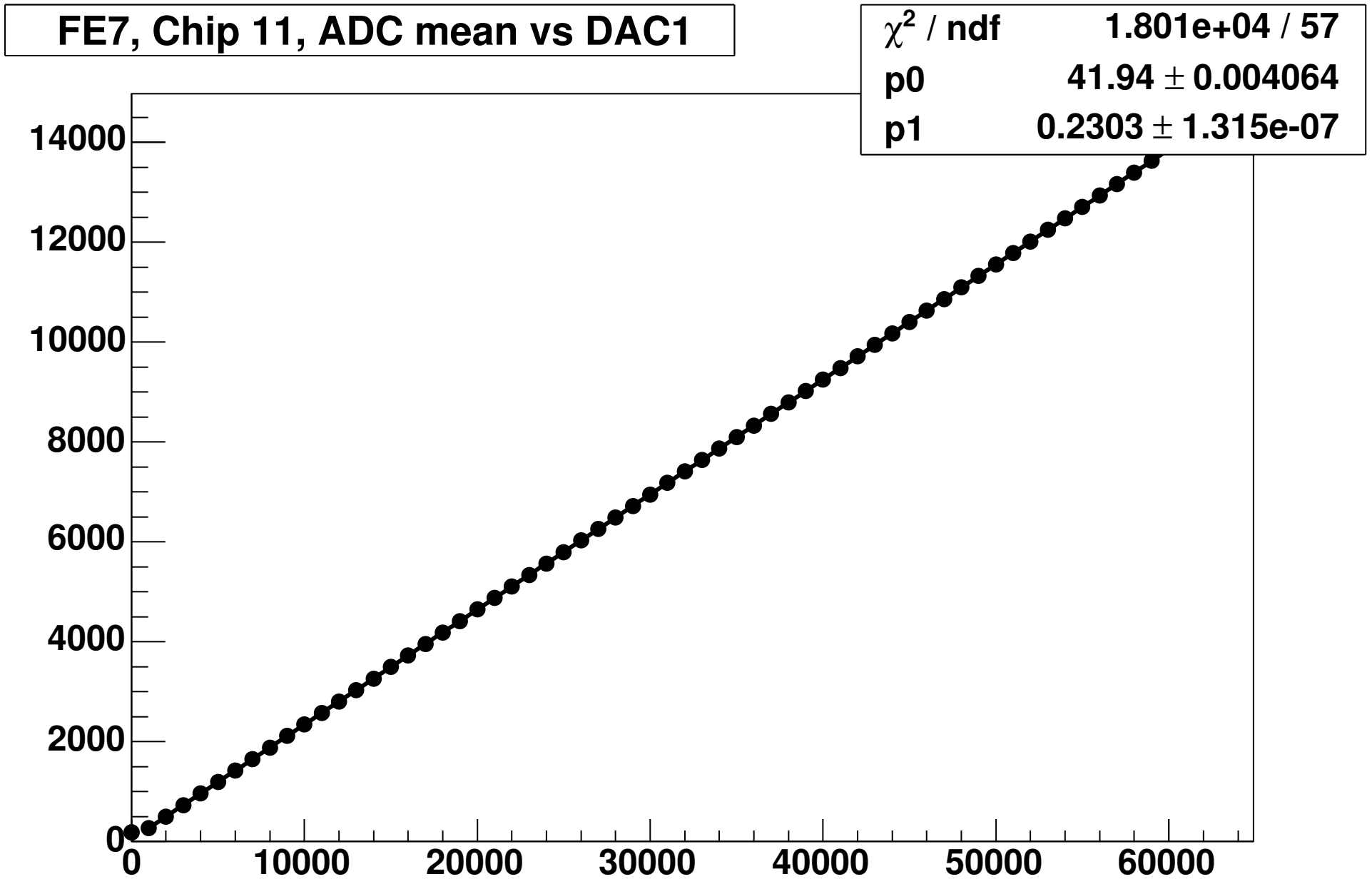

FE7, Chip 10, ADC noise vs DAC1
5
4.5
4
3.5
3
2.5
2
1.5
1
0
10000
20000
30000
40000
50000
60000

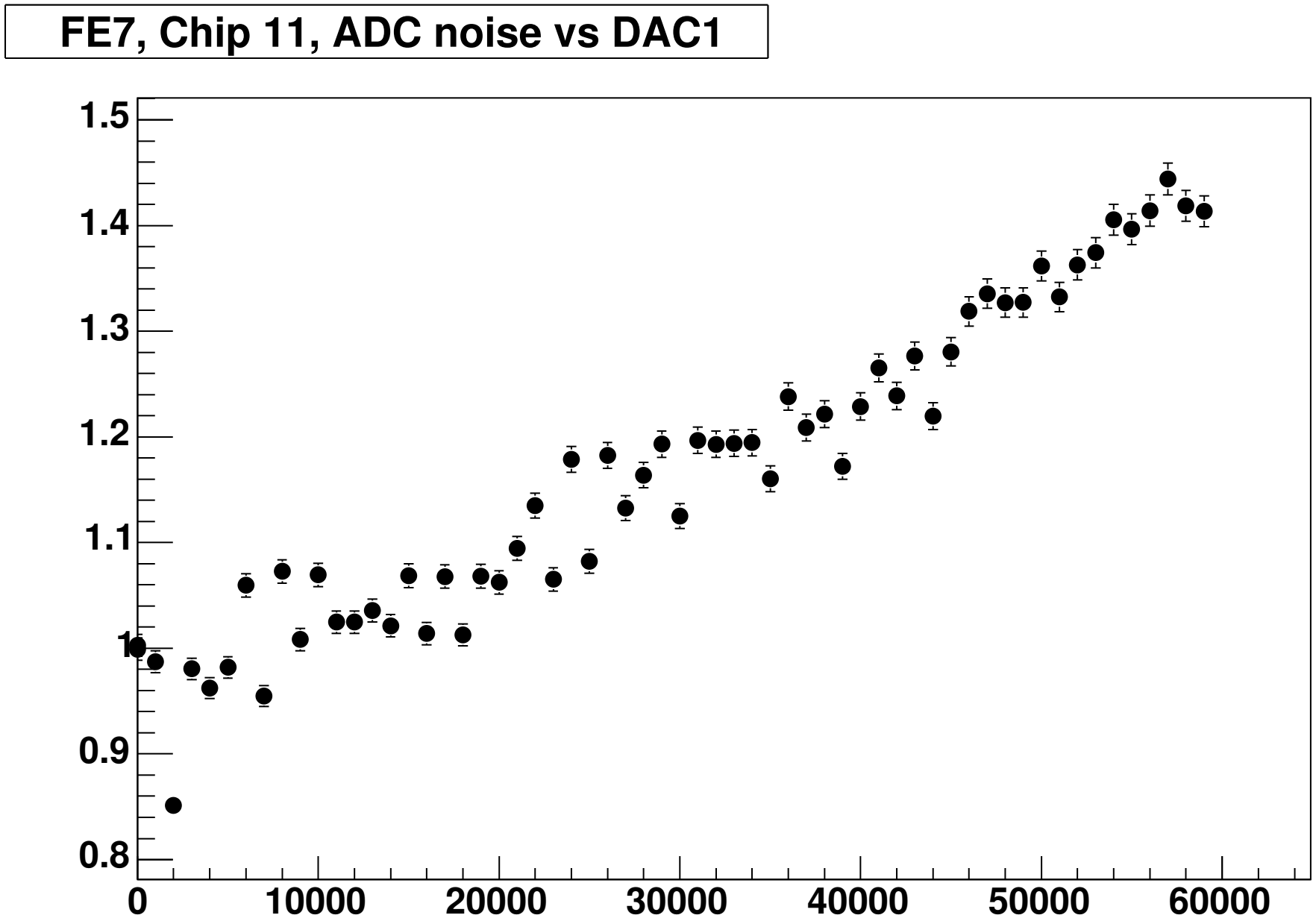

FE7, Chip 10, ADC residuals vs DAC1
4
3
2
1
0
-1
-2
0
10000
20000
30000
40000
50000
60000

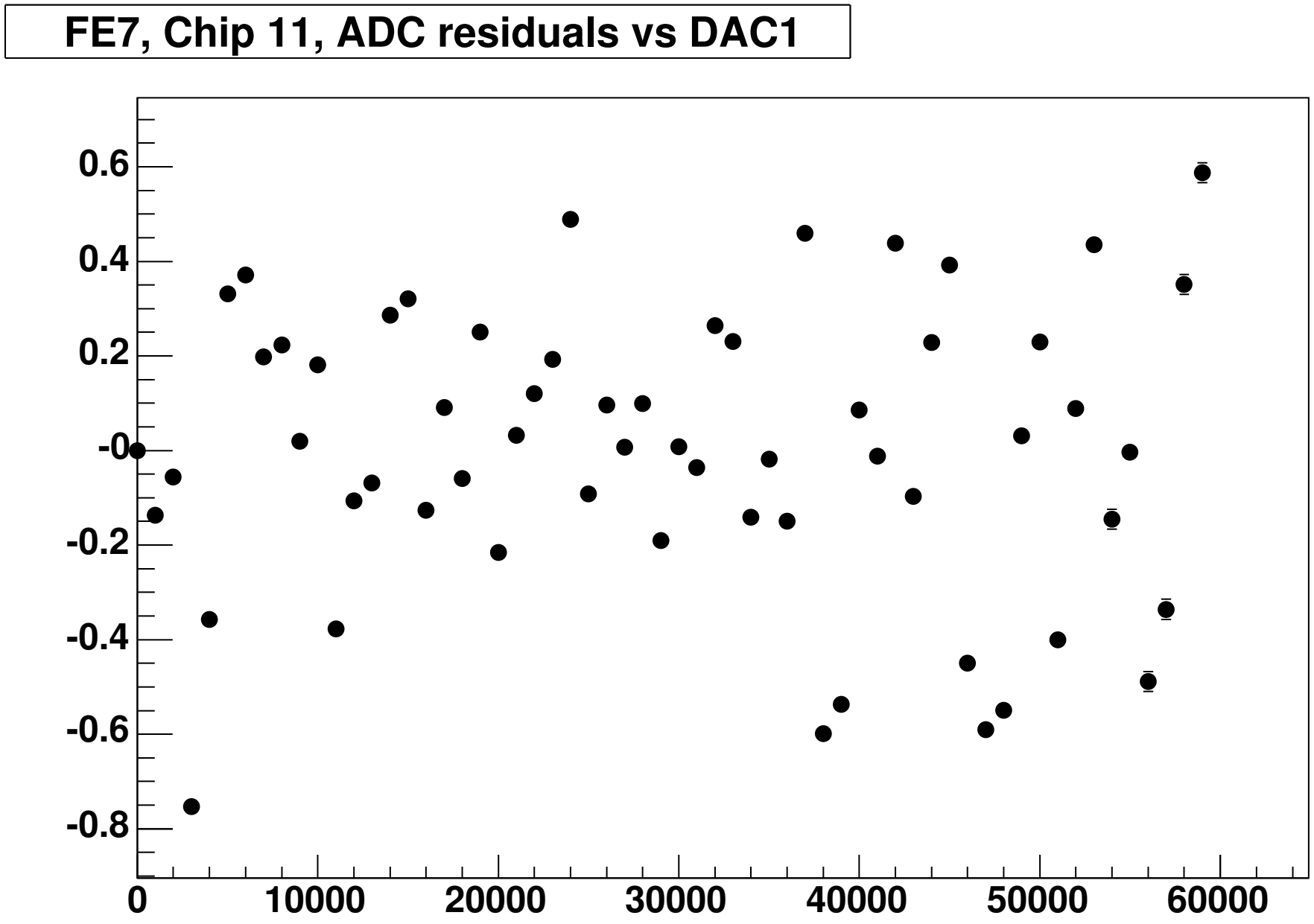

FE7, Chip 11, ADC mean vs DAC0
χ² / ndf 7.398e+04 / 57
p0 184.6 ± 0.00388
p1 1.028e-06 ± 1.147e-07
185.2
185
184.8
184.6
184.4
184.2
184
183.8
183.6
183.4
183.2
0
10000
20000
30000
40000
50000
60000

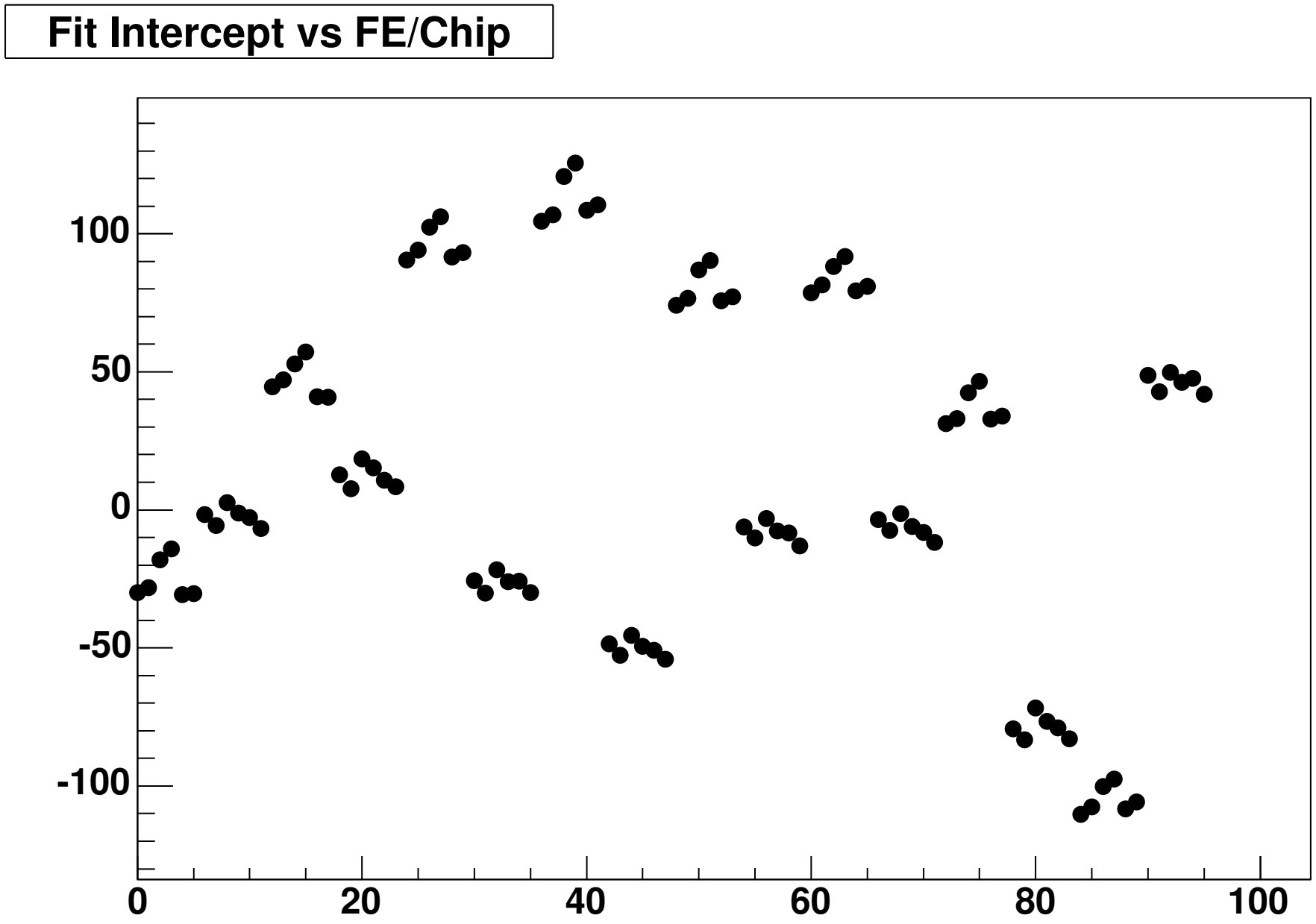

FE7, Chip 11, ADC noise vs DAC0
3
2.5
2
1.5
1
0
10000
20000
30000
40000
50000
60000

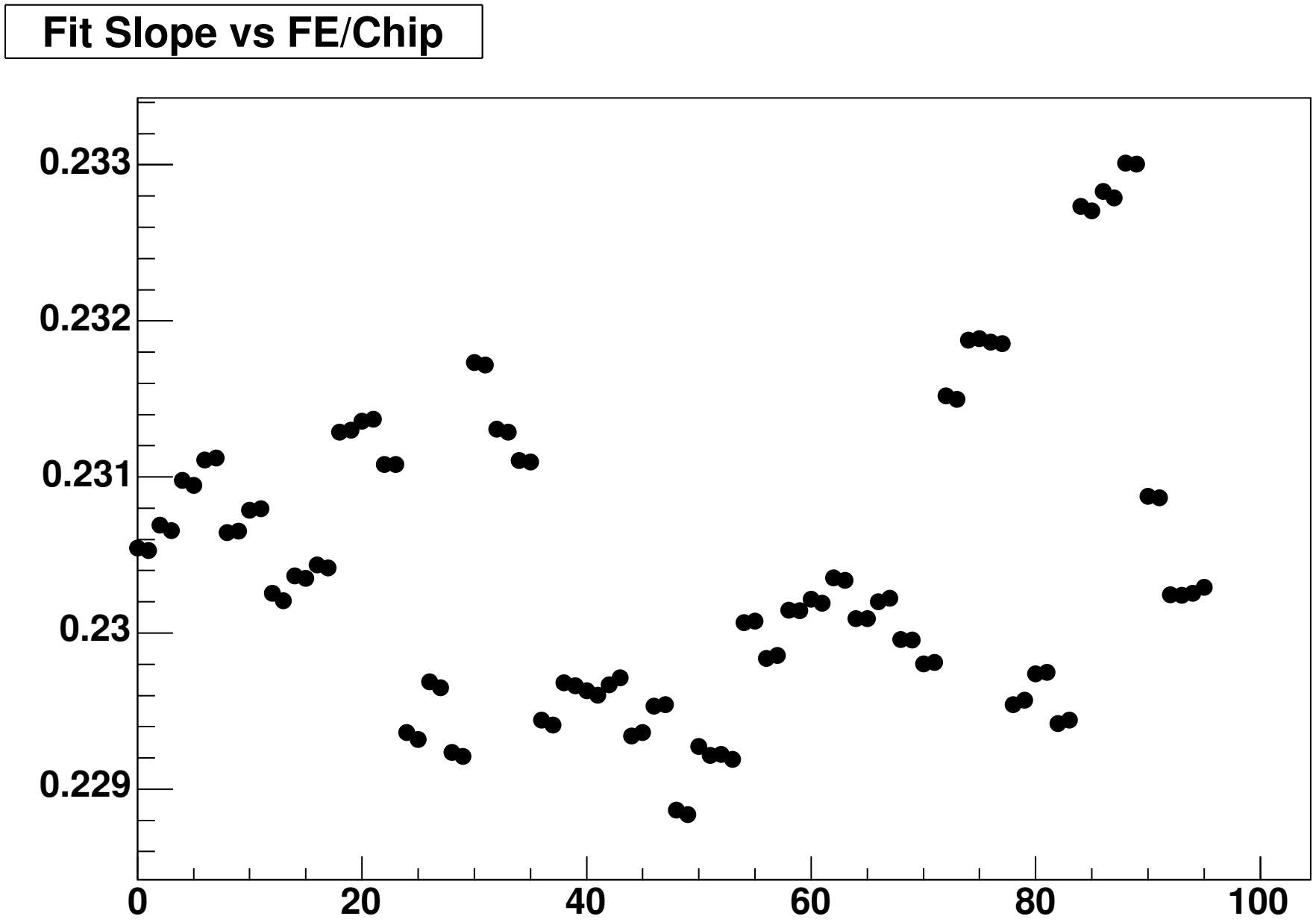

FE7, Chip 11, ADC residuals vs DAC0
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
0
10000
20000
30000
40000
50000
60000


FE7, Chip 11, ADC mean vs DAC1
χ² / ndf 1.801e+04 / 57
p0 41.94 ± 0.004064
p1 0.2303 ± 1.315e-07
14000
12000
10000
8000
6000
4000
2000
0
0
10000
20000
30000
40000
50000
60000


FE7, Chip 11, ADC noise vs DAC1
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0
10000
20000
30000
40000
50000
60000


FE7, Chip 11, ADC residuals vs DAC1
0.6
0.4
0.2
-0
-0.2
-0.4
-0.6
-0.8
0
10000
20000
30000
40000
50000
60000


Fit Intercept vs FE/Chip
100
50
0
-50
-100
0
20
40
60
80
100


Fit Slope vs FE/Chip
0.233
0.232
0.231
0.23
0.229
0
20
40
60
80
100