Amplitude spectra
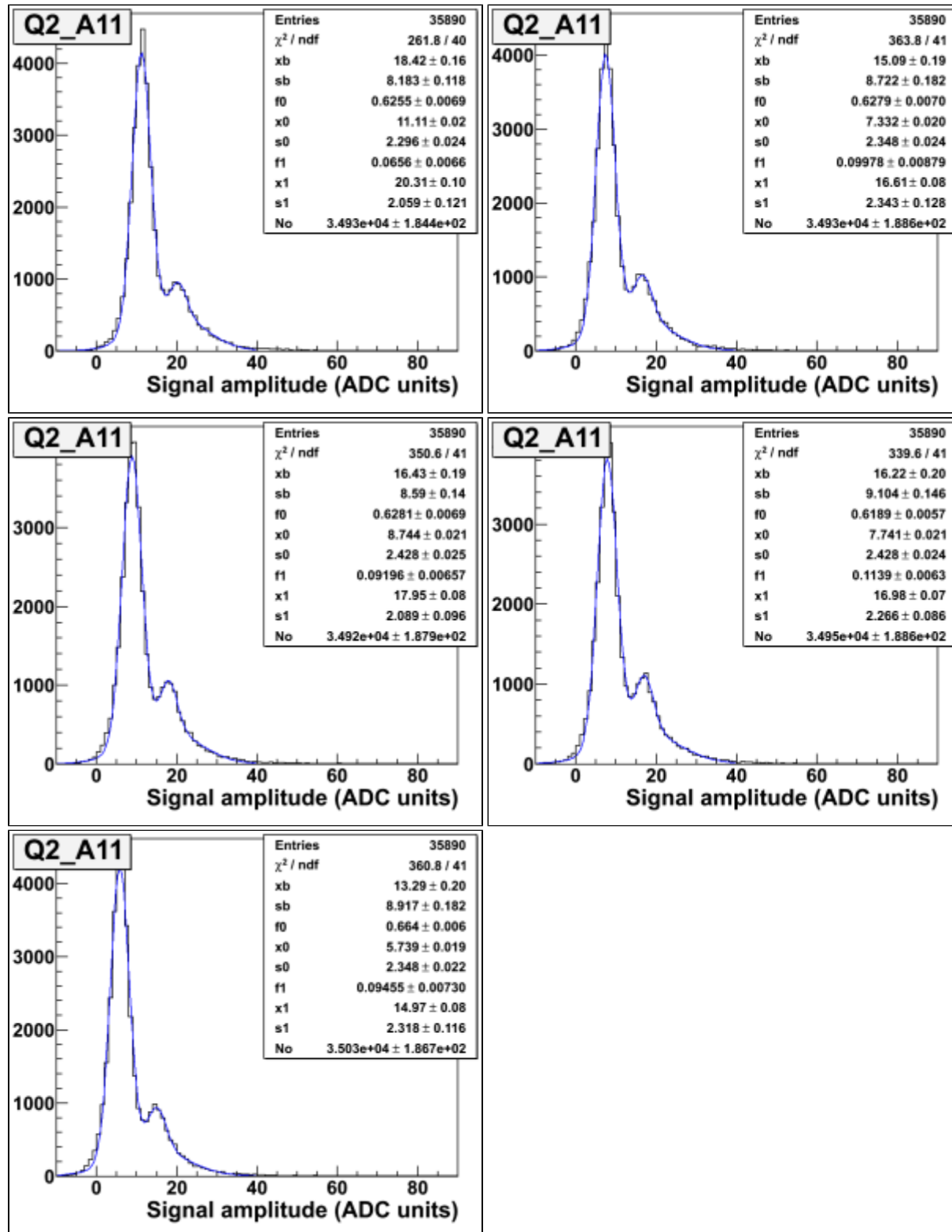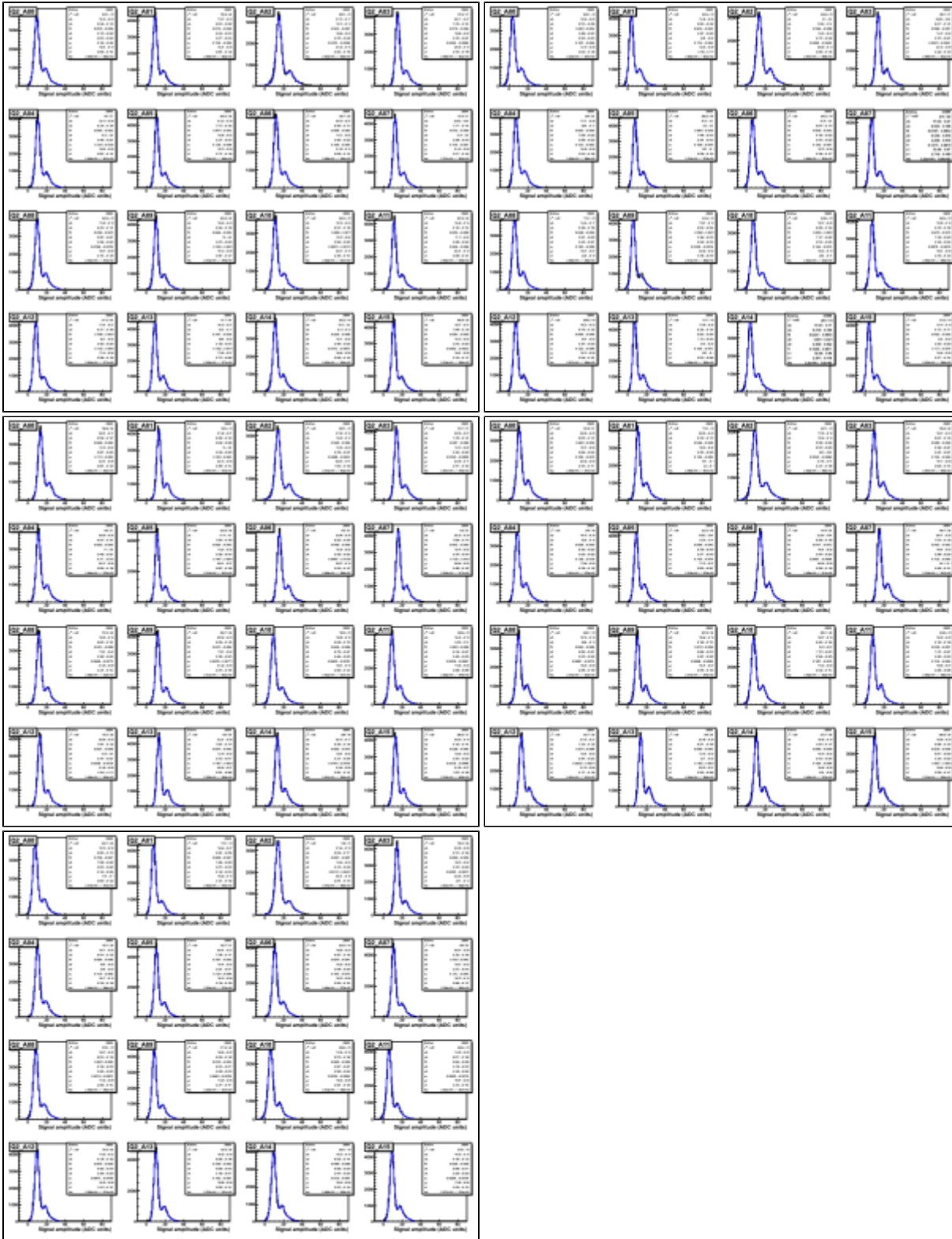
Spectra of ASICs' amplitudes for runs with transm.=0.002 and 0.005

Run 901, transm.=0.002
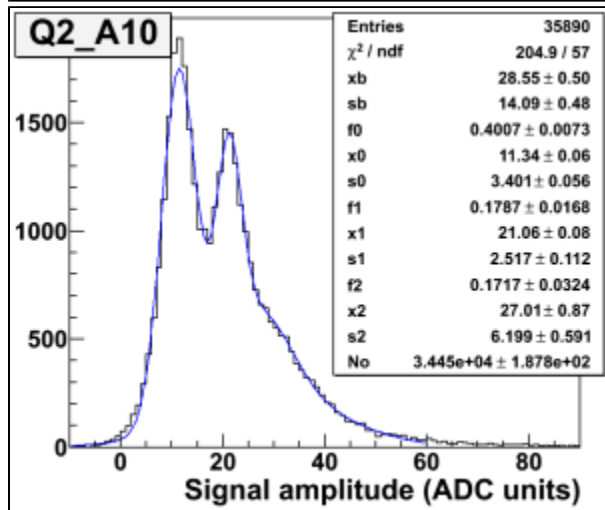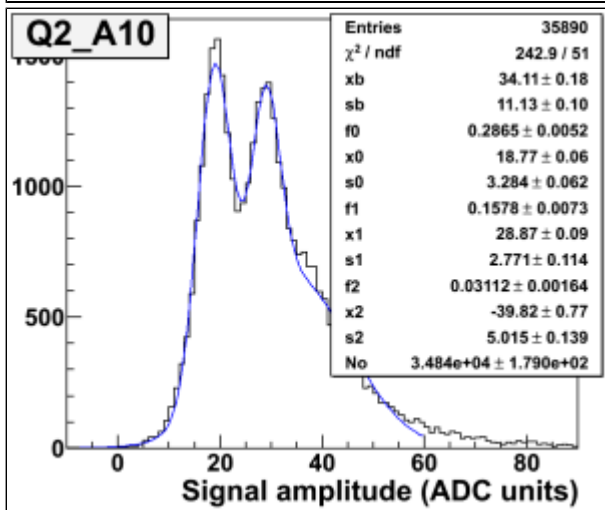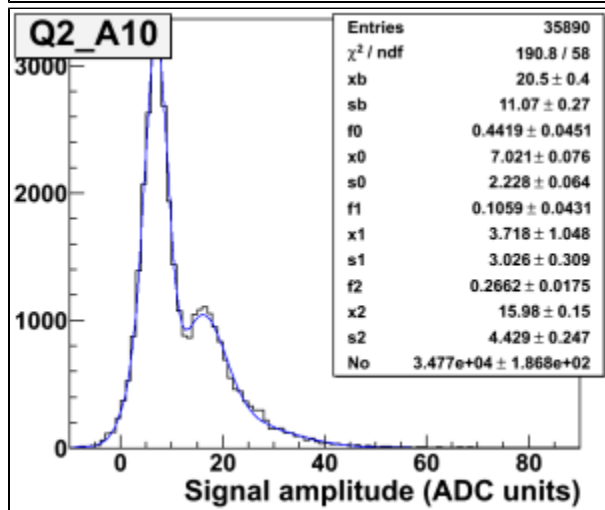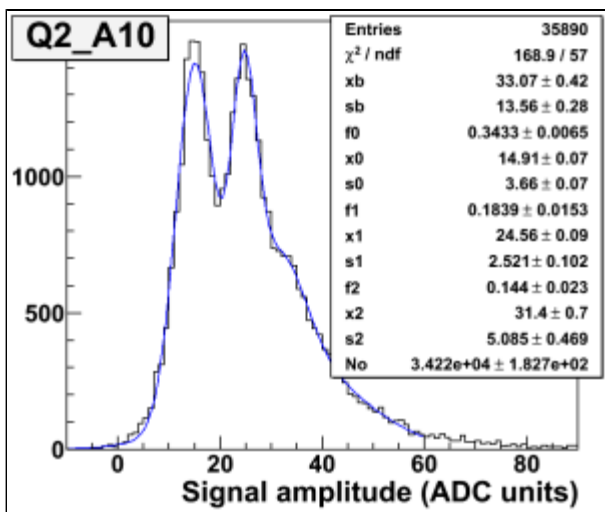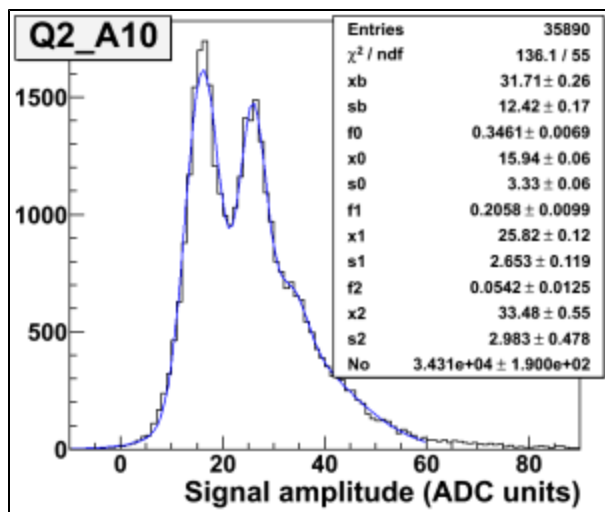
The spectra with triple-Gaussian fit for event 1, 11, 21, 31, and 41, respectively:

Run 902, transm.=0.005

**The spectra with quadro-Gaussian fit for event 1, 11, 21, 31, and 41, respectively:**

Q2_A10

Entries	35890
χ^2 / ndf	136.1 / 55
xb	31.71 ± 0.26
sb	12.42 ± 0.17
f0	0.3461 ± 0.0069
x0	15.94 ± 0.06
s0	3.33 ± 0.06
f1	0.2058 ± 0.0099
x1	25.82 ± 0.12
s1	2.653 ± 0.119
f2	0.0542 ± 0.0125
x2	33.48 ± 0.55
s2	2.983 ± 0.478
No	$3.431e+04 \pm 1.900e+02$

Signal amplitude (ADC units)

Q2_A10

Entries	35890
χ^2 / ndf	168.9 / 57
xb	33.07 ± 0.42
sb	13.56 ± 0.28
f0	0.3433 ± 0.0065
x0	14.91 ± 0.07
s0	3.66 ± 0.07
f1	0.1839 ± 0.0153
x1	24.56 ± 0.09
s1	2.521 ± 0.102
f2	0.144 ± 0.023
x2	31.4 ± 0.7
s2	5.085 ± 0.469
No	$3.422e+04 \pm 1.827e+02$

Signal amplitude (ADC units)

Q2_A10

Entries	35890
χ^2 / ndf	190.8 / 58
xb	20.5 ± 0.4
sb	11.07 ± 0.27
f0	0.4419 ± 0.0451
x0	7.021 ± 0.076
s0	2.228 ± 0.064
f1	0.1059 ± 0.0431
x1	3.718 ± 1.048
s1	3.026 ± 0.309
f2	0.2662 ± 0.0175
x2	15.98 ± 0.15
s2	4.429 ± 0.247
No	$3.477e+04 \pm 1.868e+02$

Signal amplitude (ADC units)

Q2_A10

Entries	35890
χ^2 / ndf	242.9 / 51
xb	34.11 ± 0.18
sb	11.13 ± 0.10
f0	0.2865 ± 0.0052
x0	18.77 ± 0.06
s0	3.284 ± 0.062
f1	0.1578 ± 0.0073
x1	28.87 ± 0.09
s1	2.771 ± 0.114
f2	0.03112 ± 0.00164
x2	-39.82 ± 0.77
s2	5.015 ± 0.139
No	$3.484e+04 \pm 1.790e+02$

Signal amplitude (ADC units)

Q2_A10

Entries	35890
χ^2 / ndf	204.9 / 57
xb	28.55 ± 0.50
sb	14.09 ± 0.48
f0	0.4007 ± 0.0073
x0	11.34 ± 0.06
s0	3.401 ± 0.056
f1	0.1787 ± 0.0168
x1	21.06 ± 0.08
s1	2.517 ± 0.112
f2	0.1717 ± 0.0324
x2	27.01 ± 0.87
s2	6.199 ± 0.591
No	$3.445e+04 \pm 1.878e+02$

Signal amplitude (ADC units)

Values derived from fit parameters, averaged over 100 events from runs 901 and 902
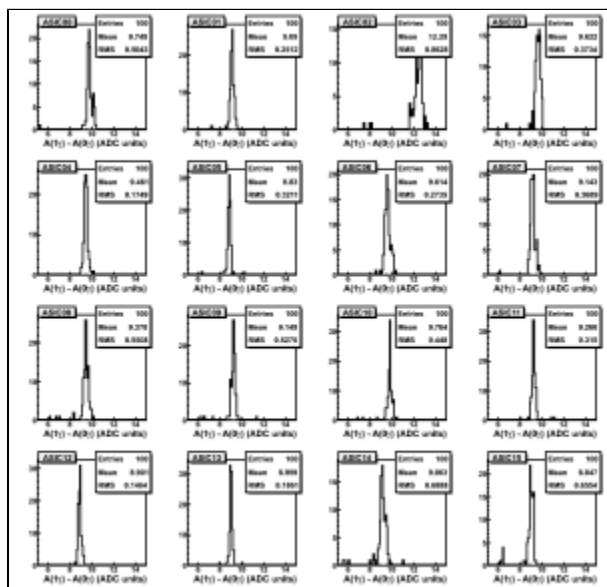
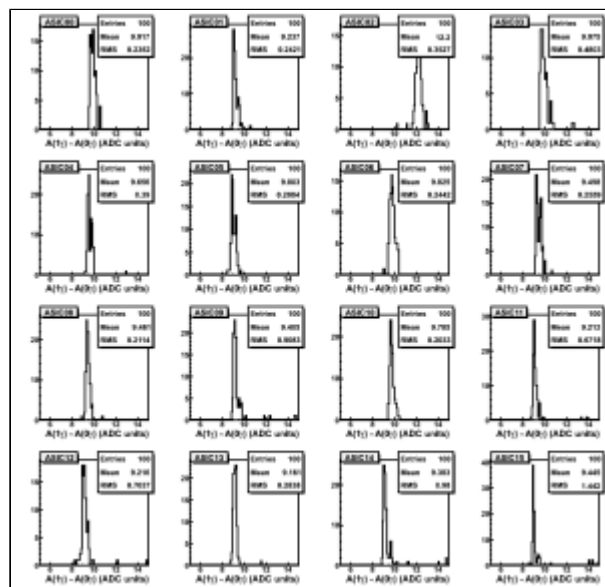**Common-mode offset (position of the 0-photon peak)**
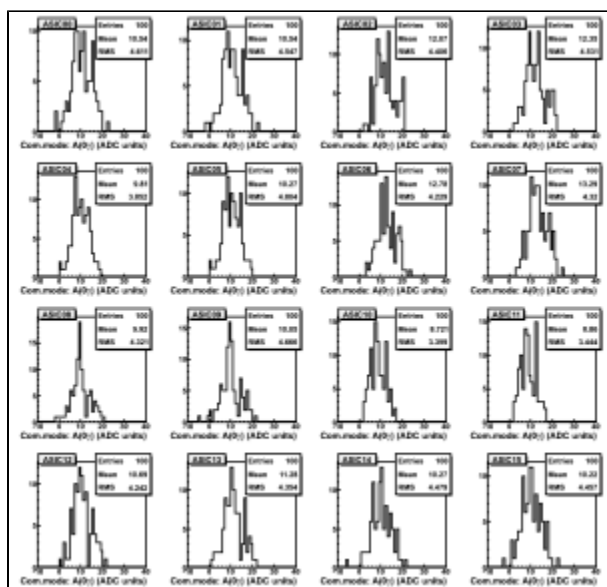
Run 902 -**Run 901**
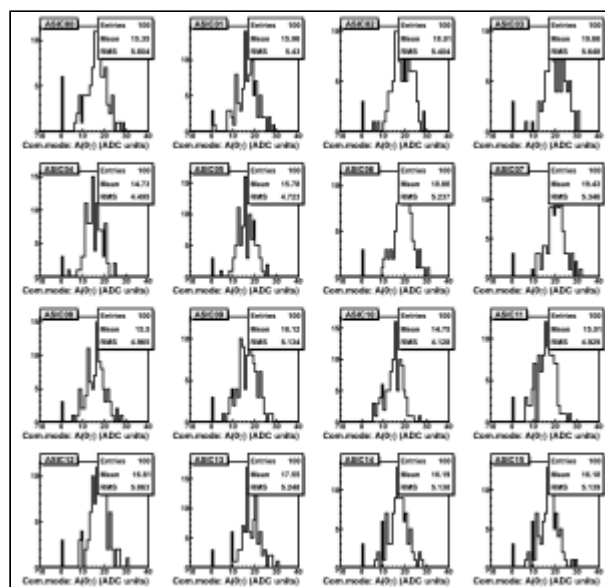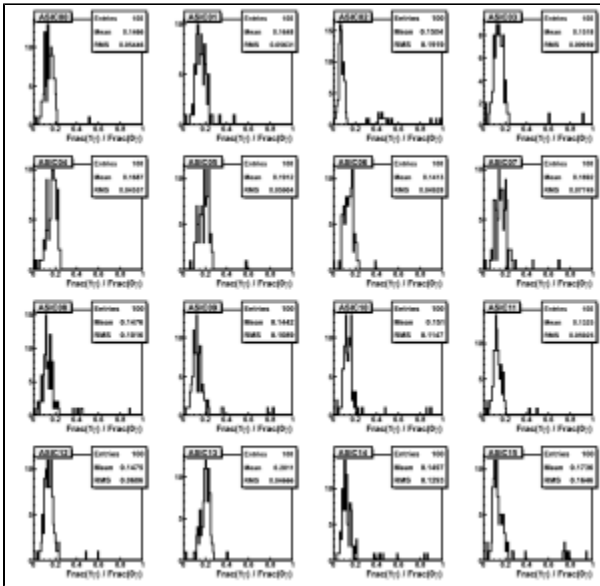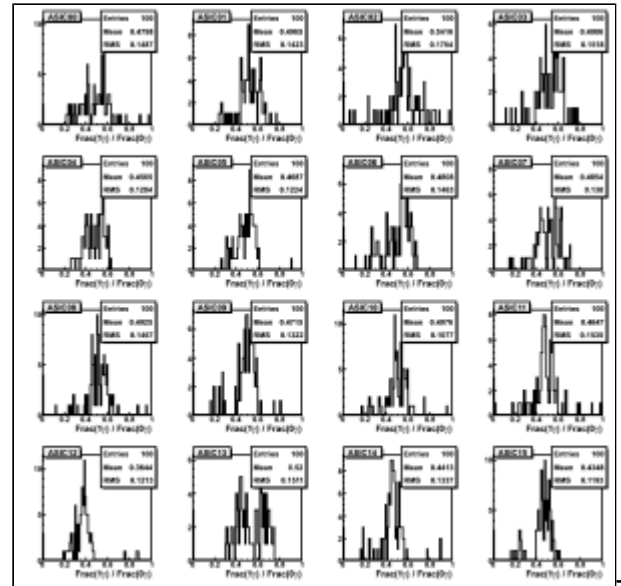
Gain factor (distance between 1- and 0-photon peaks)

Run 902 -**Run 901**

Mean number of photons per pixel (Frac.(1-photon) / Frac.(0-photon)) - shows uniformity of illumination of different ASICs
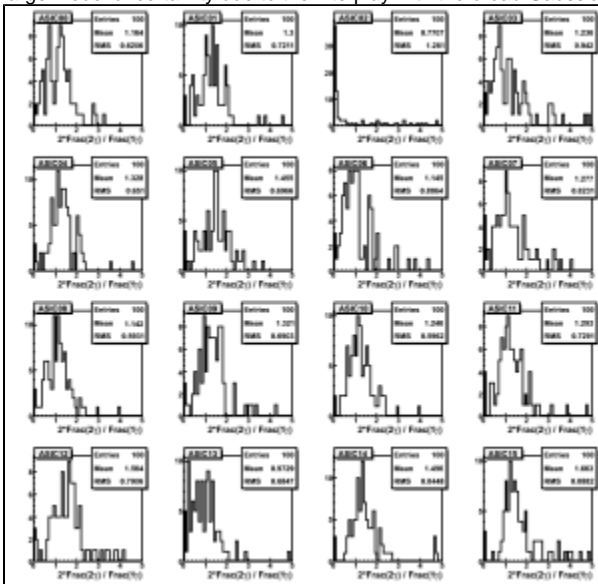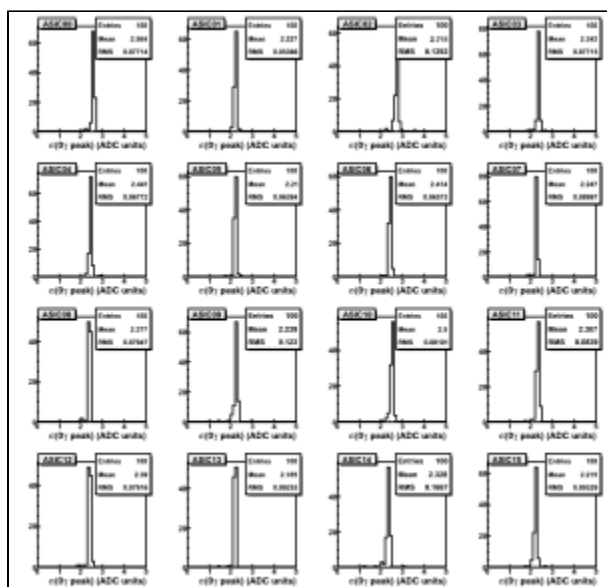
-Run 901

Run 902

Mean number of photons per pixel (2 * Frac.(2-photon) / Frac.(1-photon))

- The Frac.(2-photon) is not a well-defined value, because it is barely distinguished on the right sholder of the photon spectrum. This value have large model uncertainity due to the interplay with the broad Gaussians accounting for the background shape.
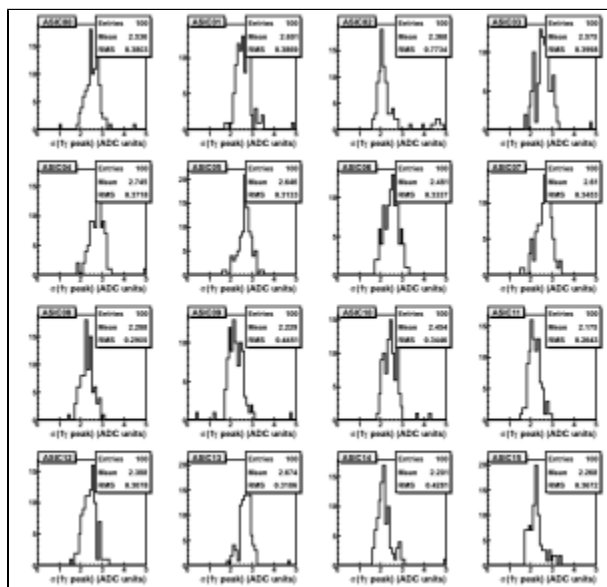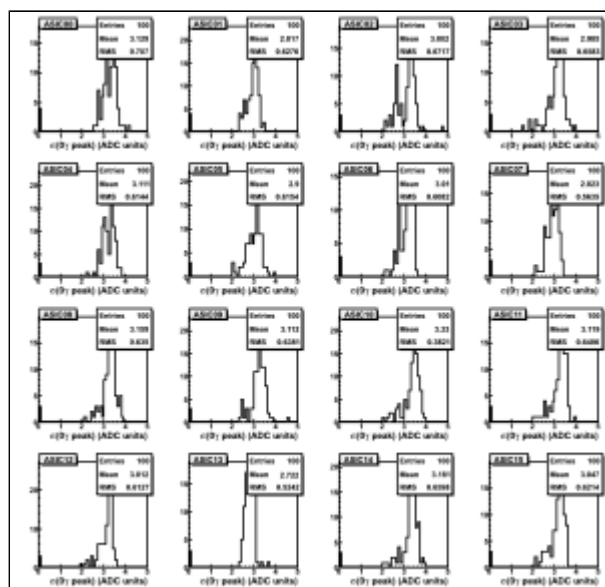

-Run 902

0-photon peak width (Gaussian sigma) - characteristic of resolution and ASIC uniformity

Run 902 ‑Run 901

1-photon peak width (Gaussian sigma) - characteristic of resolution and ASIC uniformity

Run 902 ‑Run 901