

目次

Drift Chamber の解析

- ① TDC 分布
- ② 距離 χ 分布
- ③ Residual 分布
- ④ χ^2/nof 分布 Slope 分布
- ⑤ n_{hitdc} 分布
- ⑥ Efficiency

① TDC 分布

- DC に hit した n_{hitdc} (10) すべてを Plot (赤線)
- 1st hit のみを Plot (黒線)
- 直線 fit に使用した hit を Plot (青)

↳ Cut: $\frac{n_{hit} \geq 3}{\downarrow}$, $\frac{\chi^2}{n_{of}} > 10$

DC fit の際に

最低 3 点を要求した

↖ Number Of Freedom

Slit 20 mm の run と 3 mm の run
を比較する

↳ TDC 3Y は Slit をせまくした後もなお
悪いことがわかる

② 距離 \times 分布

Cut: $n_{hitdc} \geq 3$, $\frac{\chi^2}{n_{of}} > 10$

③ Residual 分布

- $e^-(-1\text{GeV})$ の run と
 $e^-(-4\text{GeV})$ の run を 比較する
↳ エネルギー - が高い方が
Resolution が良いことが判る
- Slit 20 mm の run と
Slit 3 mm の run を 比較する
↳ Slit をせまくした方が
Resolution が良い
- 初めの方の run では
Resolution が悪い

④ χ^2/nof , Slope 分布

- Slit 20 mm の run と
Slit 3 mm の run を比較
- 黒線: 3点以上を用いて fit ($n_{\text{hit}} \geq 3$)
max 16 hit を使用 ($i_{\text{first}} = 0$)
- 青線: 4点を用いて fit ($n_{\text{hit}} = 4$)
max 16 hit を使用 ($i_{\text{first}} = 0$)
↑一番 χ^2 が小さくなる hit を用いる

⑤ n_{hitdc} 分布

- Slit 20 mm の run と
Slit 3 mm の run を比較
- ↳ Slit をせまくしたあとは
1st hit が多い

⑥ efficiency

$$\frac{\chi^2}{\text{nof}} < 5 \text{ のイベント数}$$

$$\text{efficiency} = \frac{\text{ireg}(2) = 1 \text{ のイベント数}}{\text{ireg}(2) = 1 \text{ のイベント数}} \times 100 \quad (\%)$$

・ 4種類 の 直線 fit を行った

① 3点以上のhitを要求 ($n_{\text{hit}} \geq 3$)

かつ max 16 hit 使用 ($i_{\text{first}} = 0$)

② 4点のhitを要求 ($n_{\text{hit}} = 4$)

かつ max 16 hit 使用 ($i_{\text{first}} = 0$)

③ $n_{\text{hit}} \geq 3$ かつ 1st hit 使用 ($i_{\text{first}} = 1$)

④ $n_{\text{hit}} = 4$ かつ 1st hit 使用 ($i_{\text{first}} = 1$)

・ 3種類 の efficiency を求めた

① $\chi^2(x)/\text{nof} < 5$

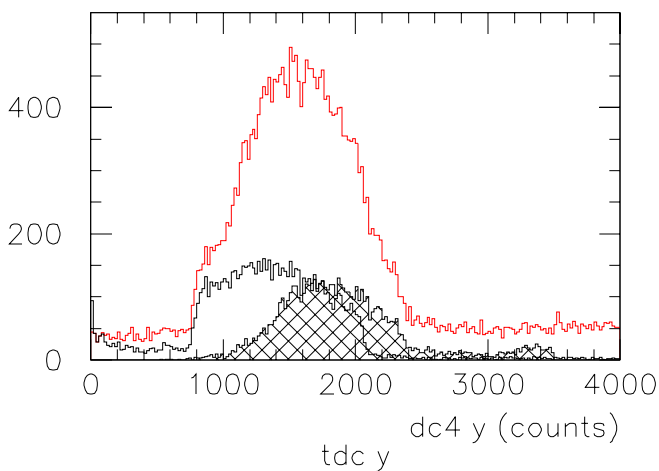
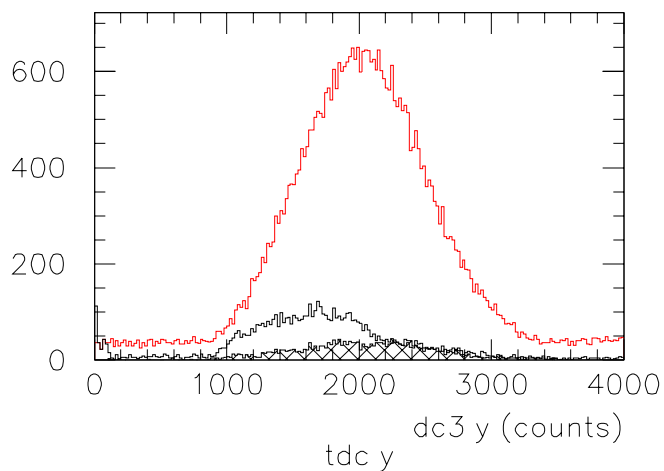
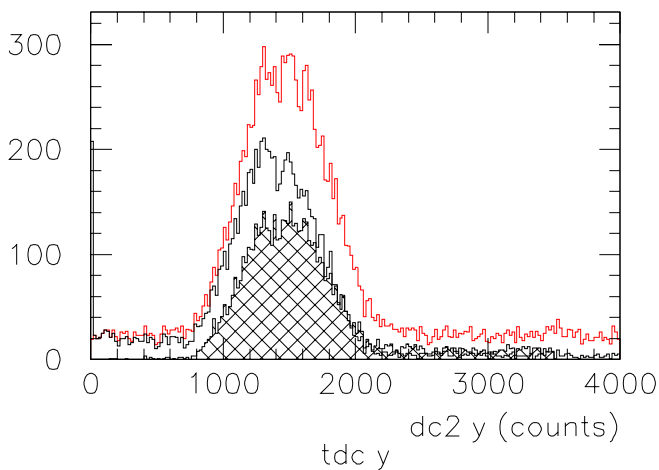
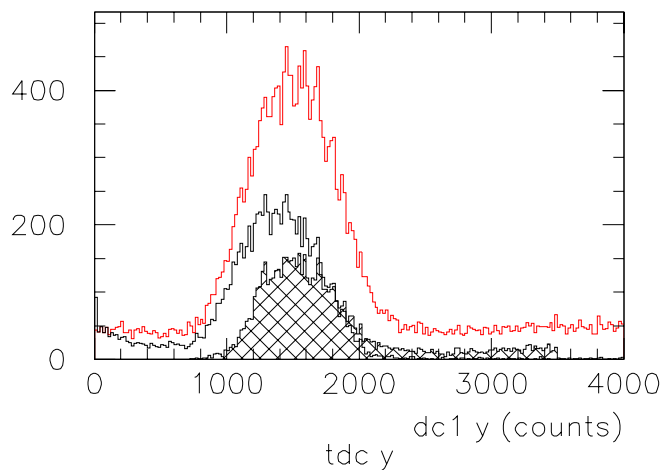
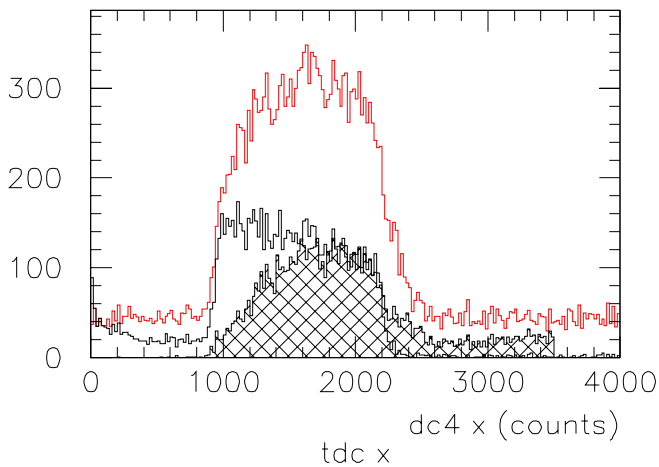
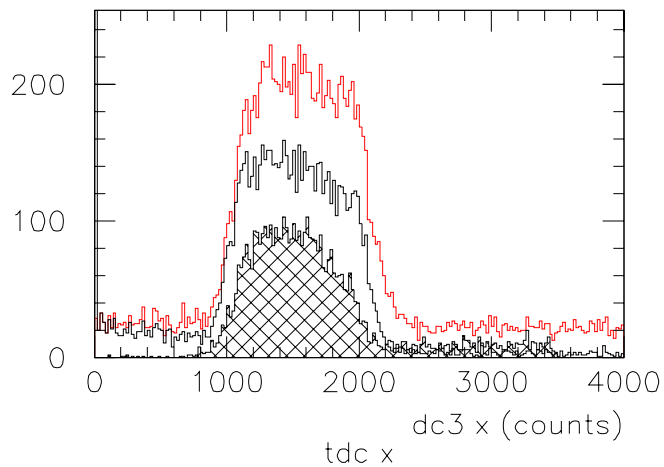
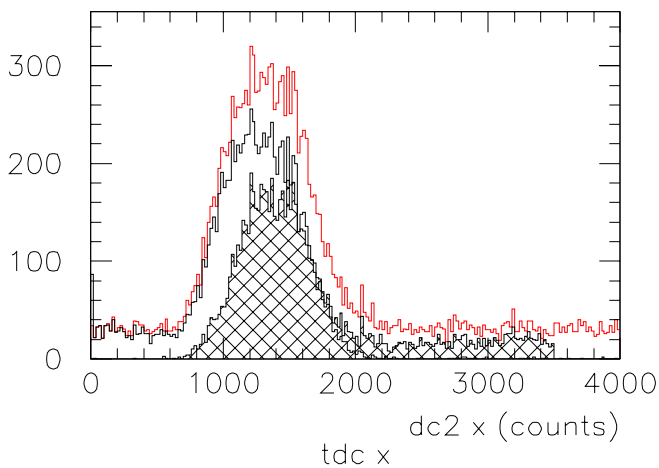
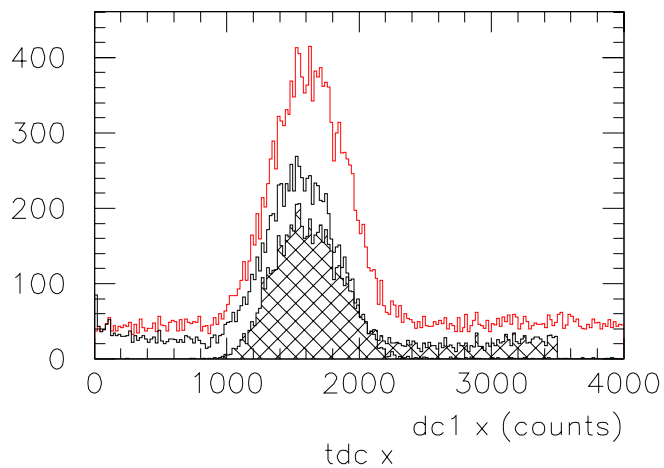
② $\chi^2(y)/\text{nof} < 5$

③ $\chi^2(x)/\text{nof} < 5$ かつ $\chi^2(y)/\text{nof} < 5$

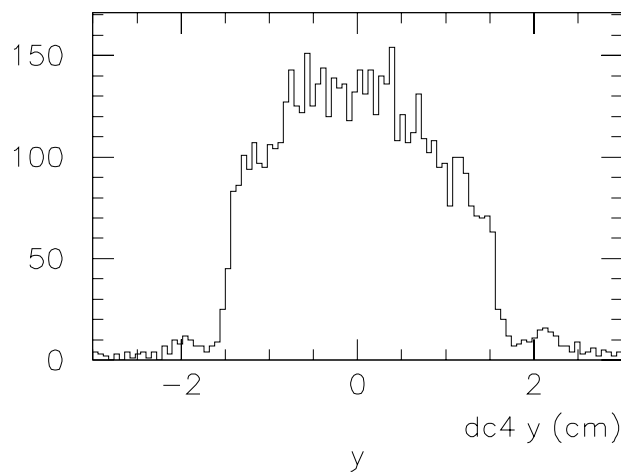
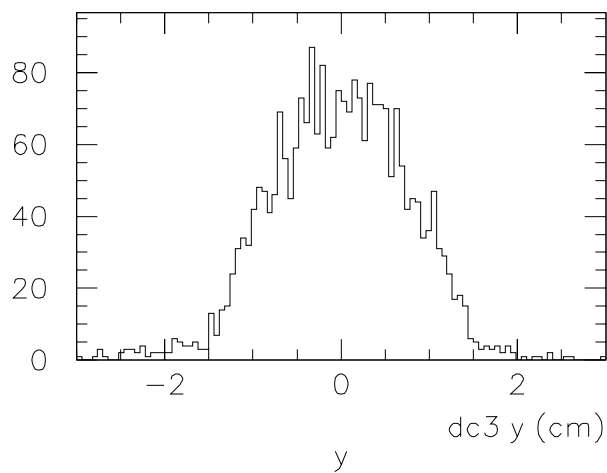
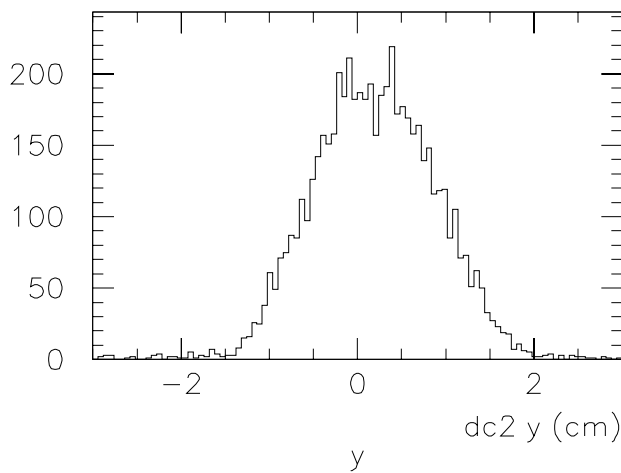
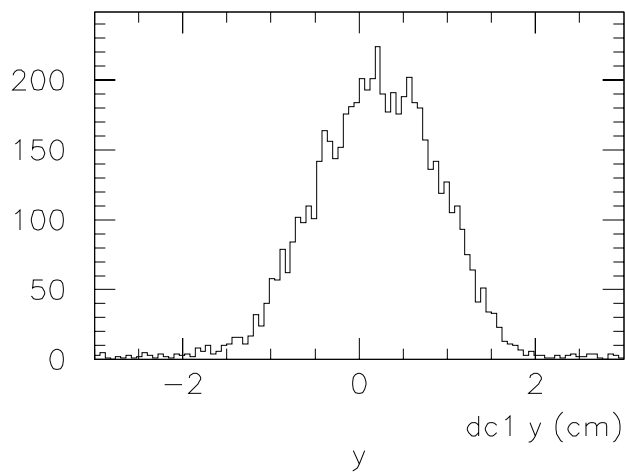
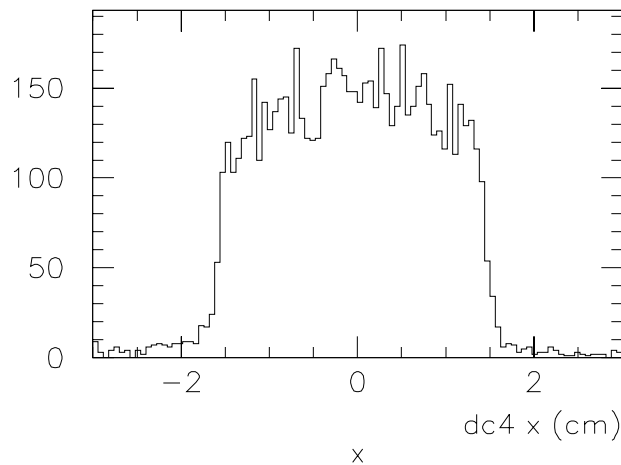
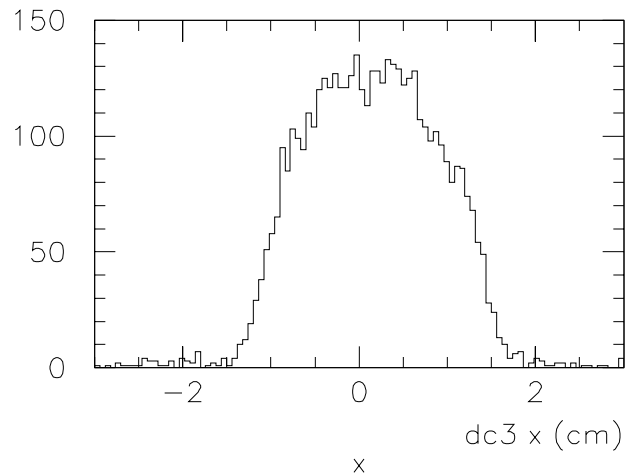
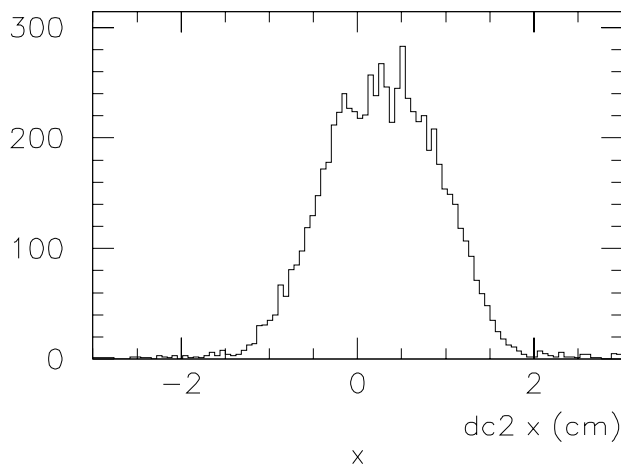
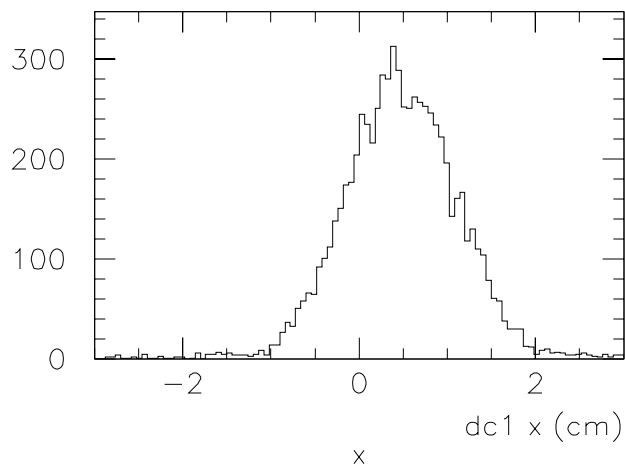
↳ $n_{\text{hit}} \geq 3$, $i_{\text{first}} = 0$ の efficiency が

最も高いことが判る

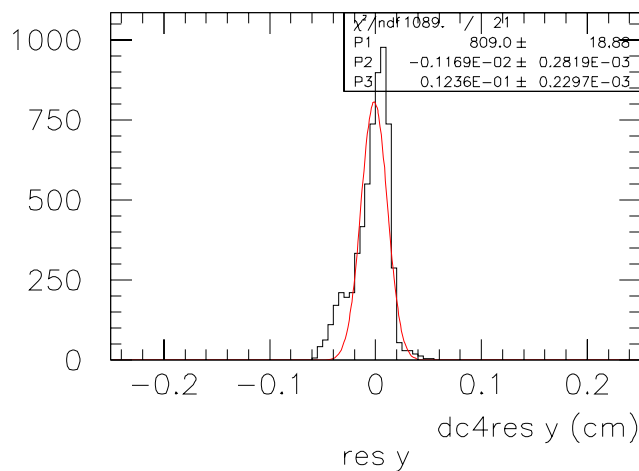
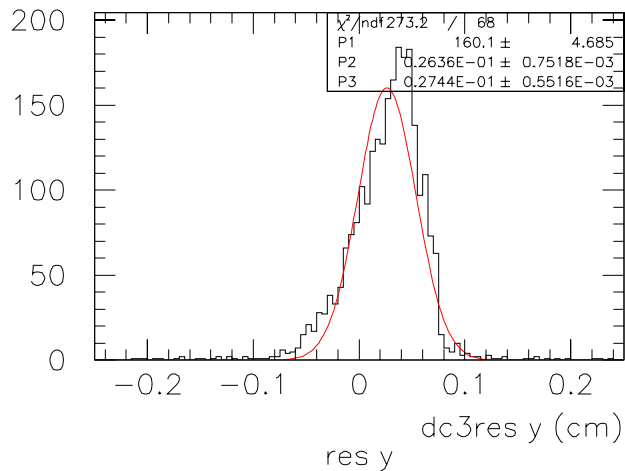
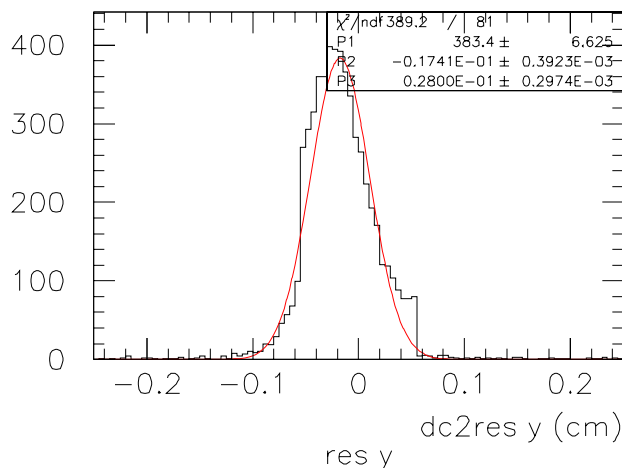
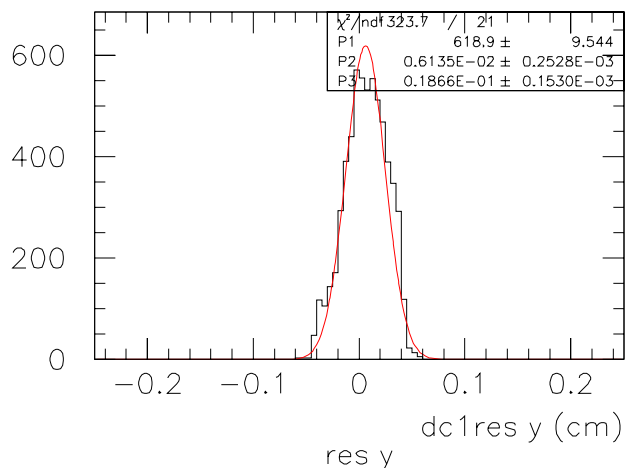
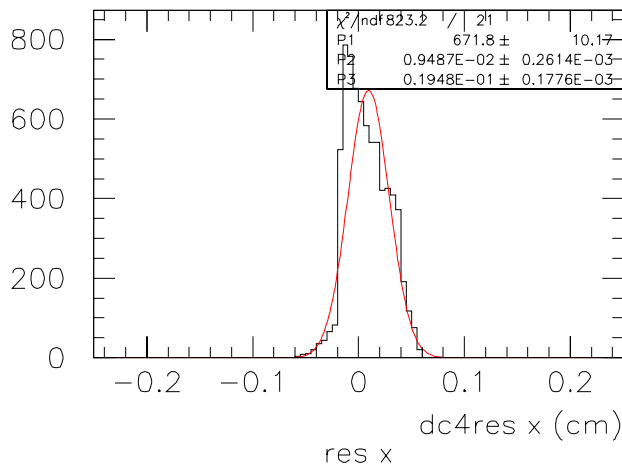
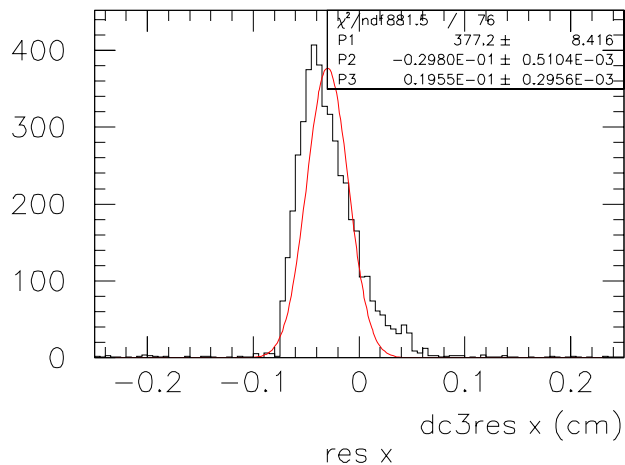
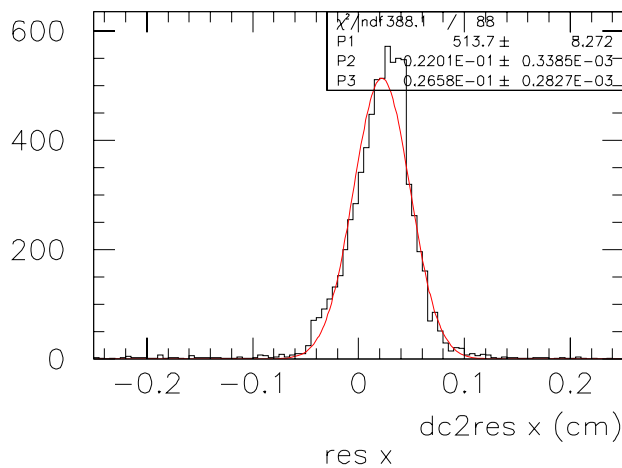
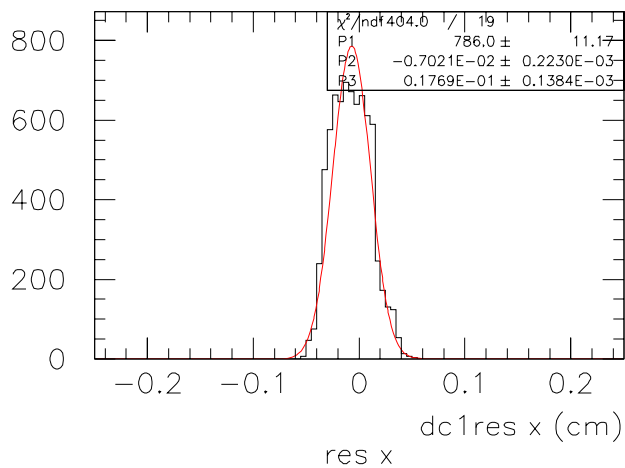
run00034inc slit 20mm



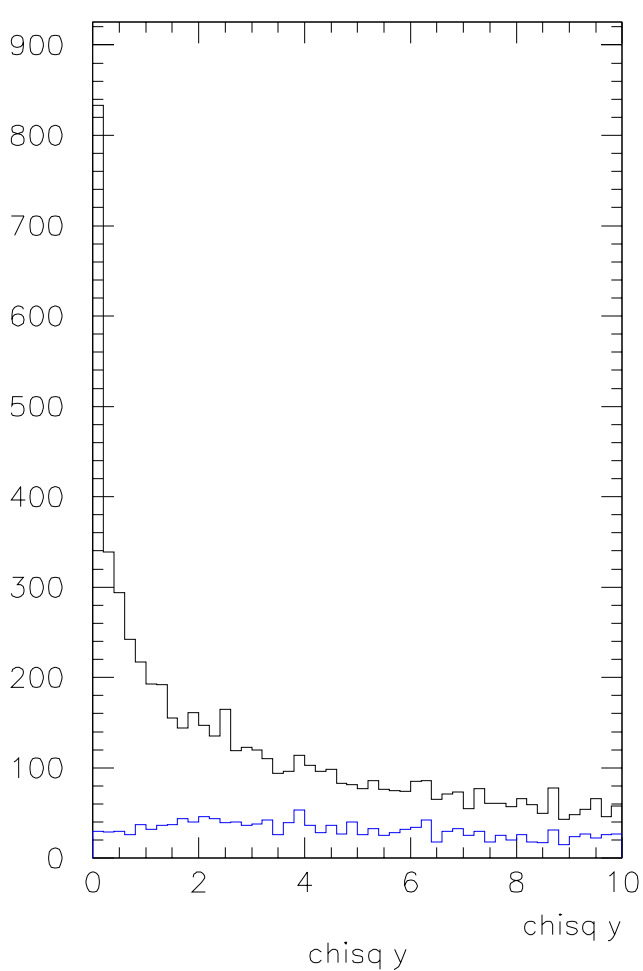
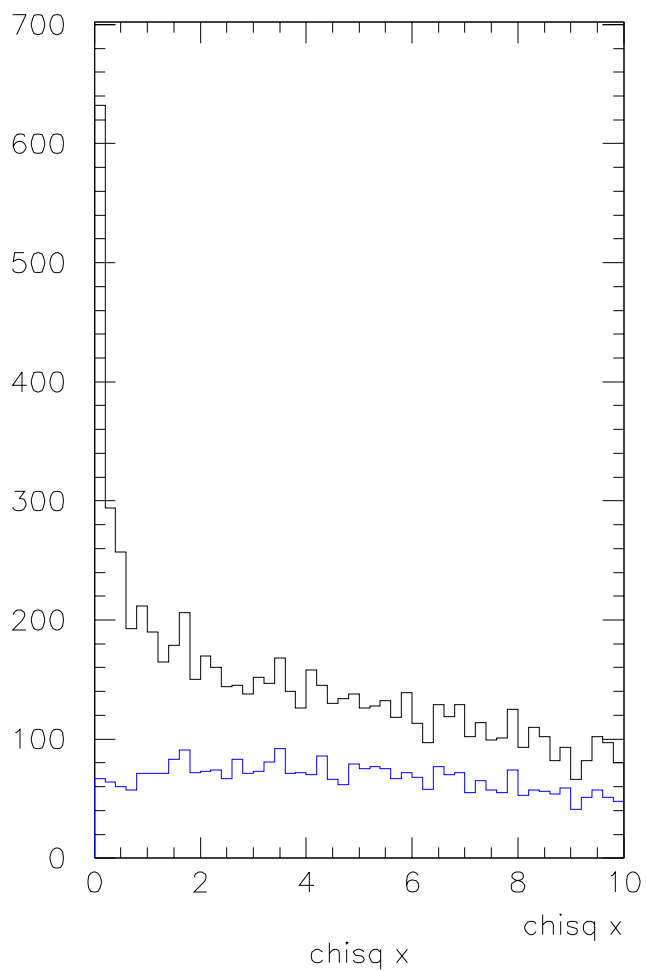
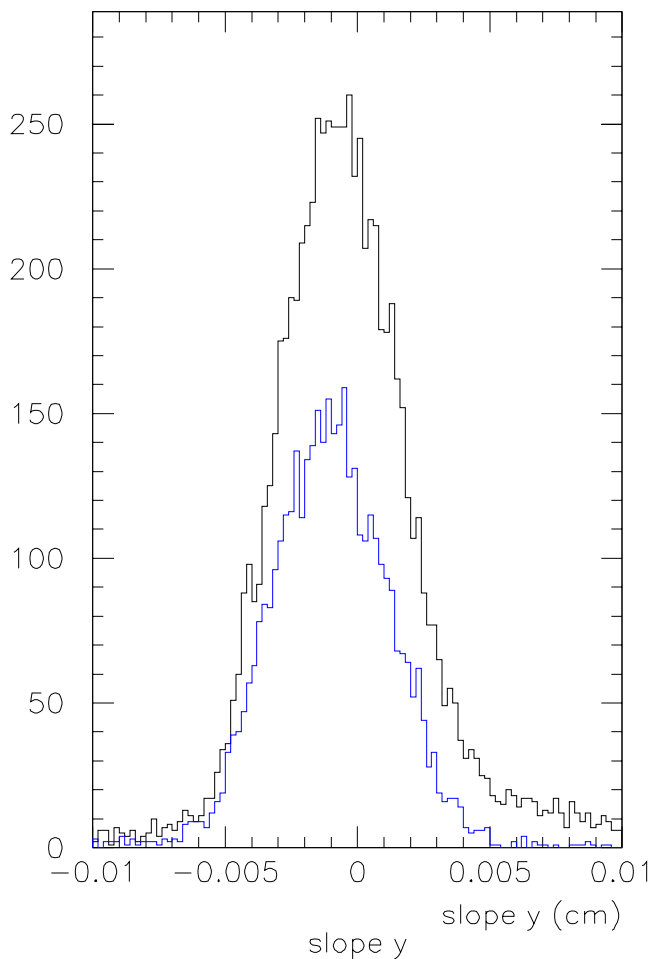
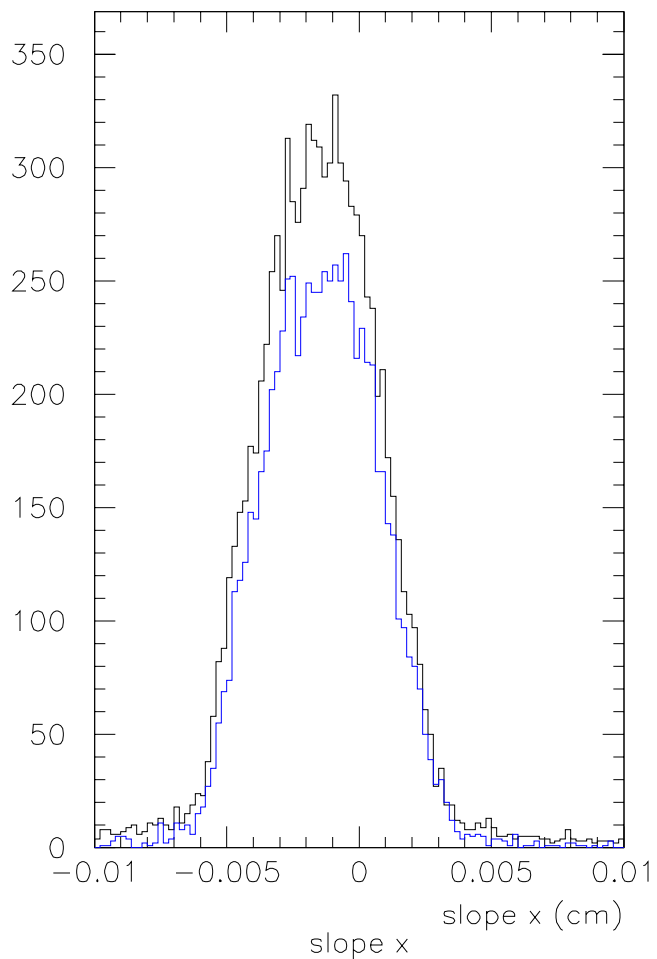
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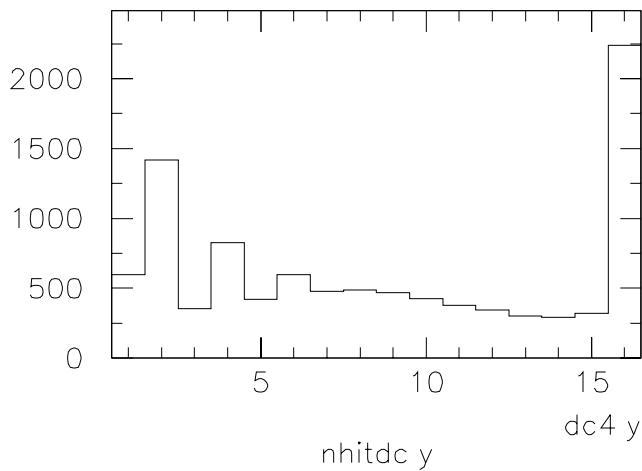
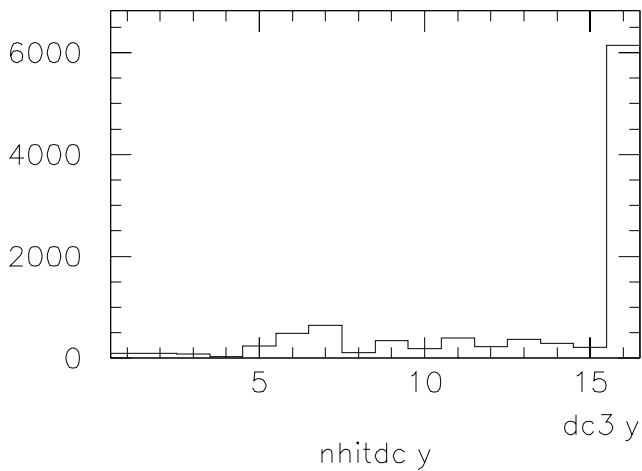
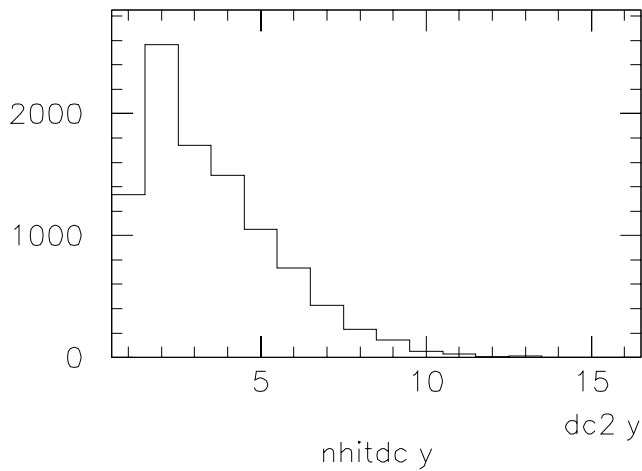
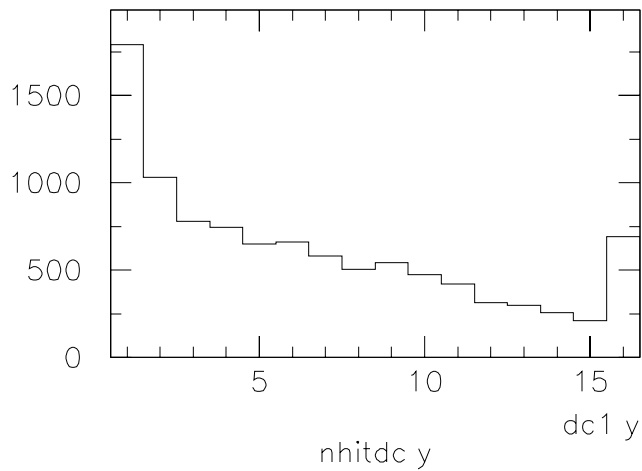
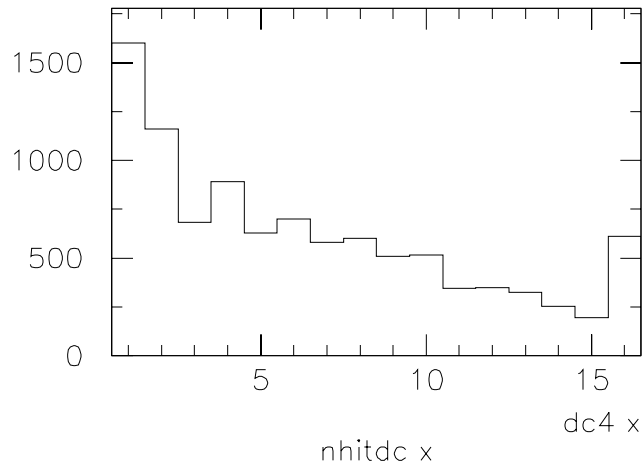
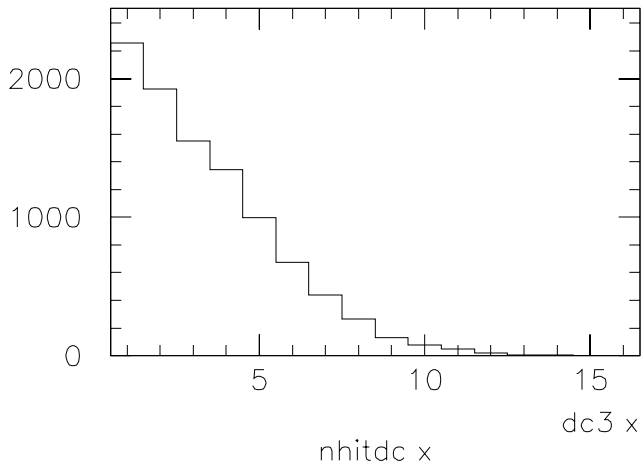
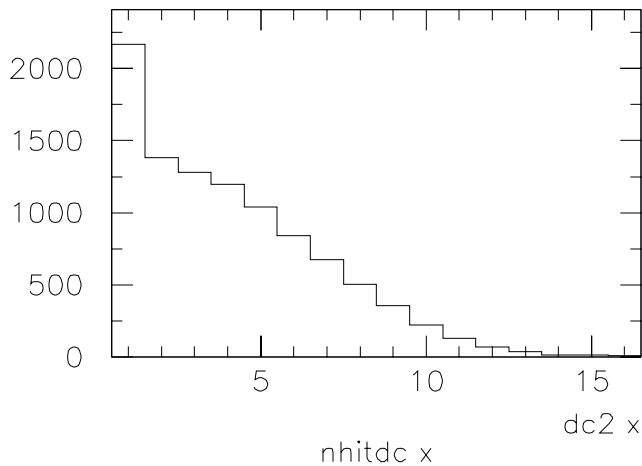
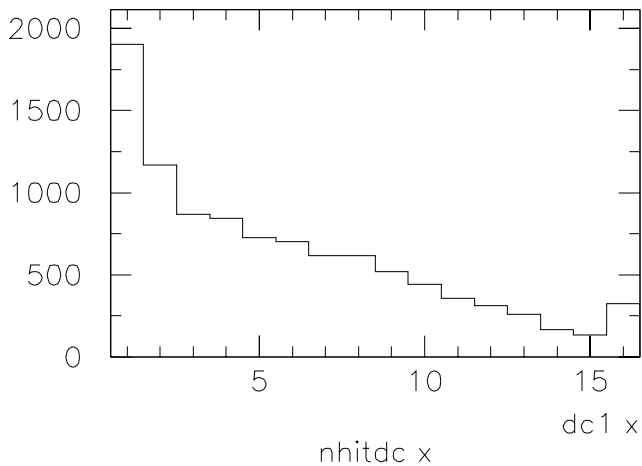
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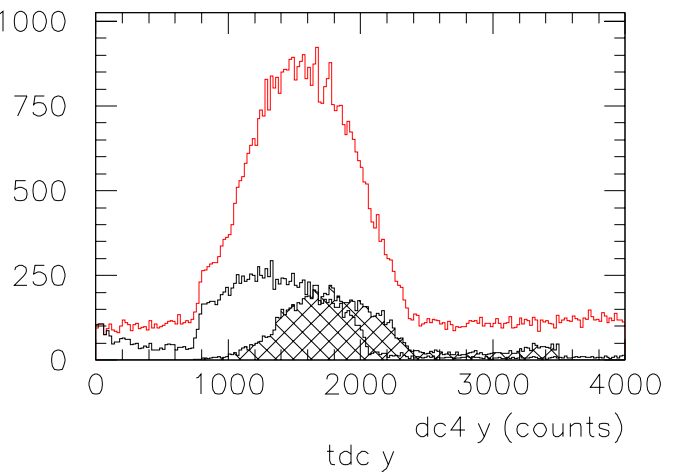
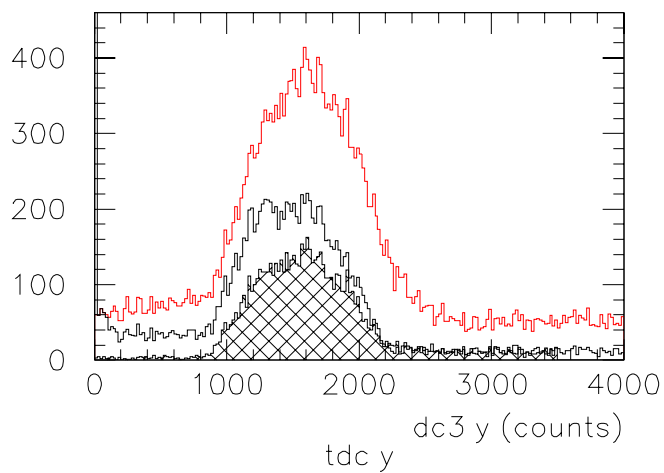
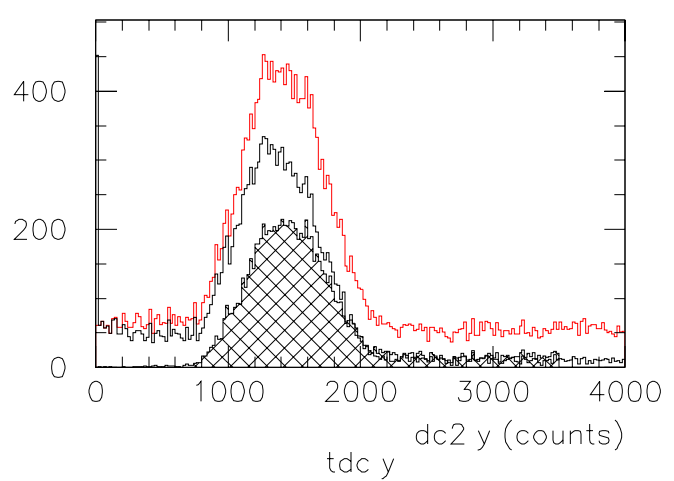
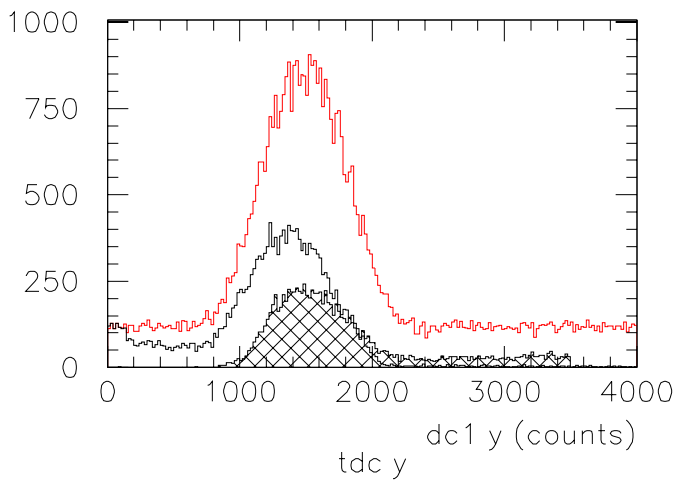
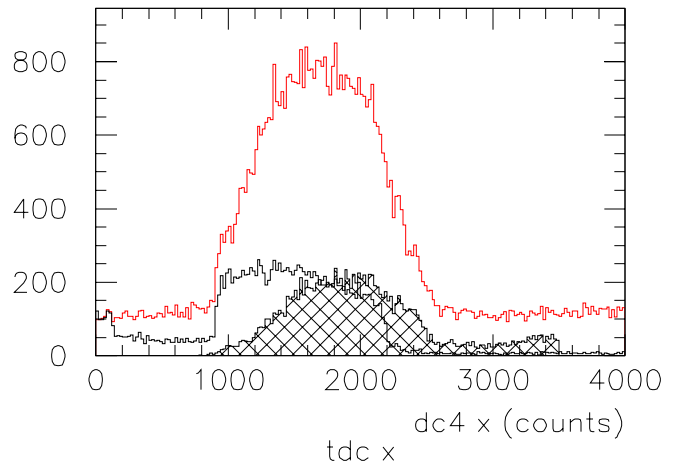
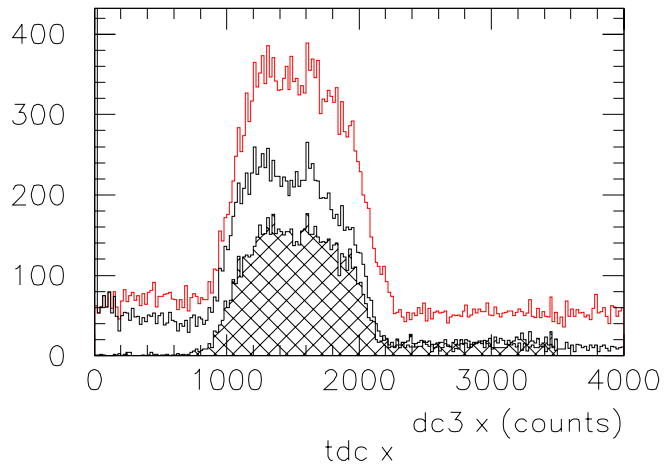
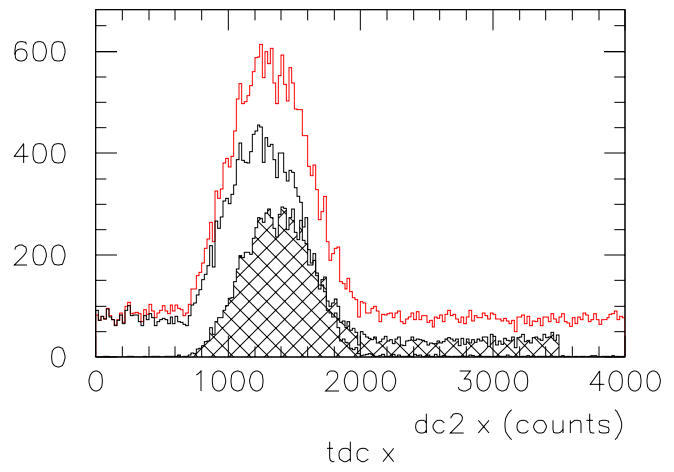
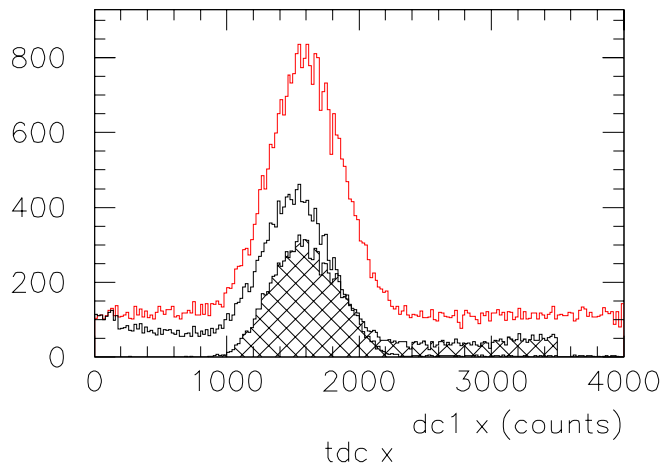
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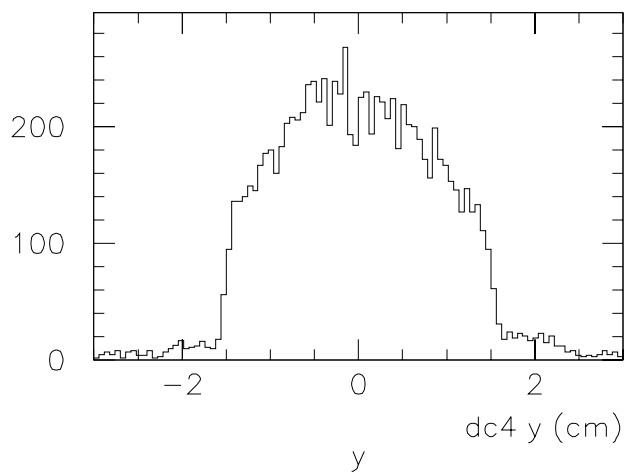
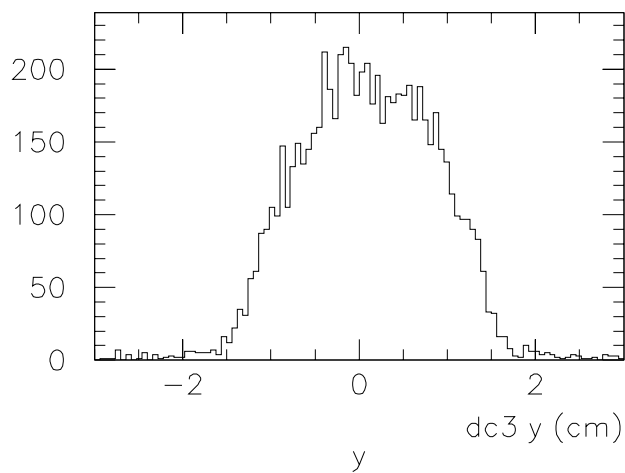
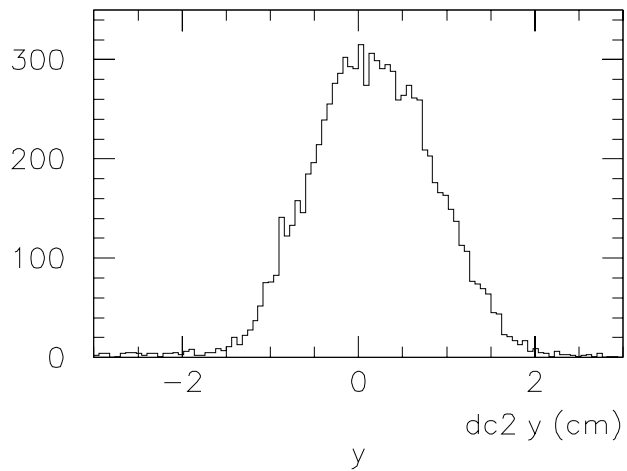
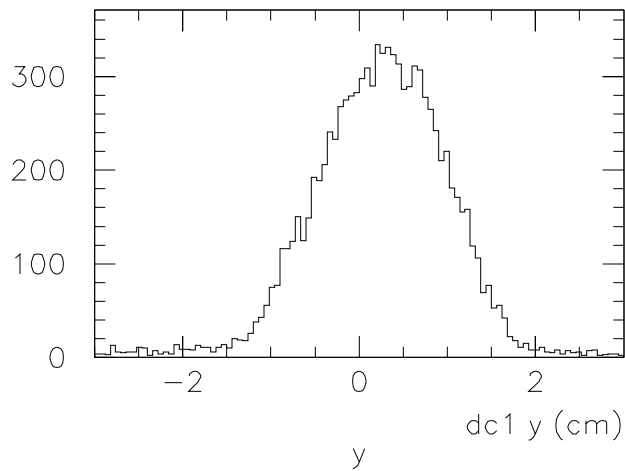
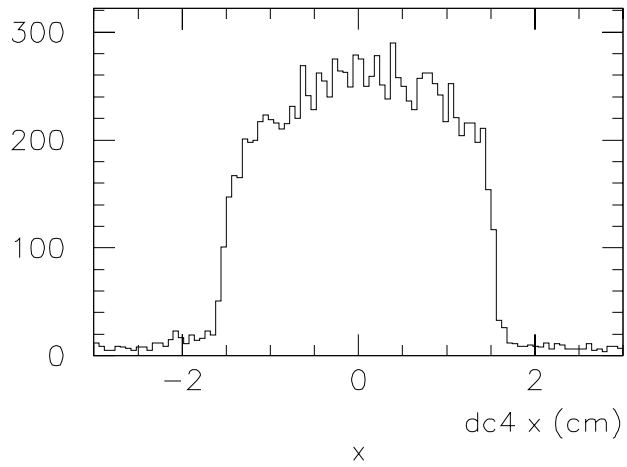
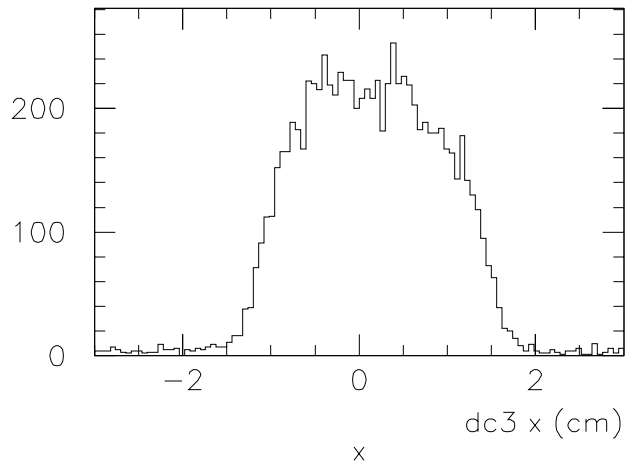
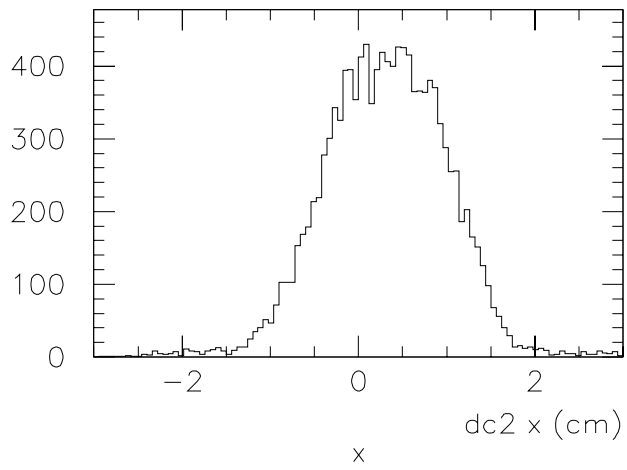
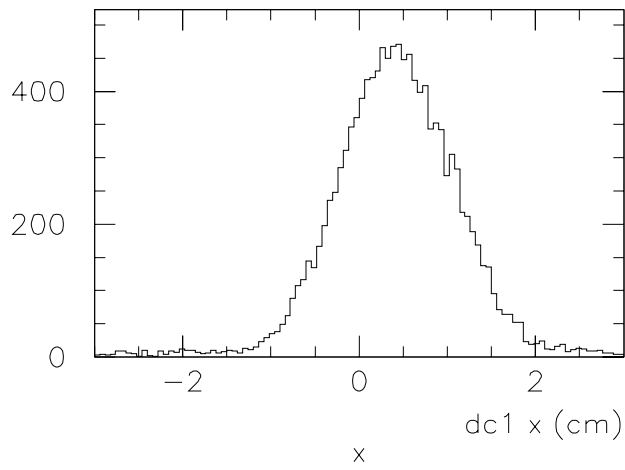
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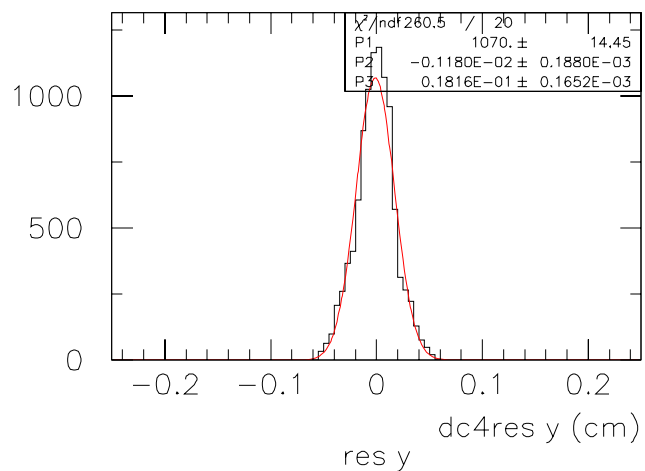
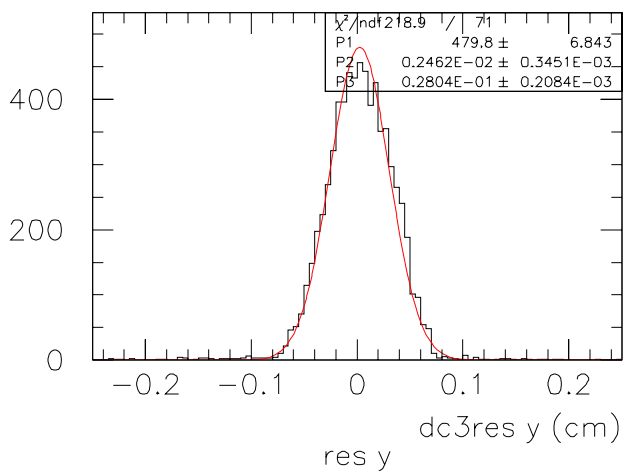
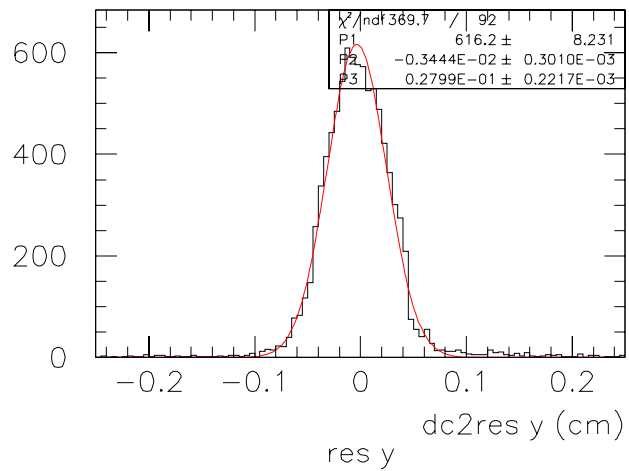
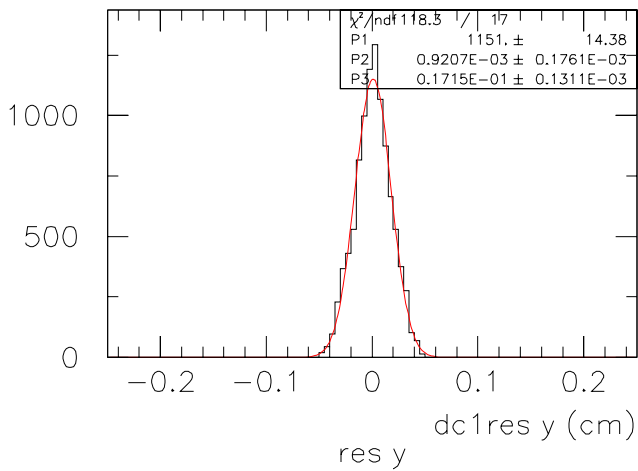
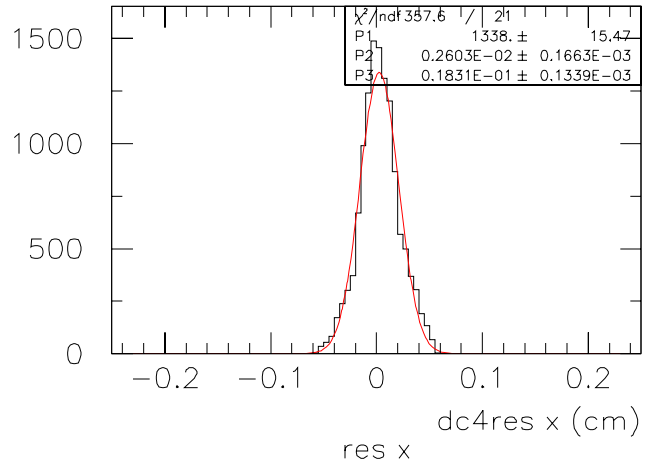
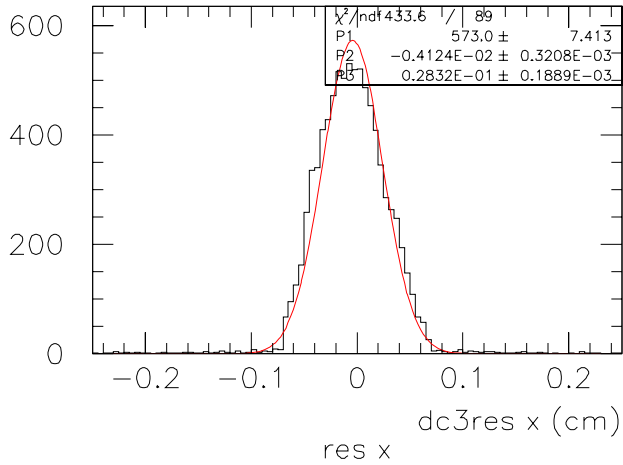
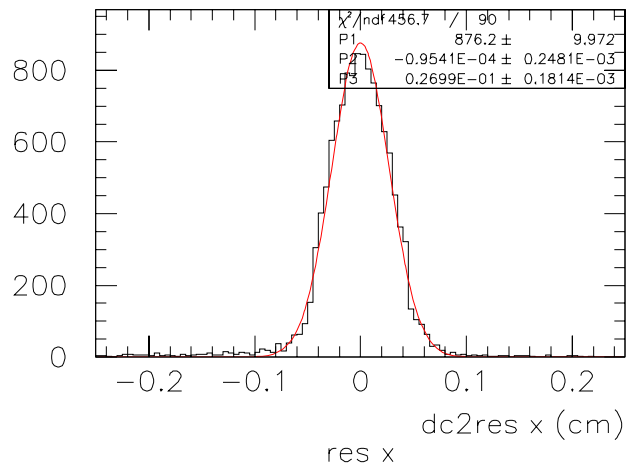
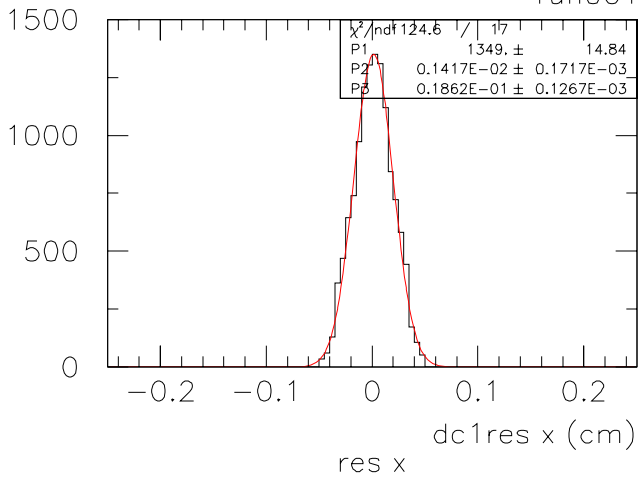
run00186mu slit 20mm



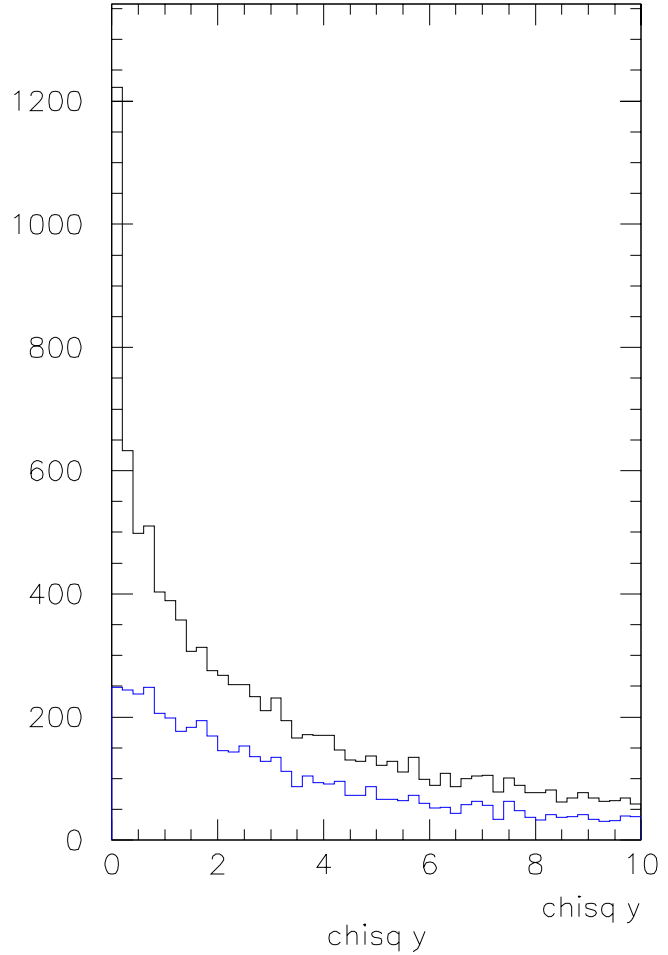
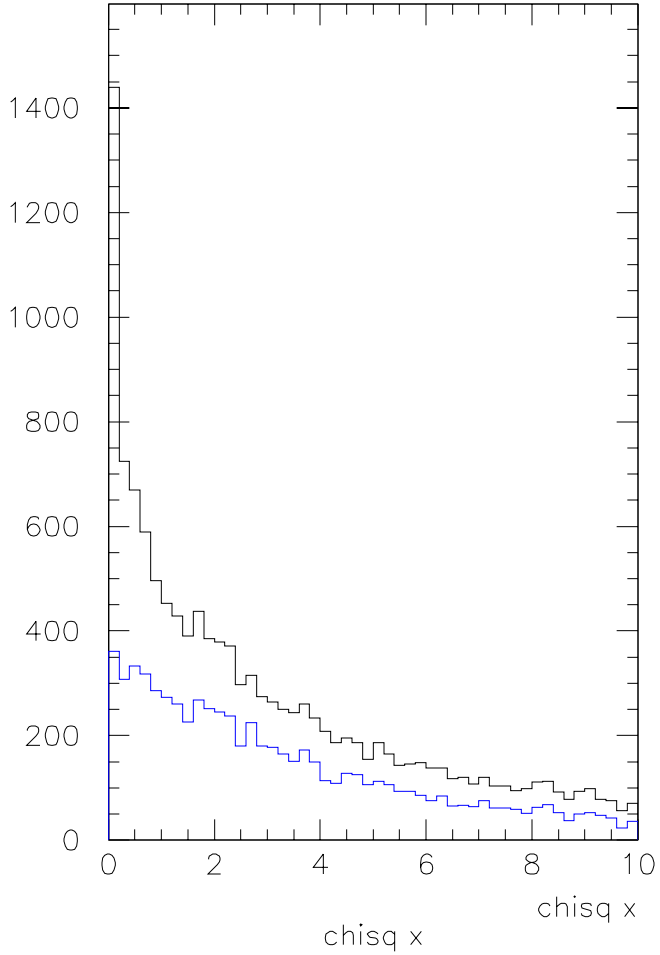
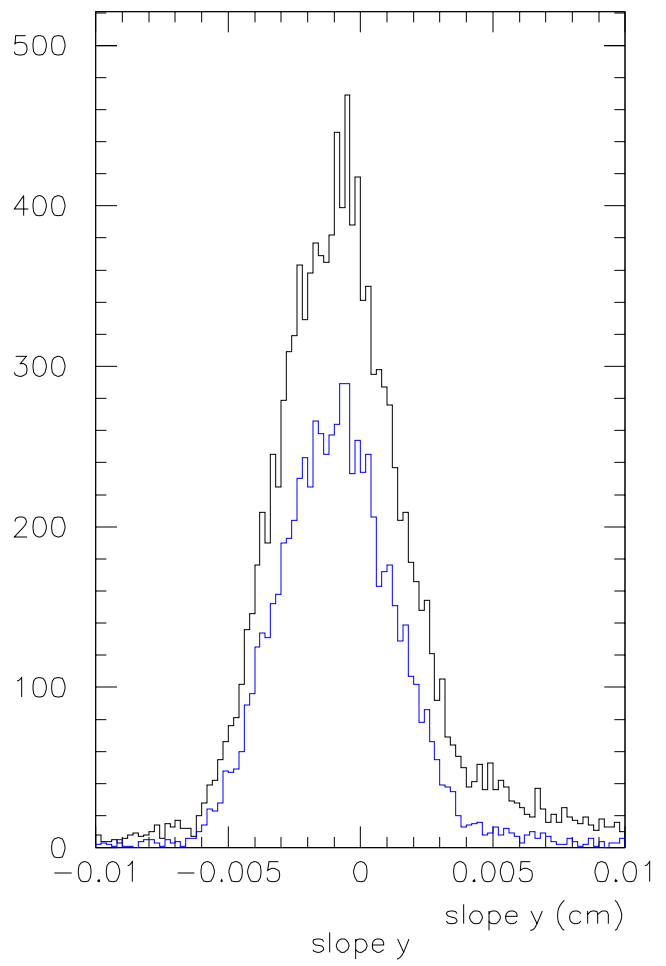
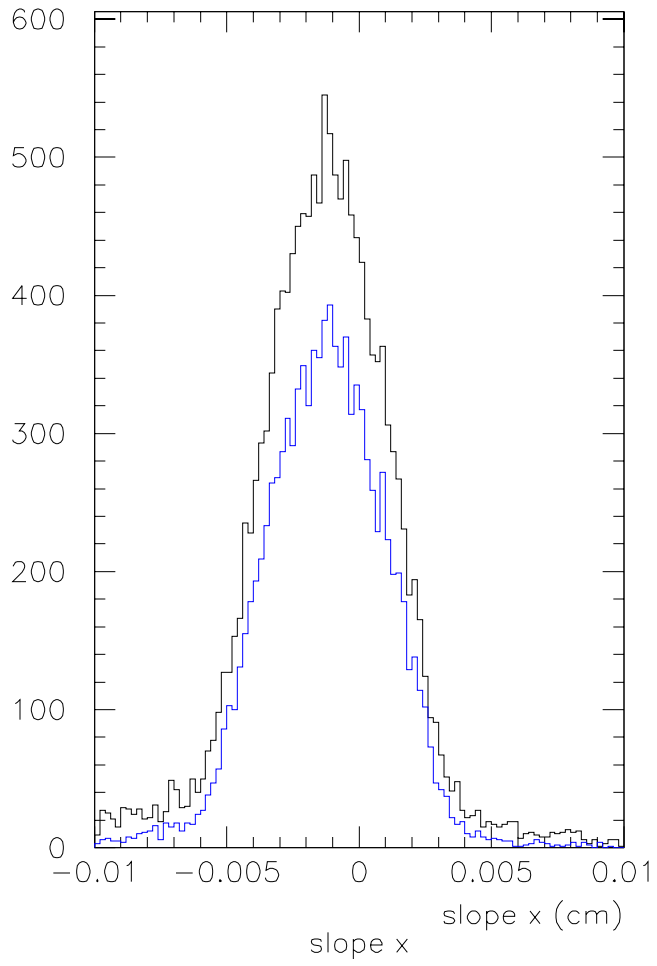
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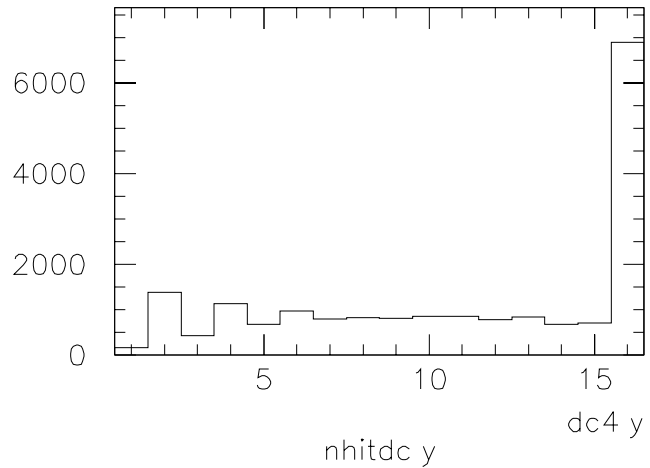
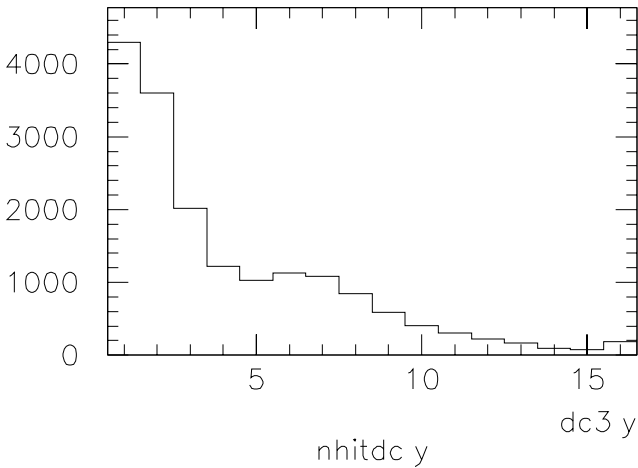
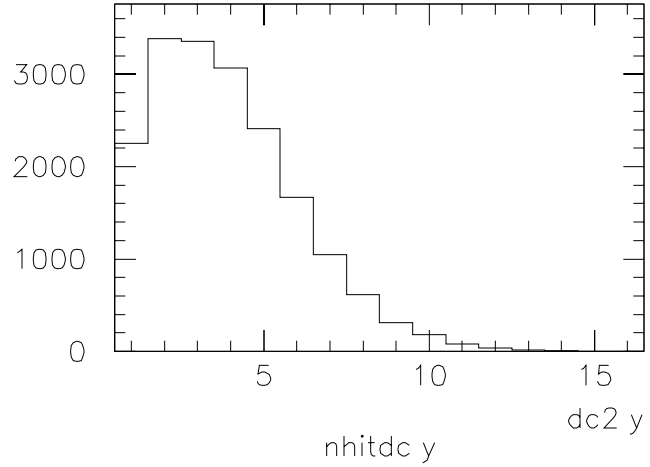
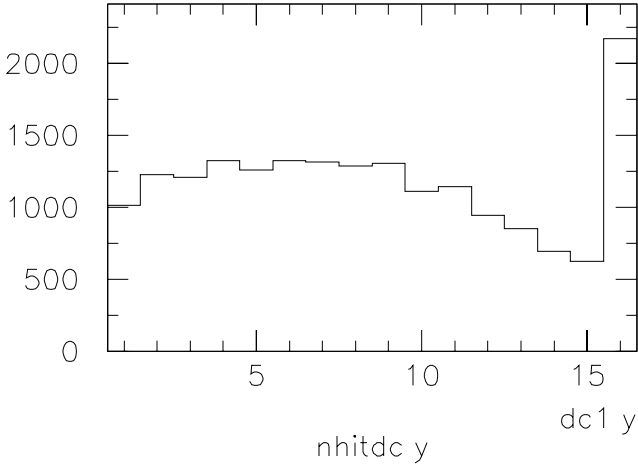
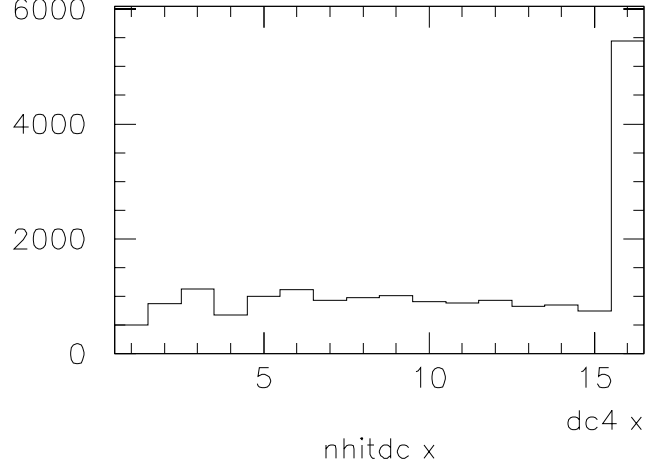
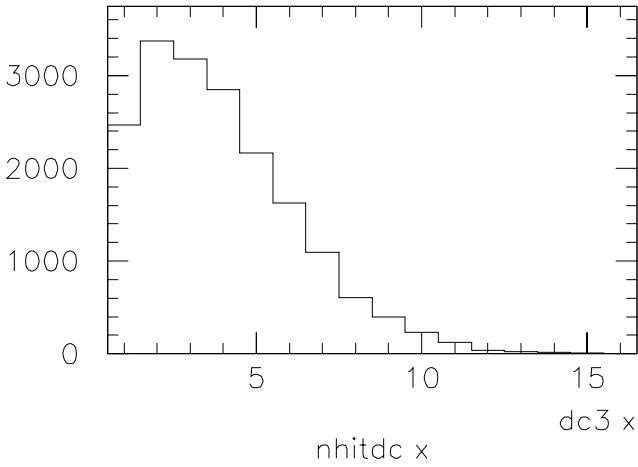
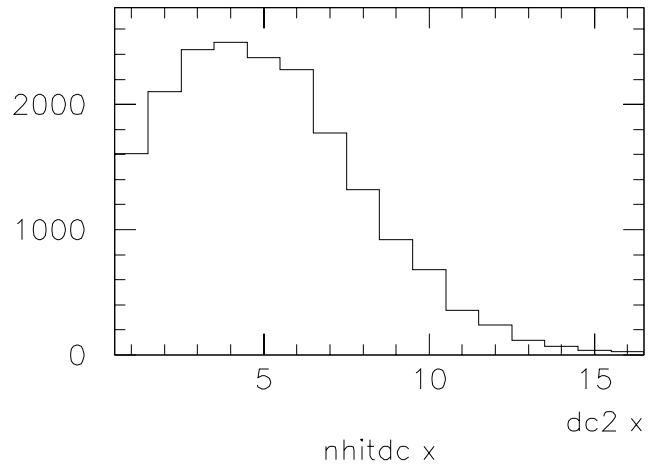
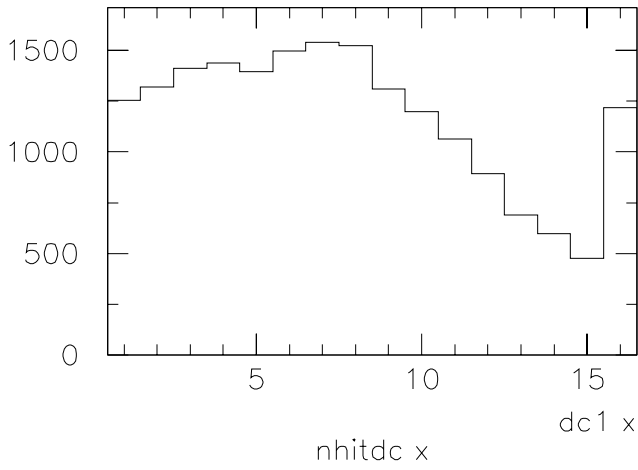
run00186mu slit 20mm



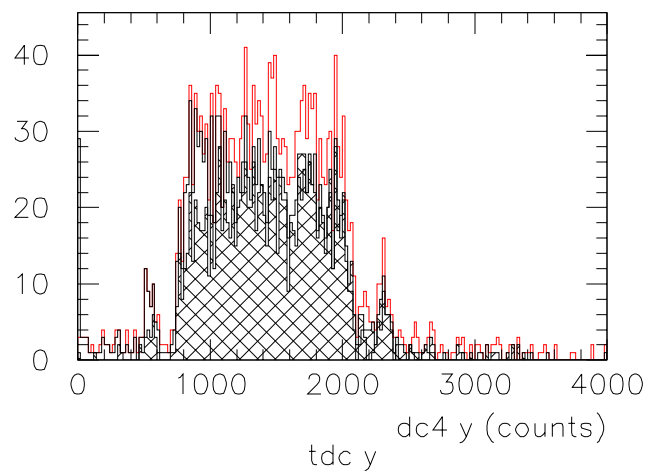
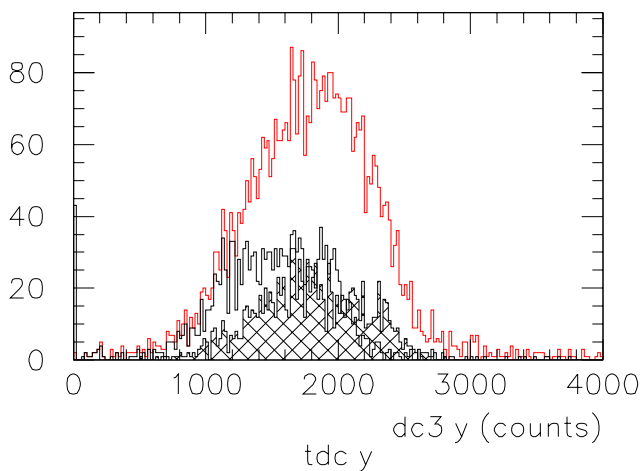
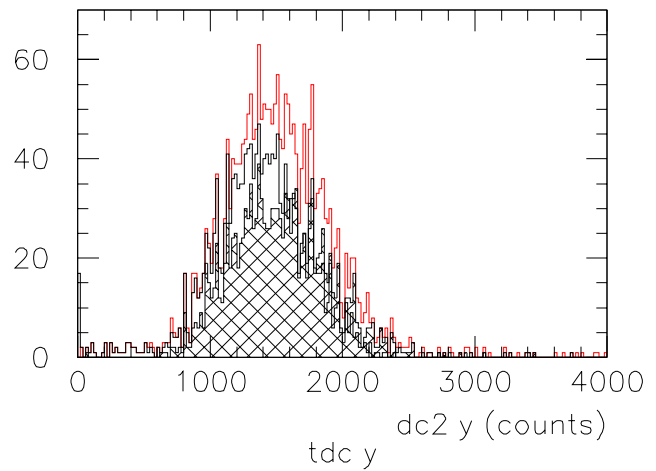
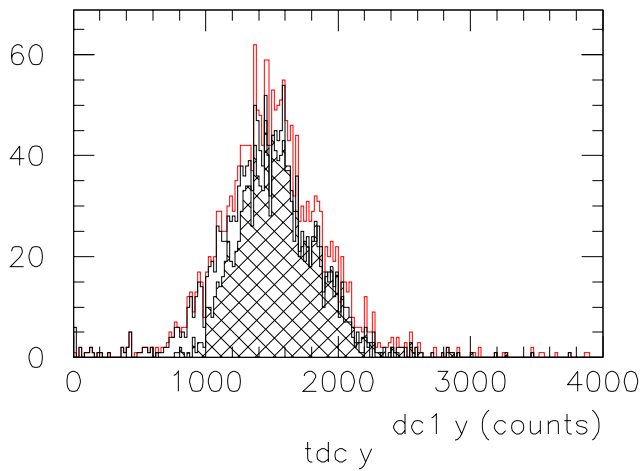
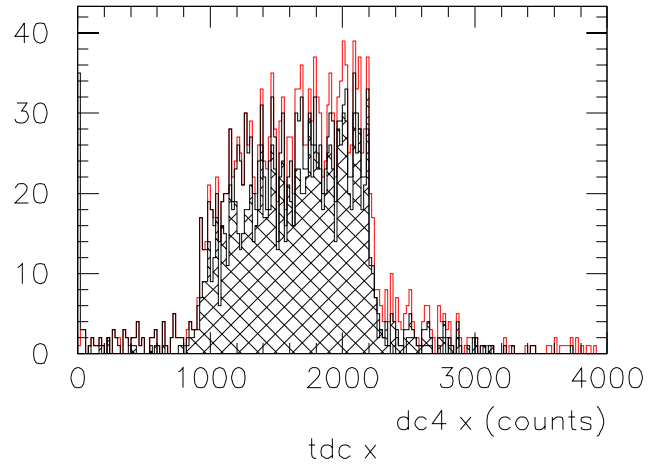
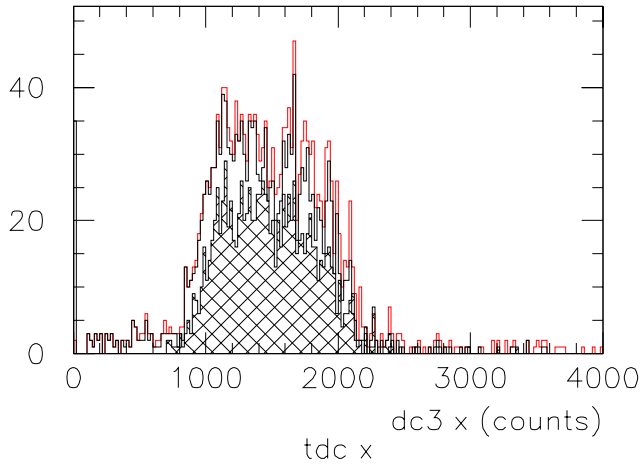
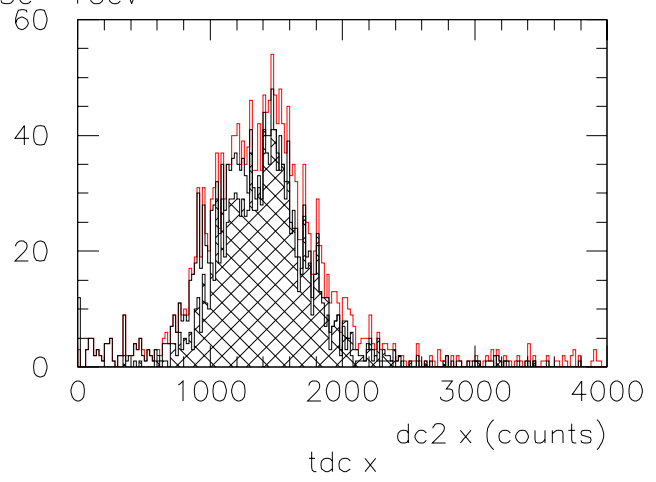
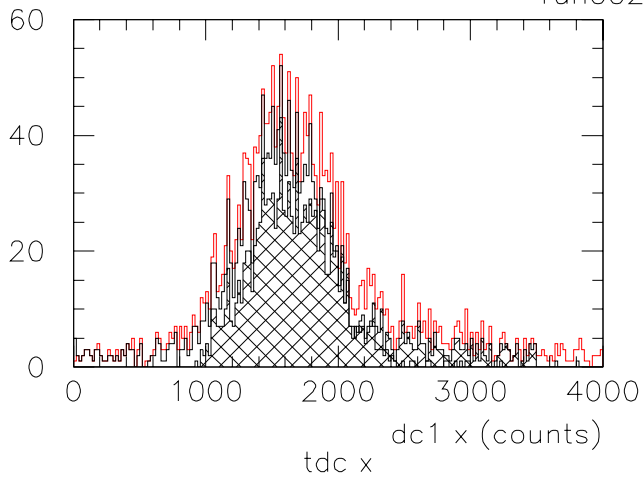
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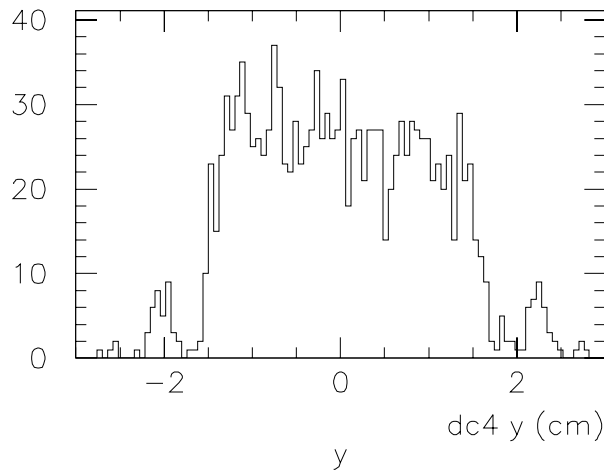
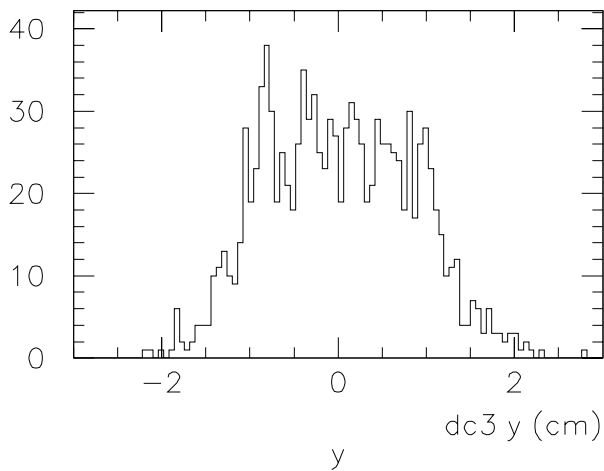
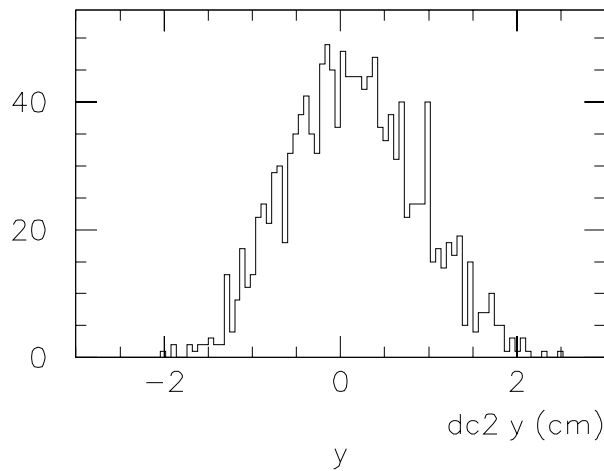
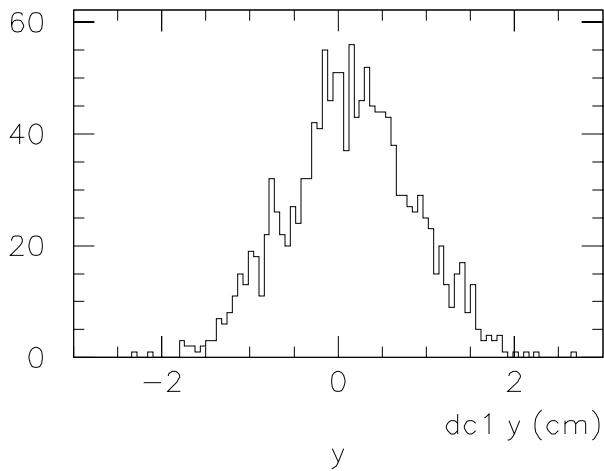
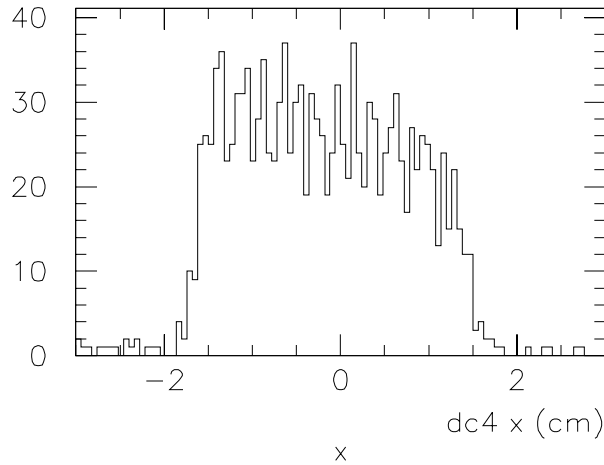
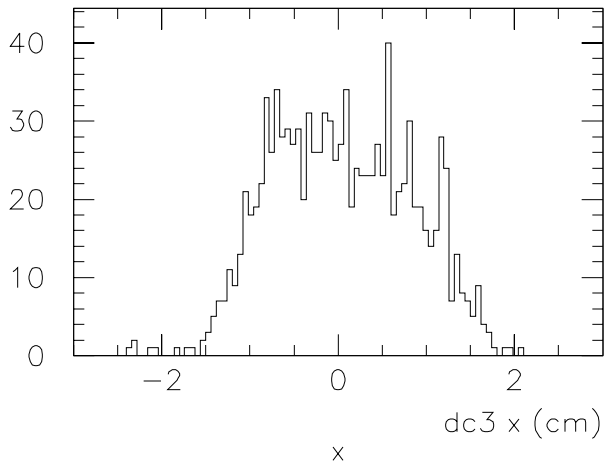
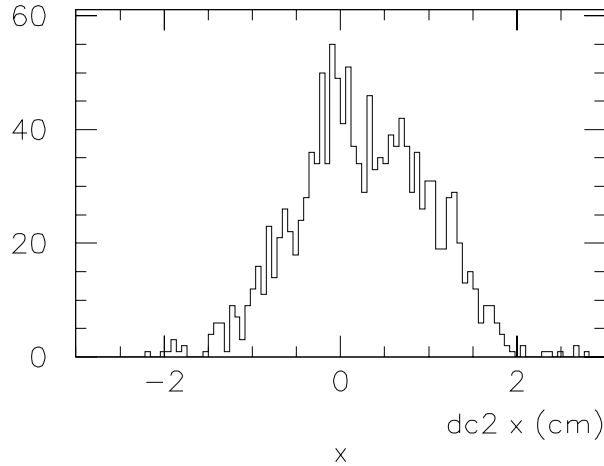
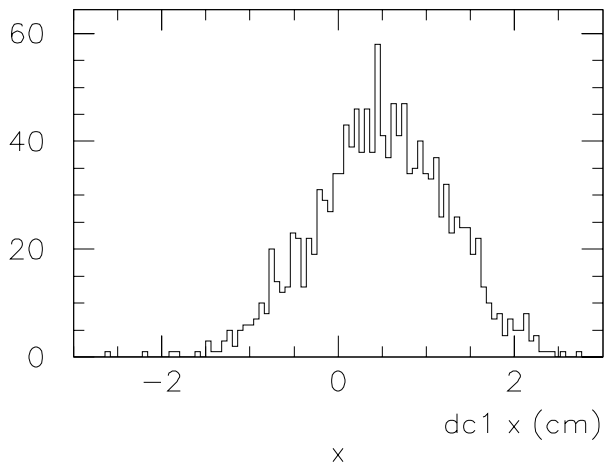


run00186mu slit 20mm

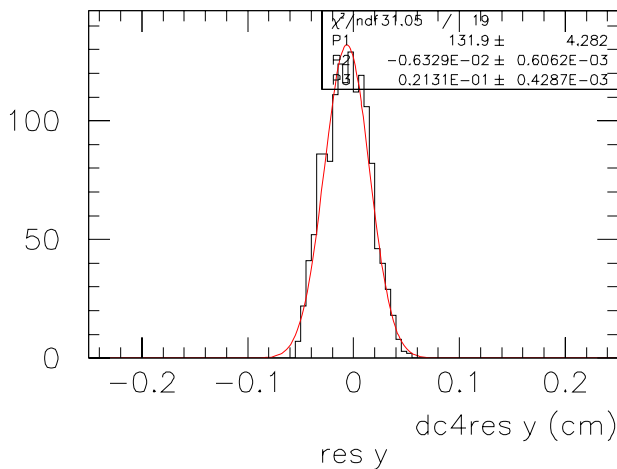
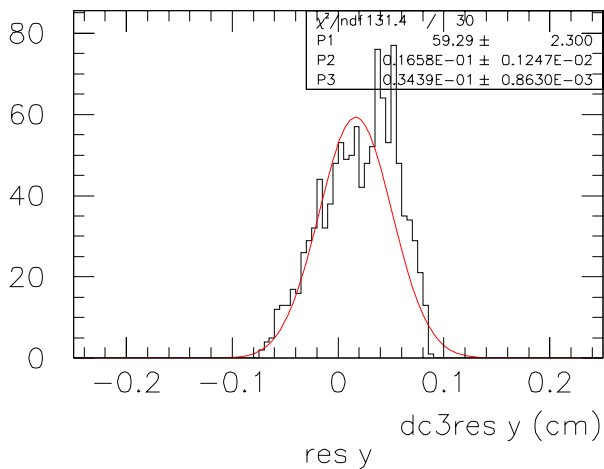
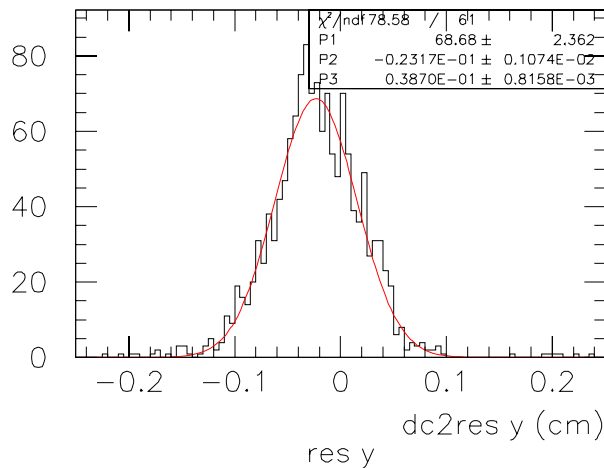
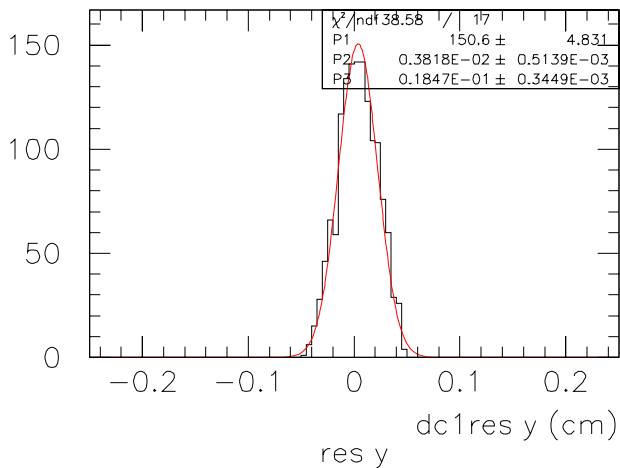
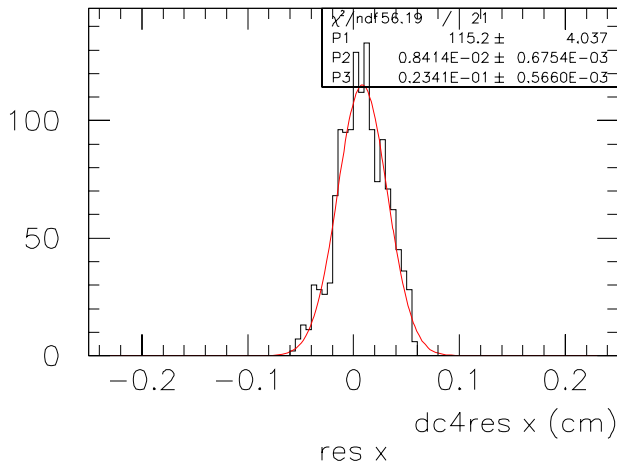
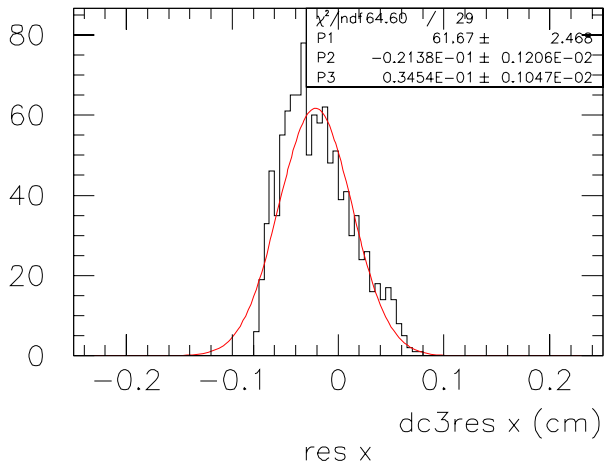
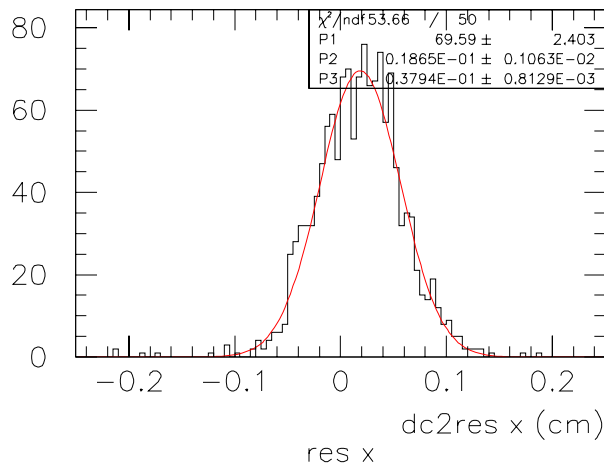
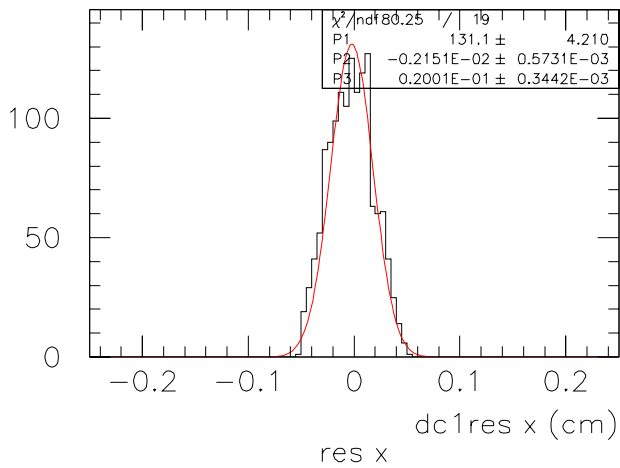


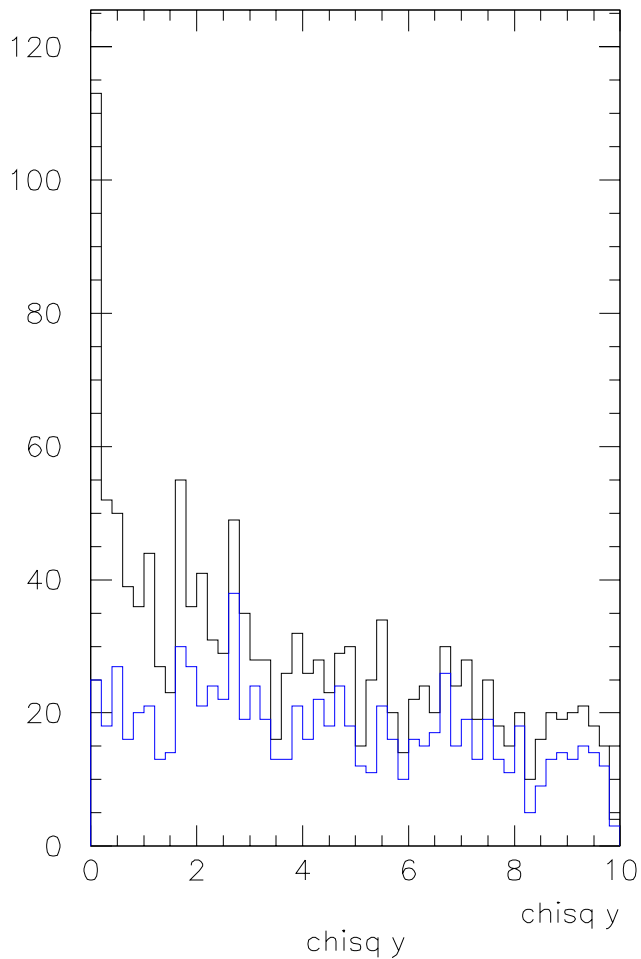
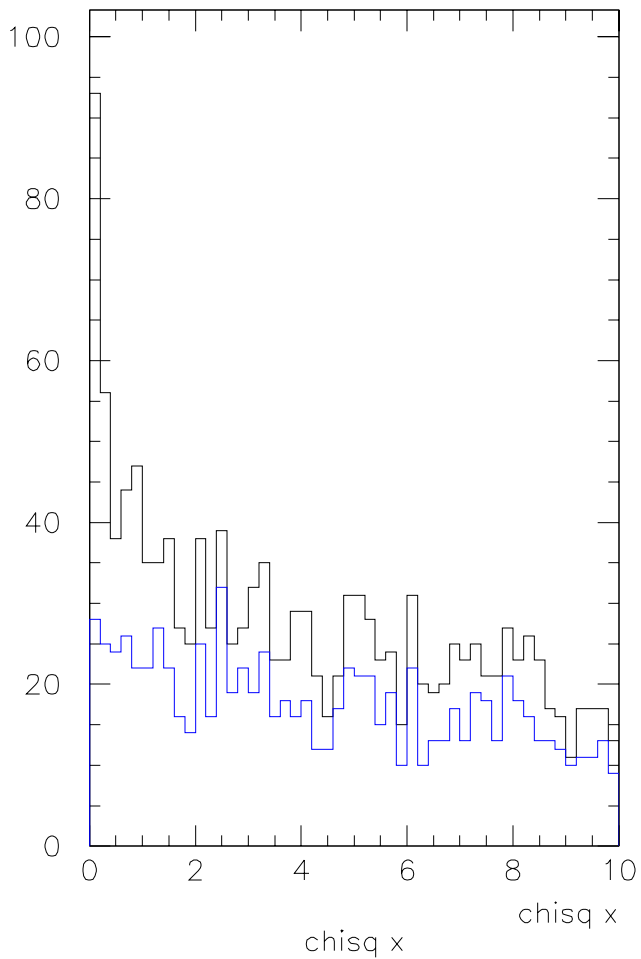
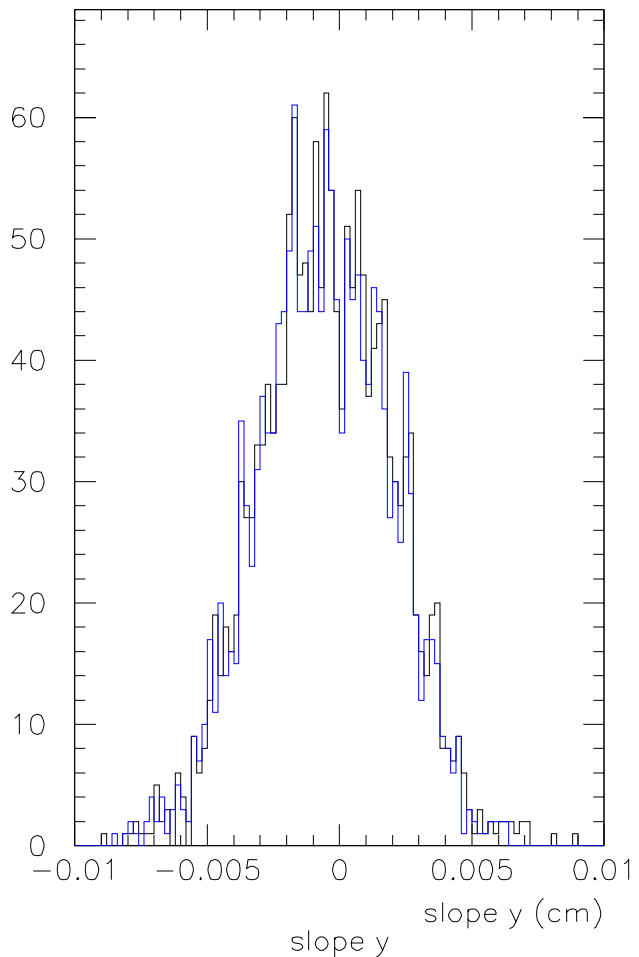
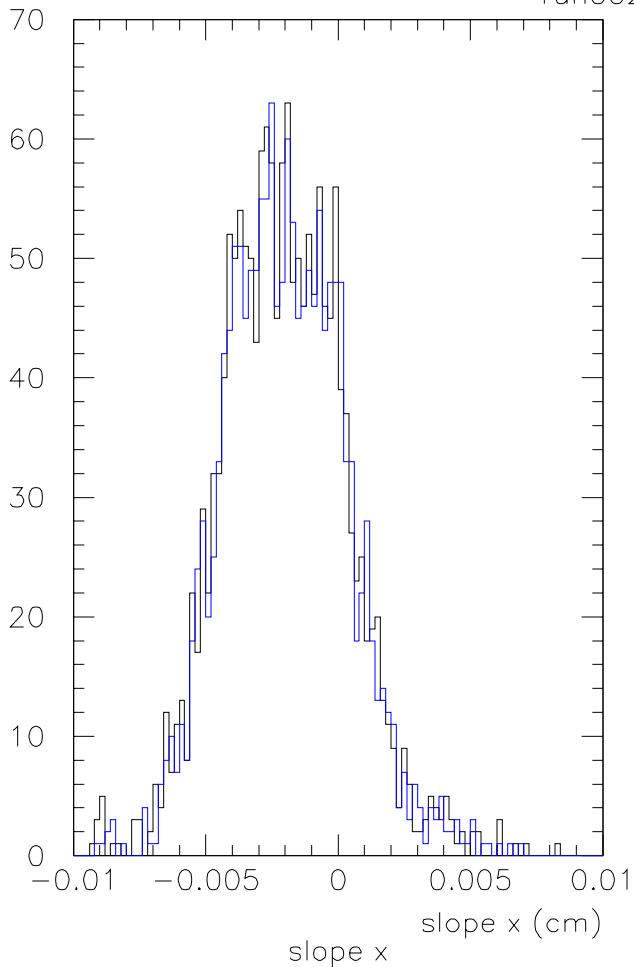
run00253e - 1GeV



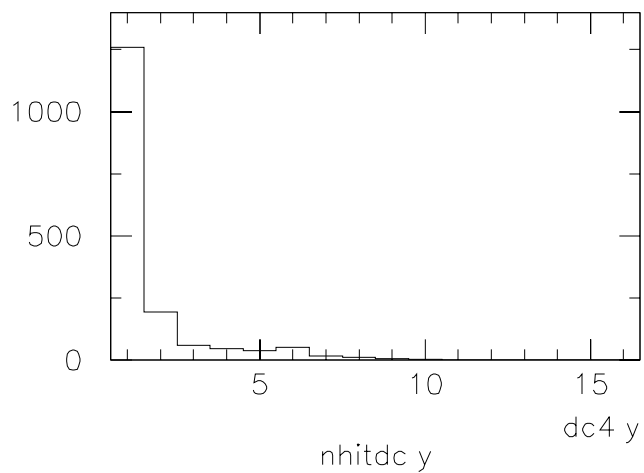
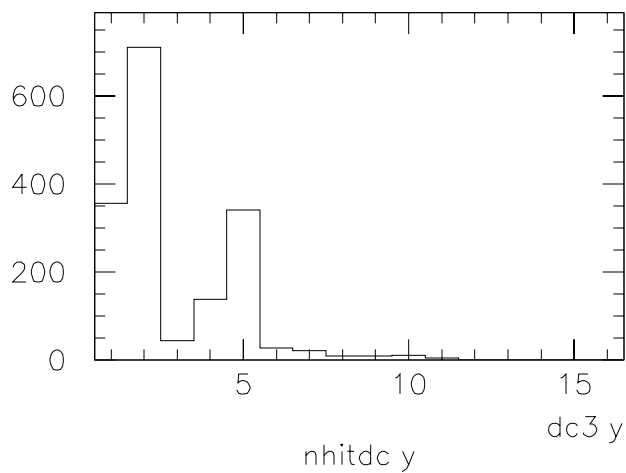
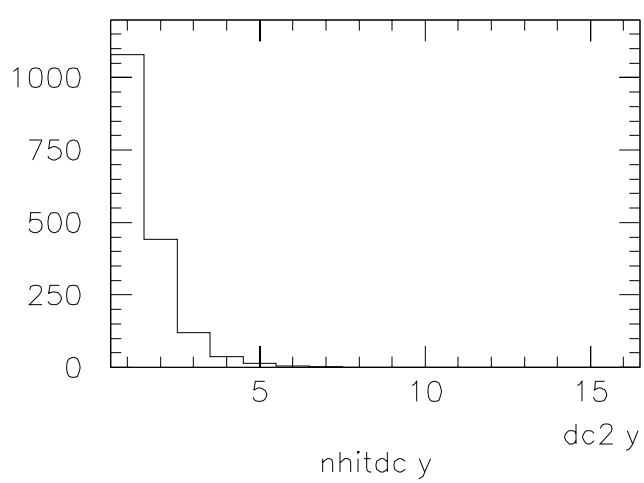
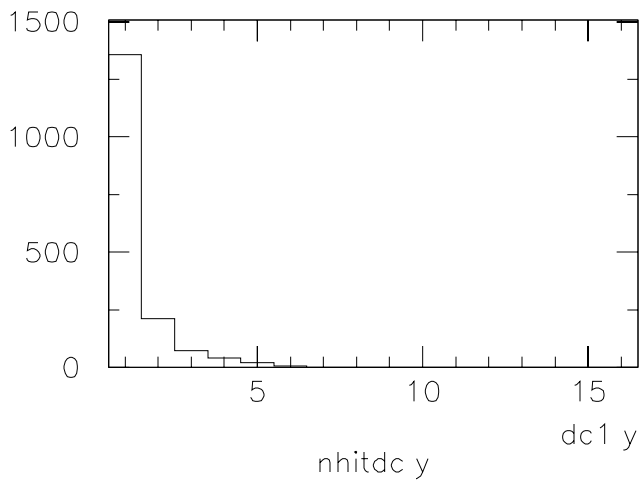
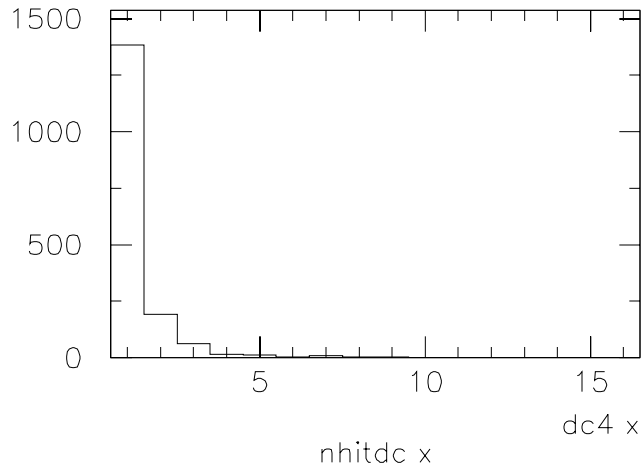
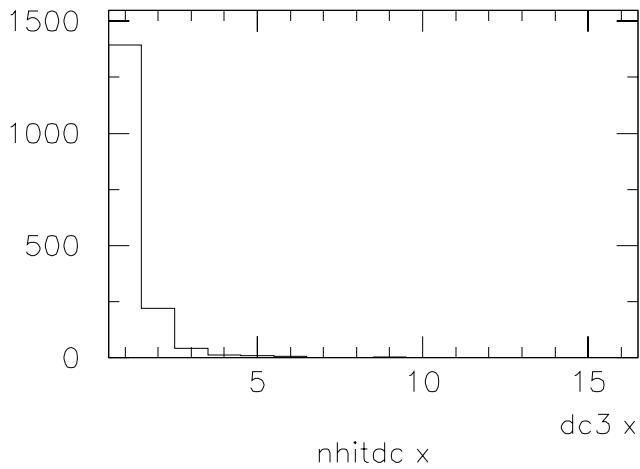
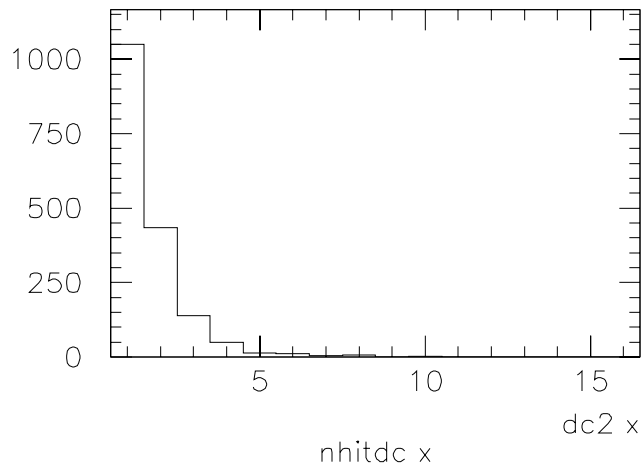
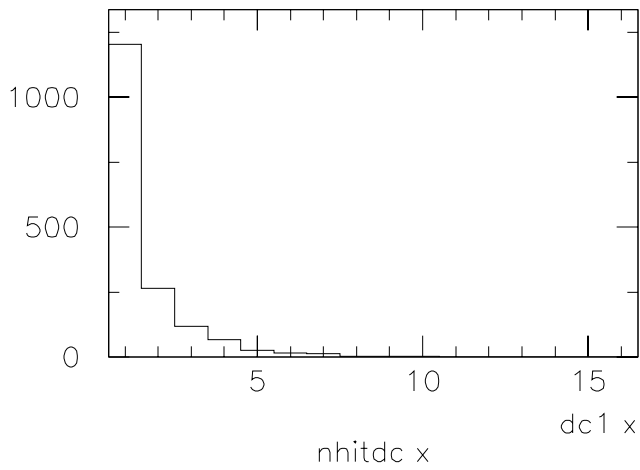


run00253e - 1GeV

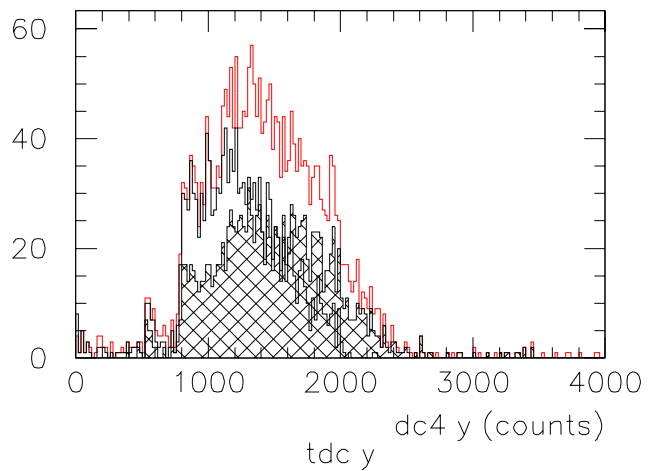
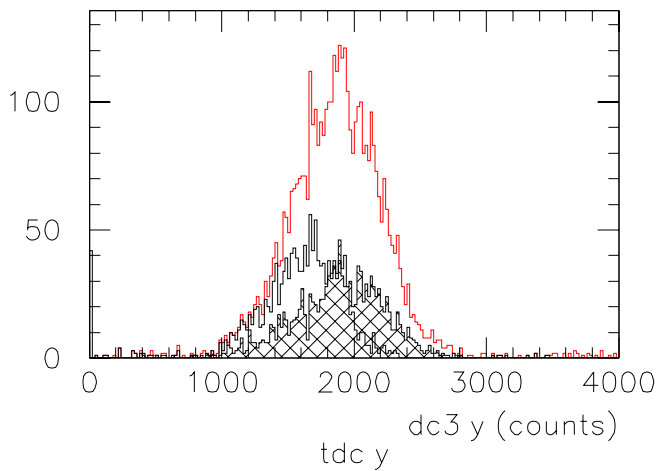
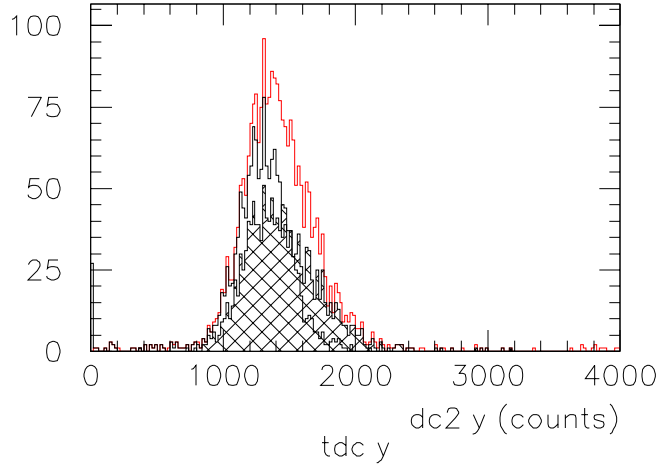
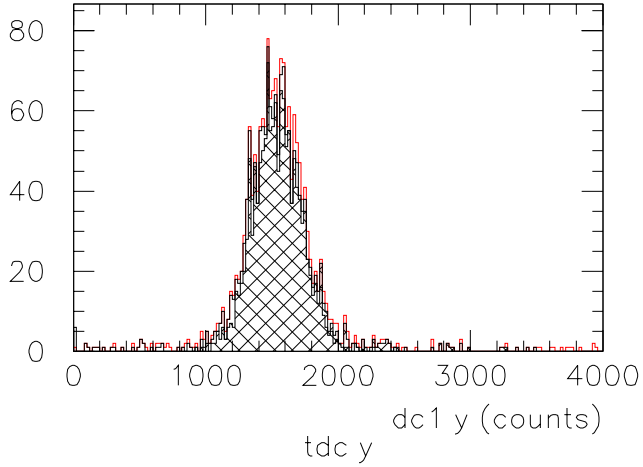
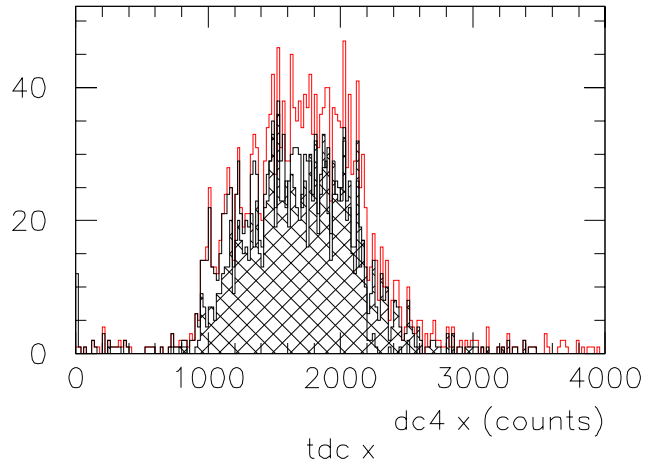
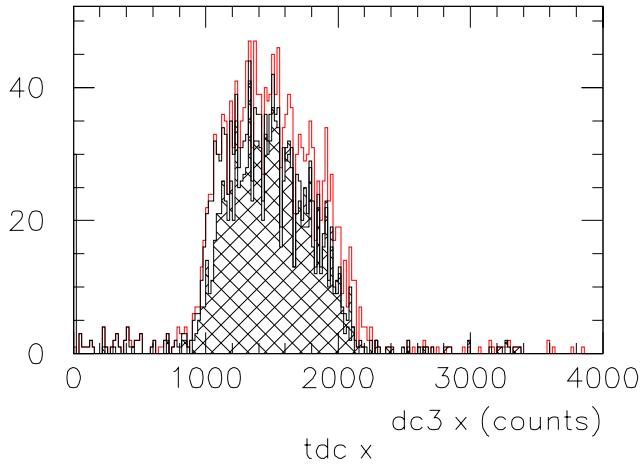
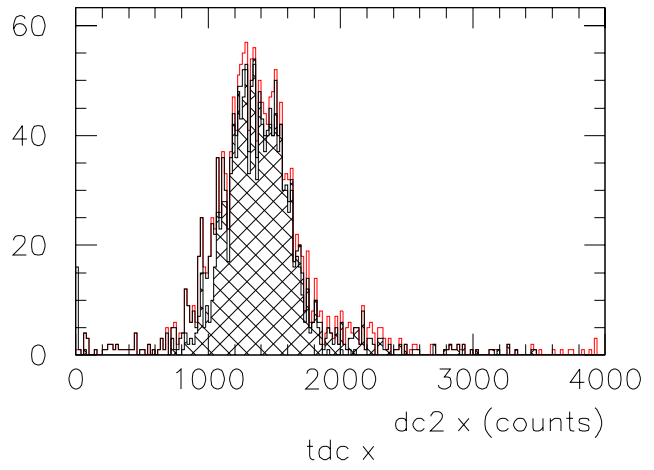
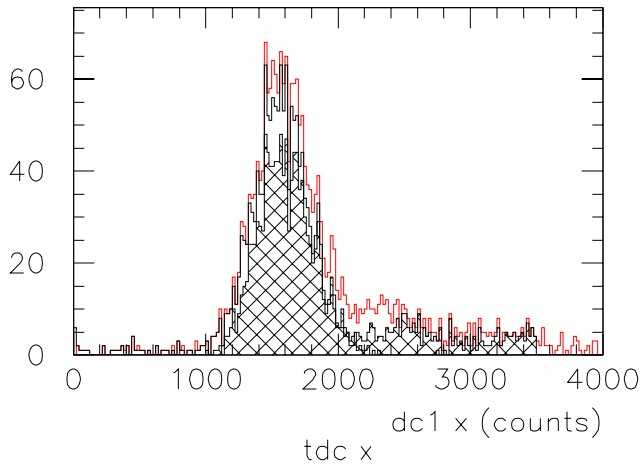


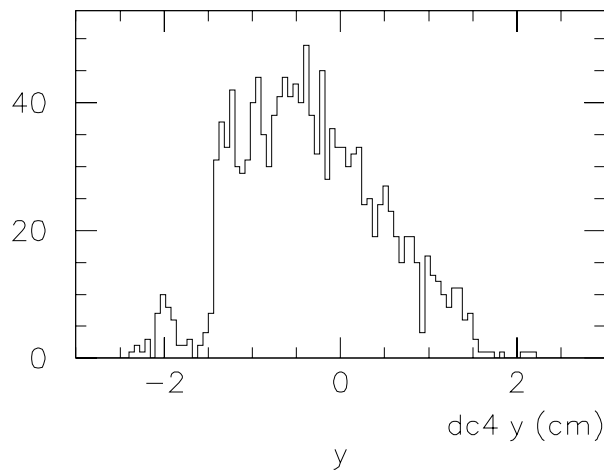
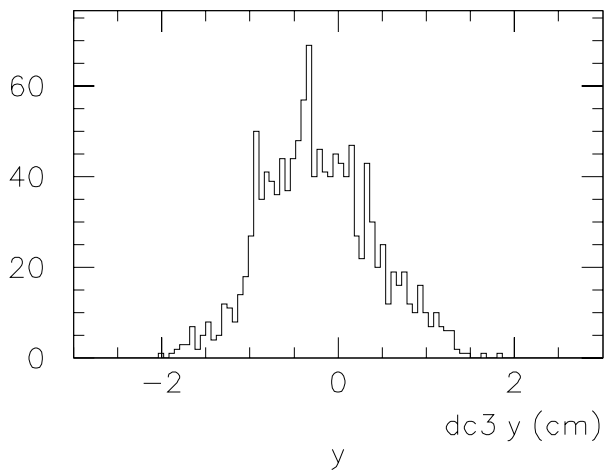
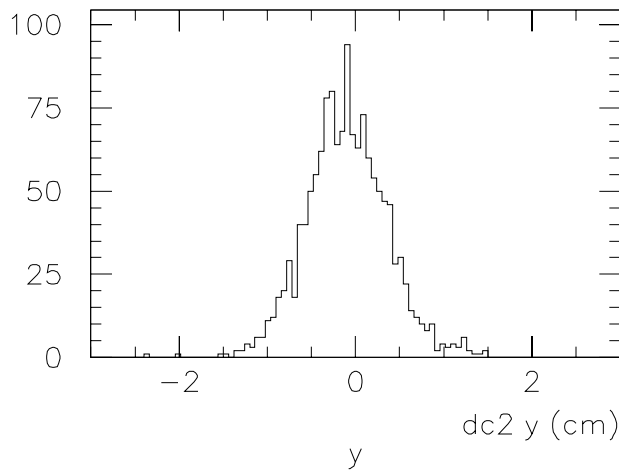
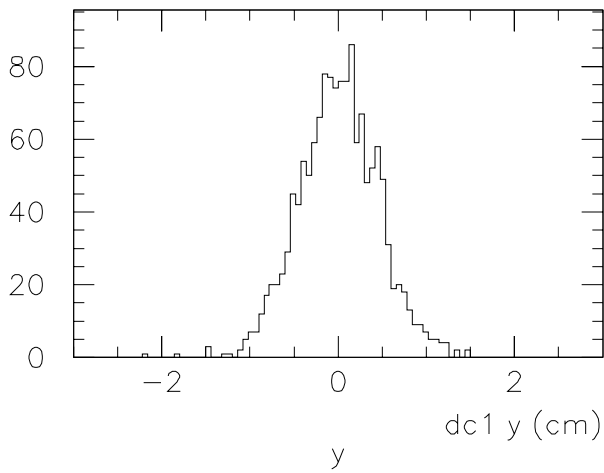
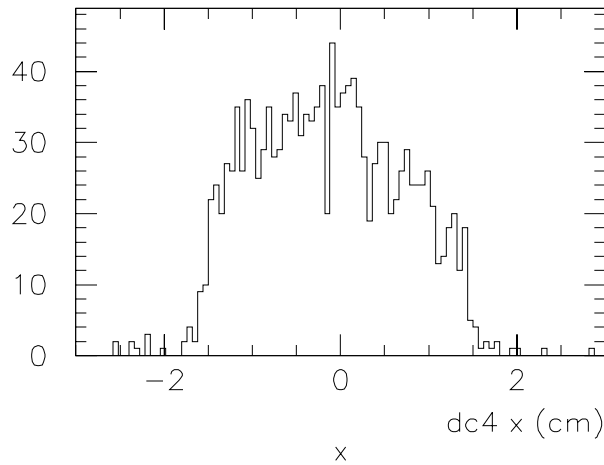
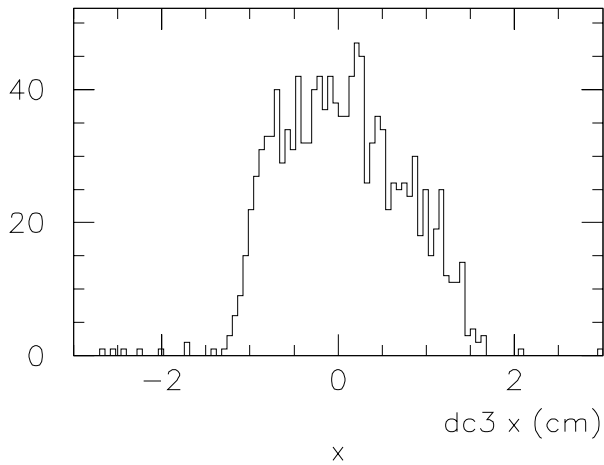
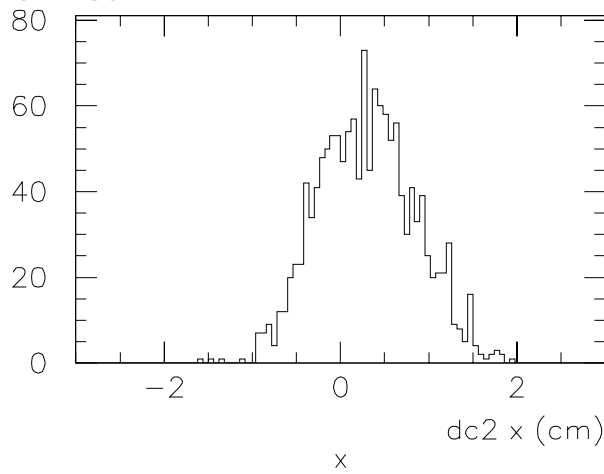
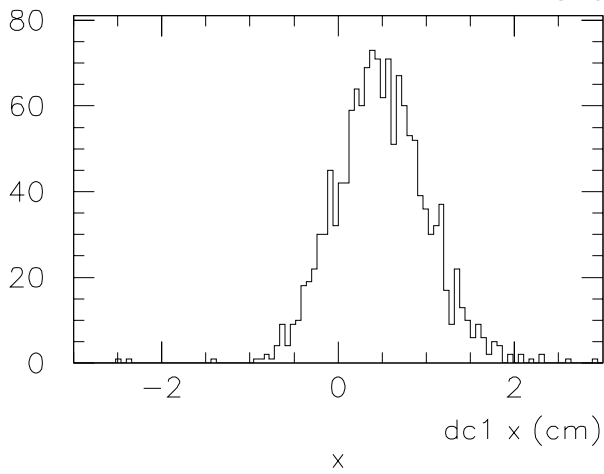


run00253e - 1GeV

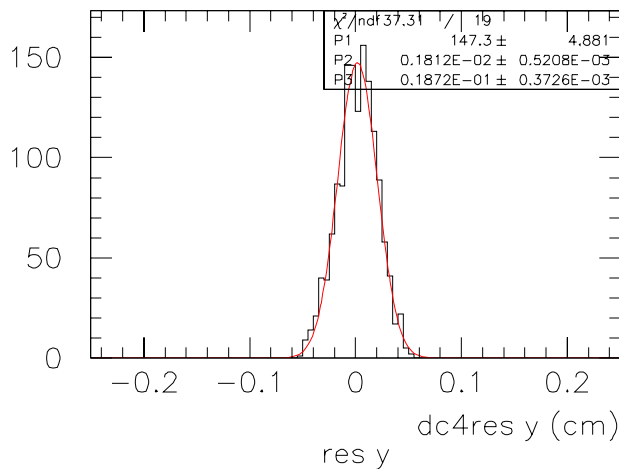
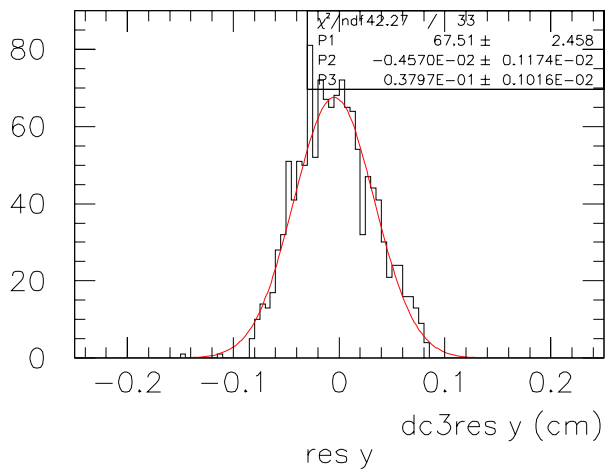
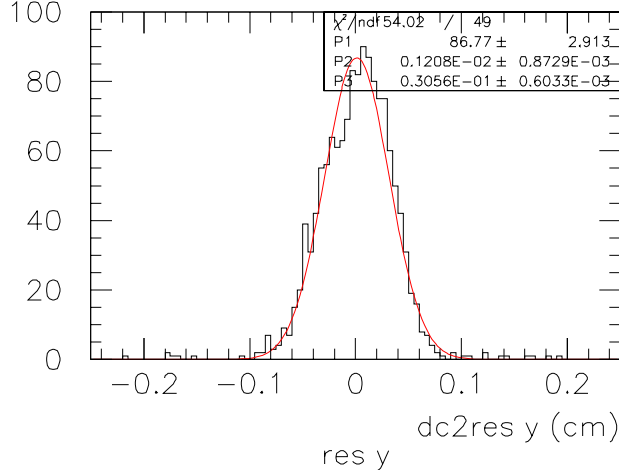
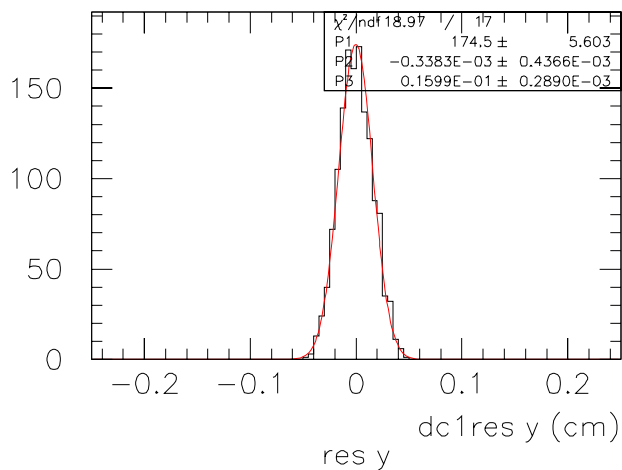
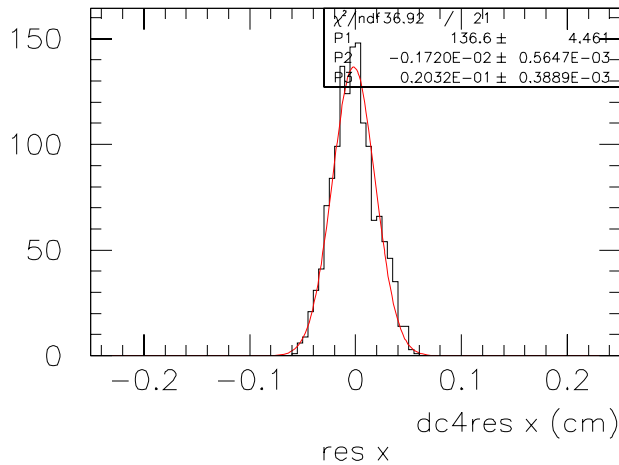
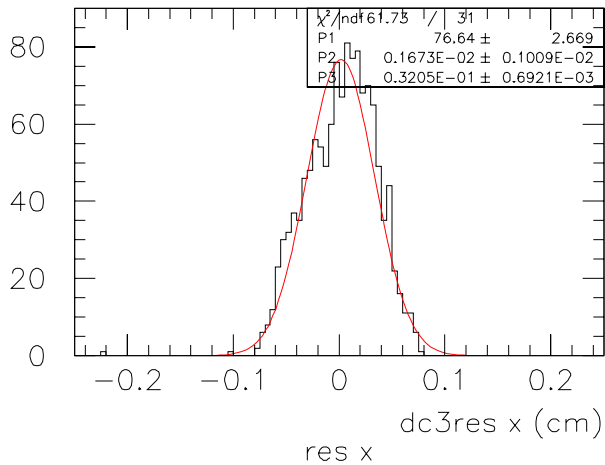
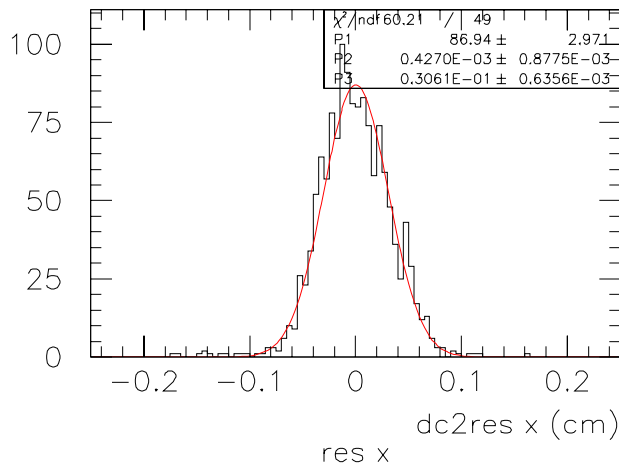
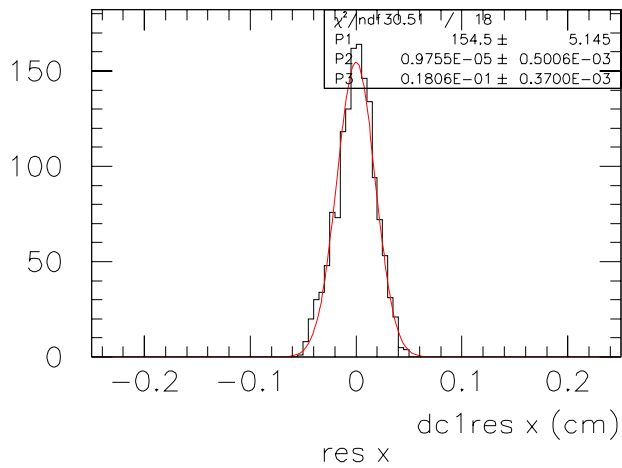


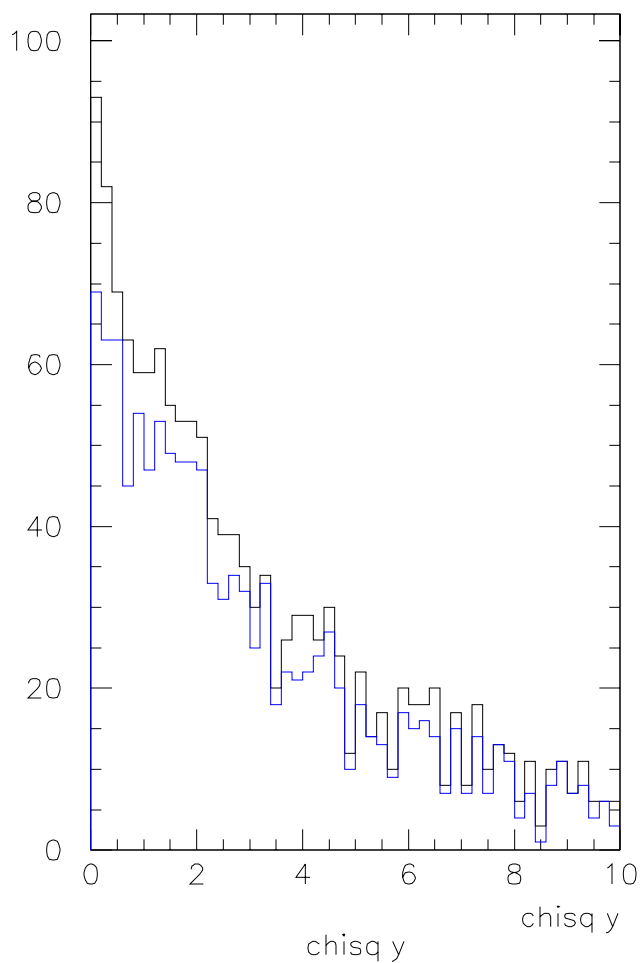
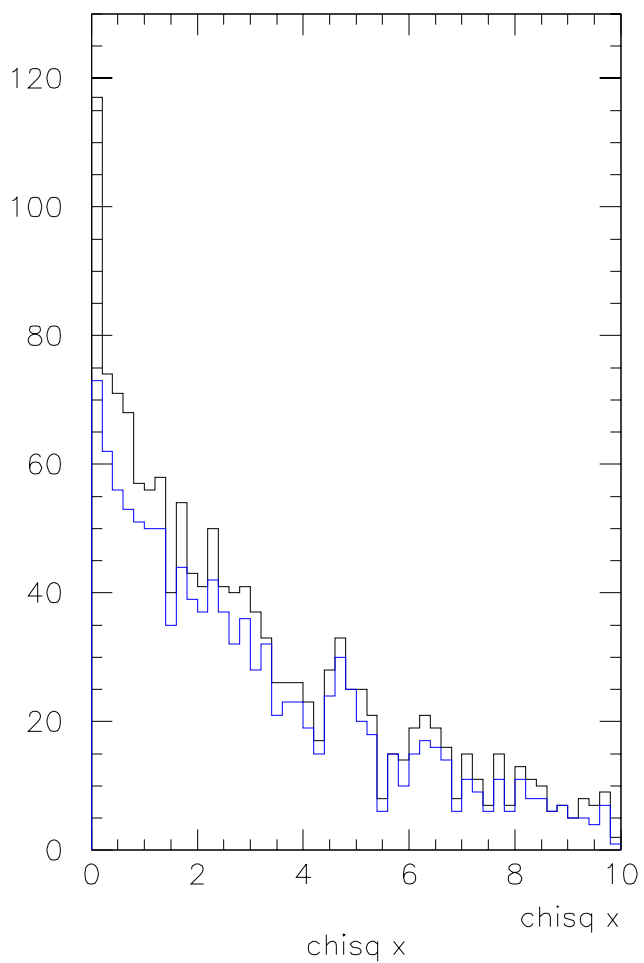
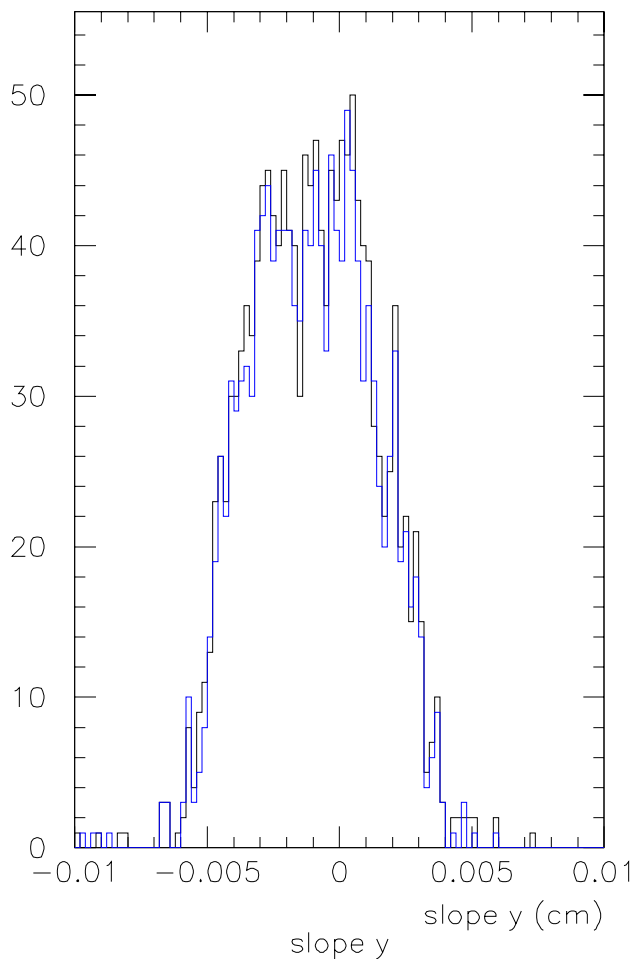
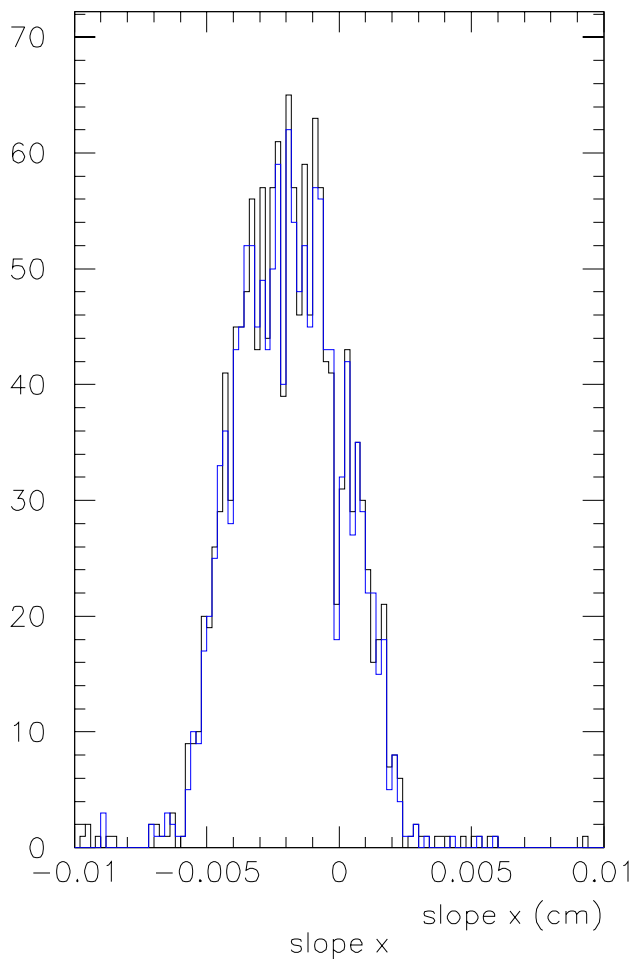
run00254e -4GeV



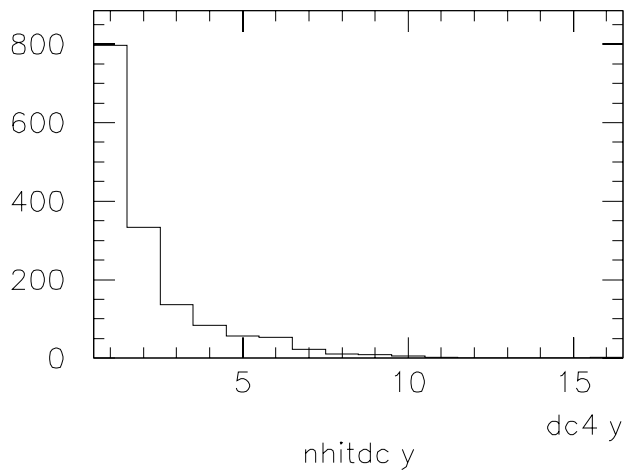
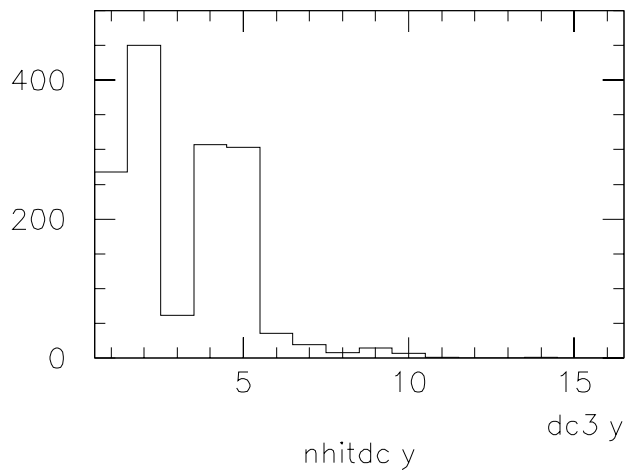
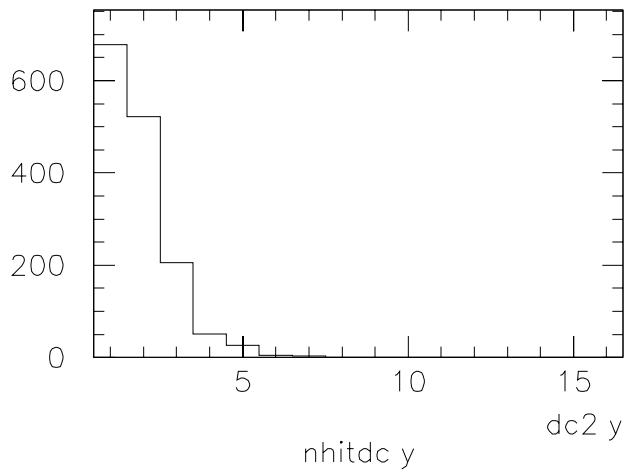
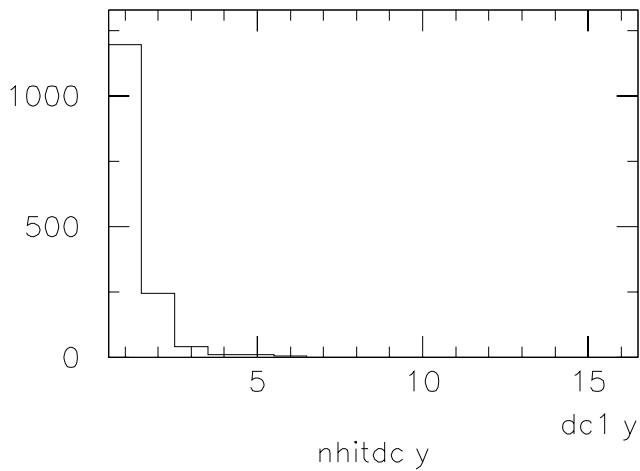
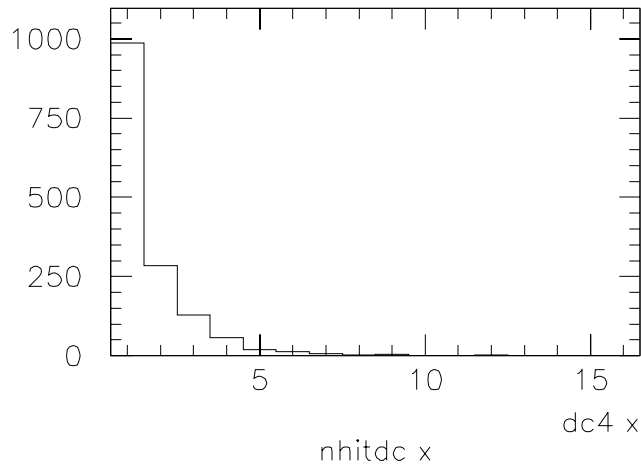
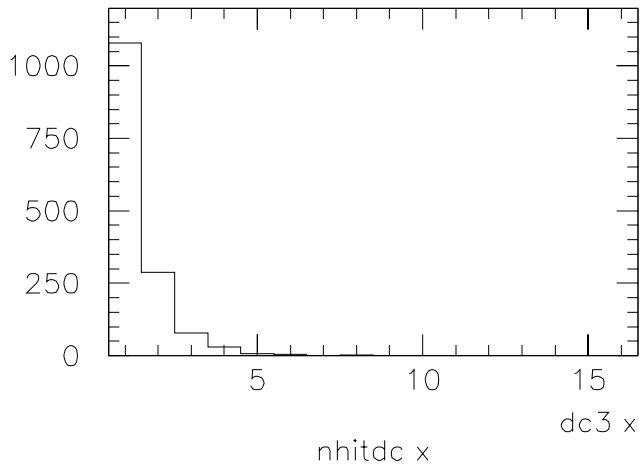
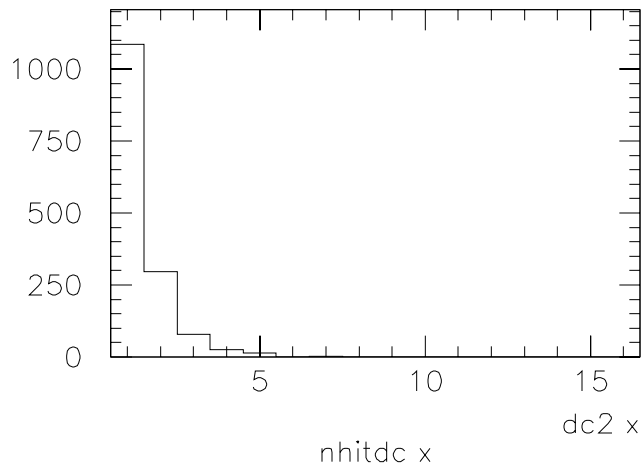
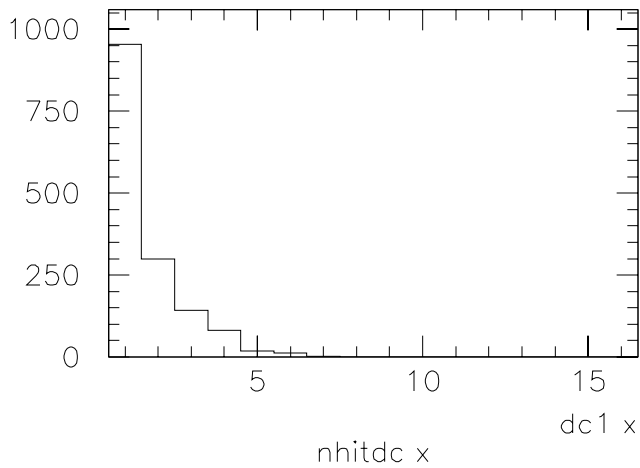


run00254e -4GeV

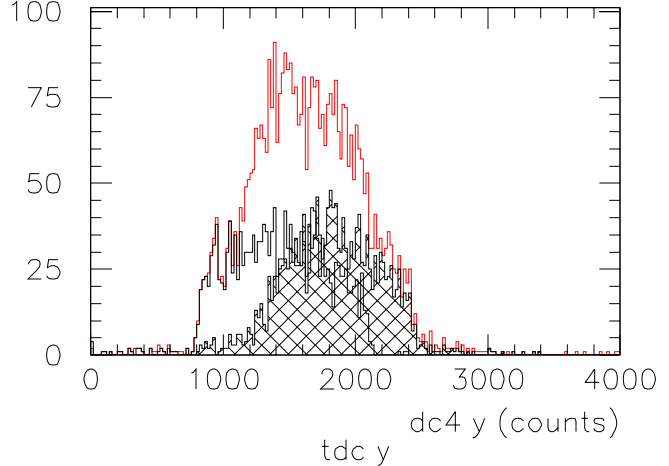
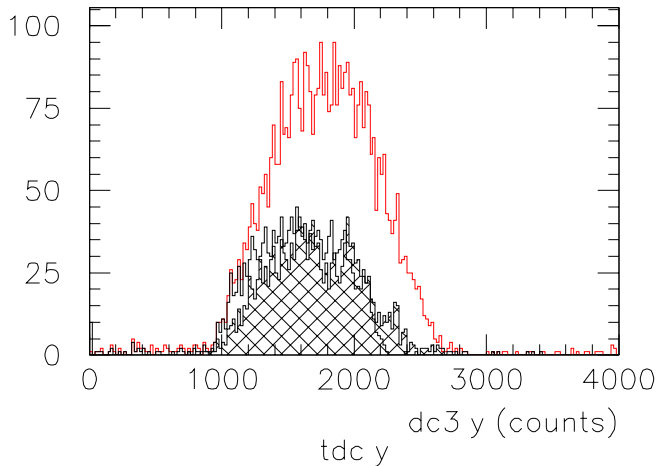
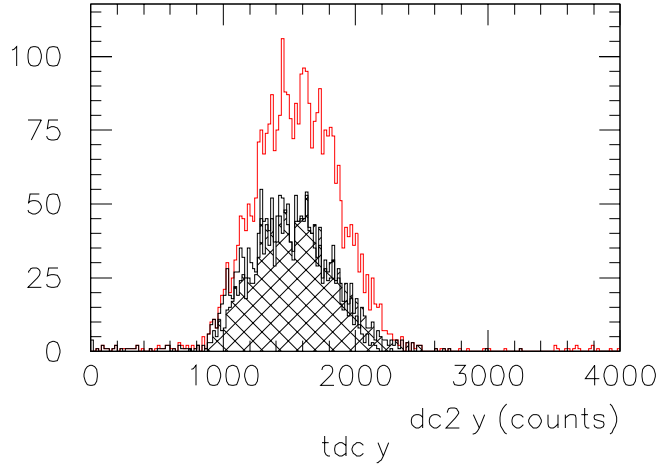
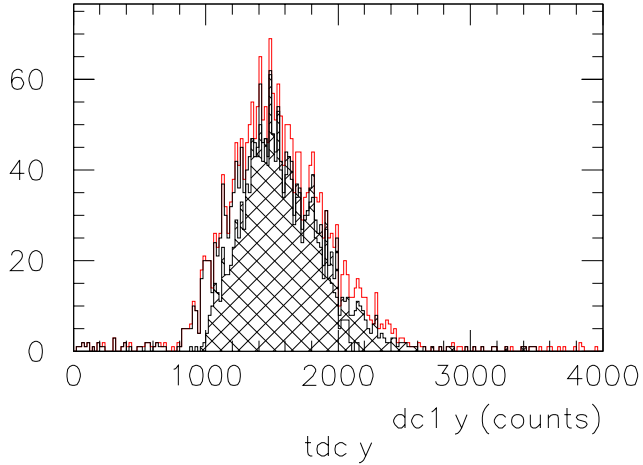
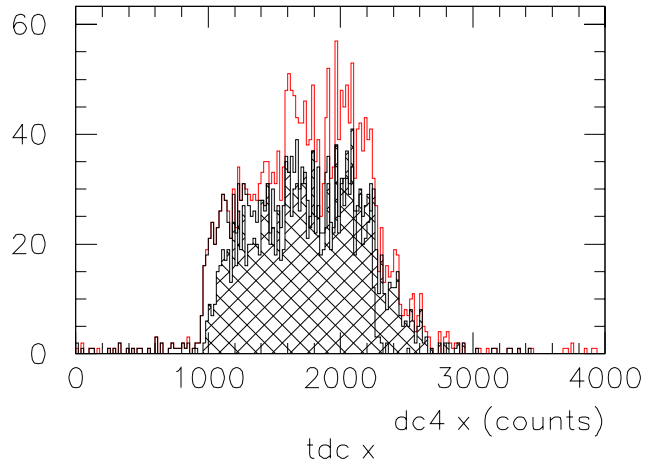
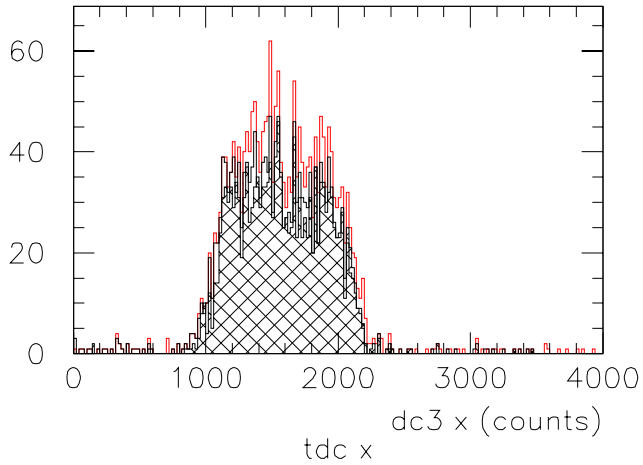
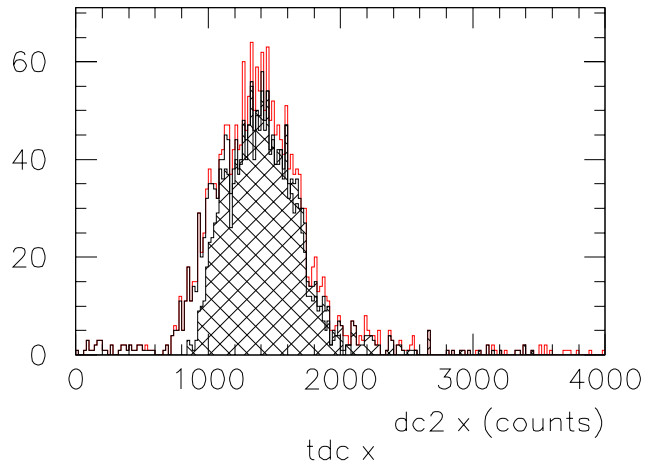
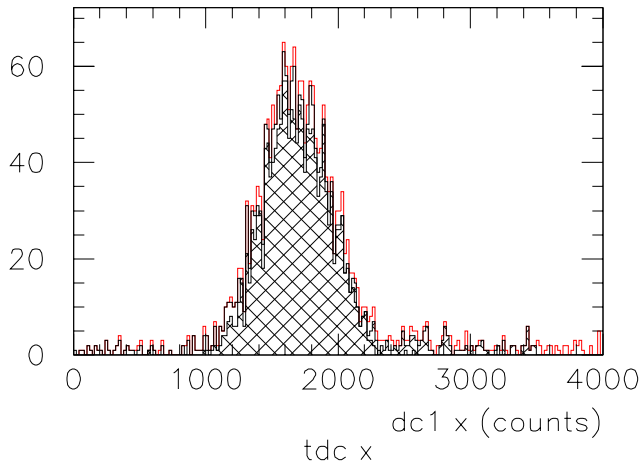




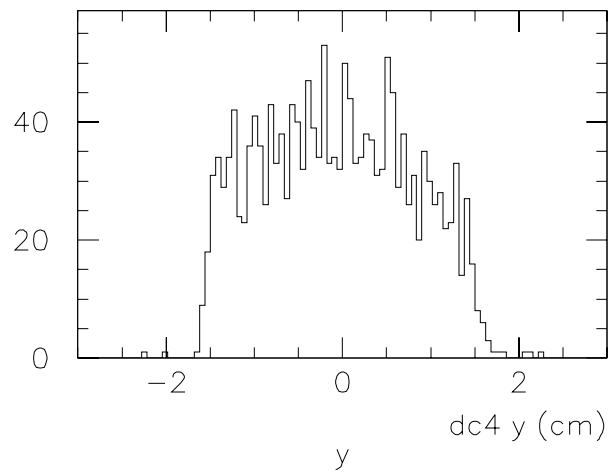
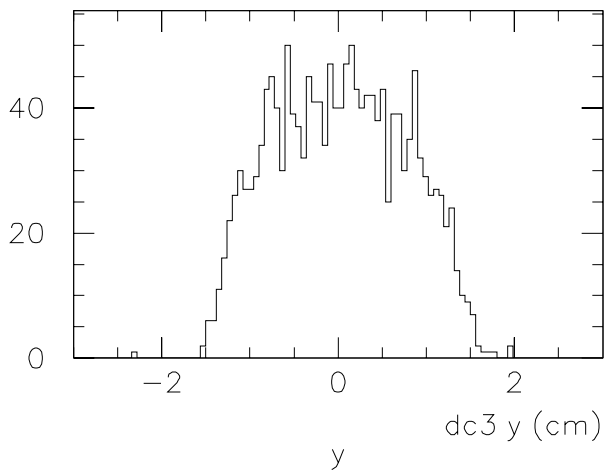
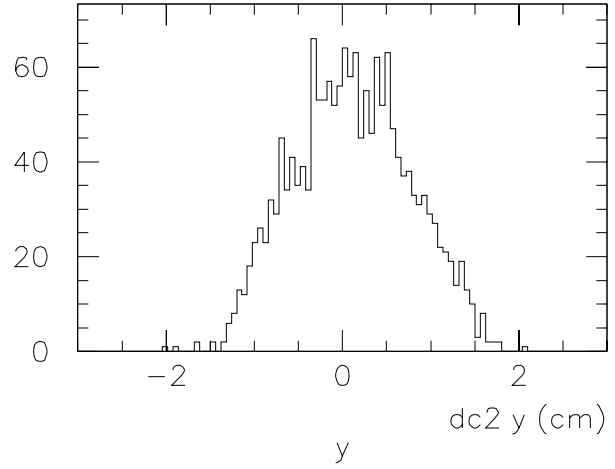
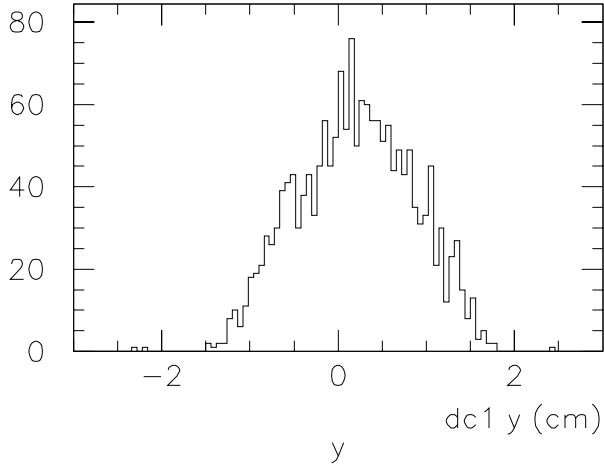
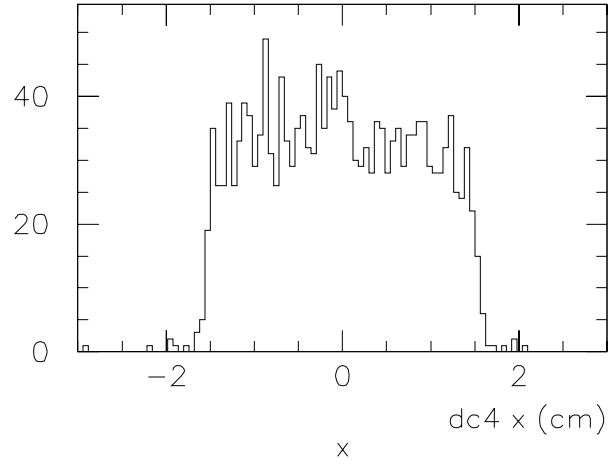
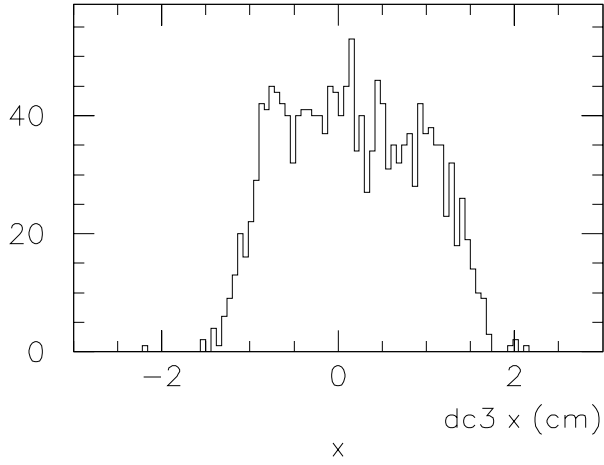
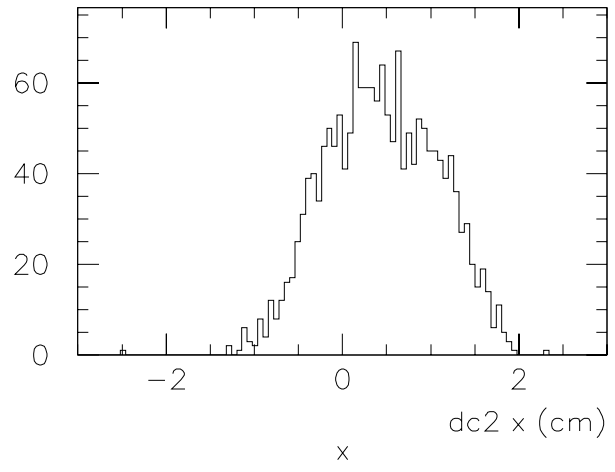
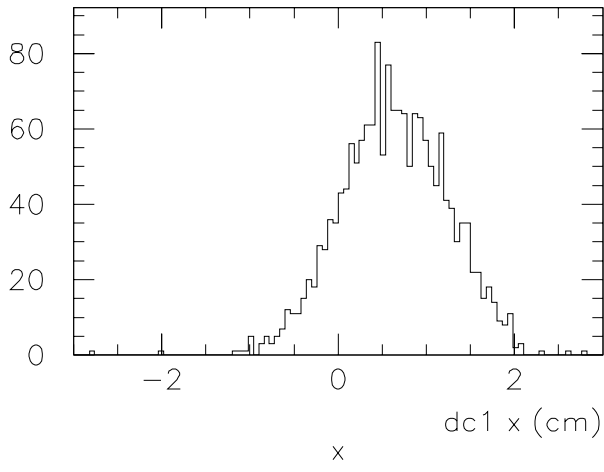
run00254e -4GeV



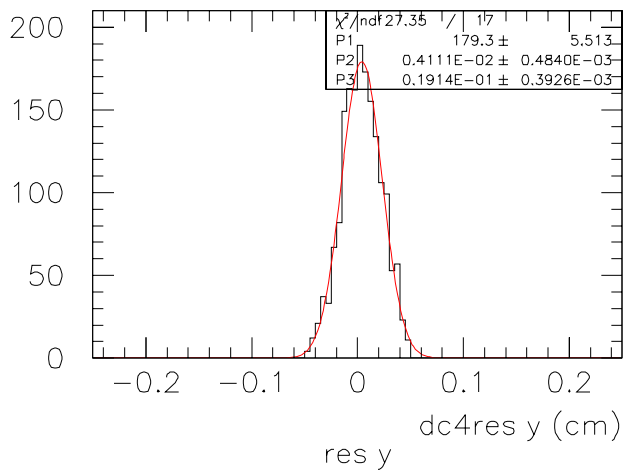
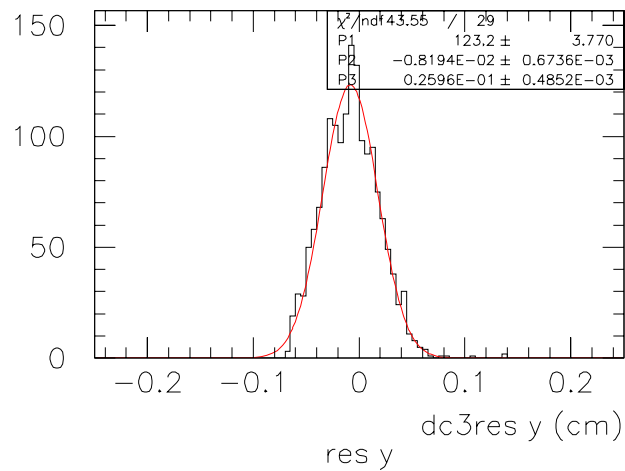
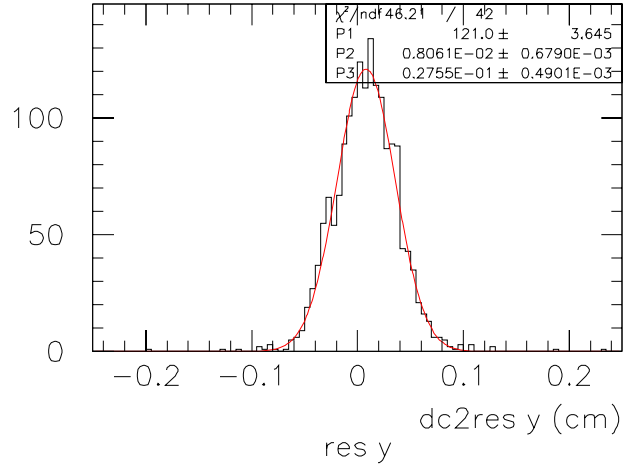
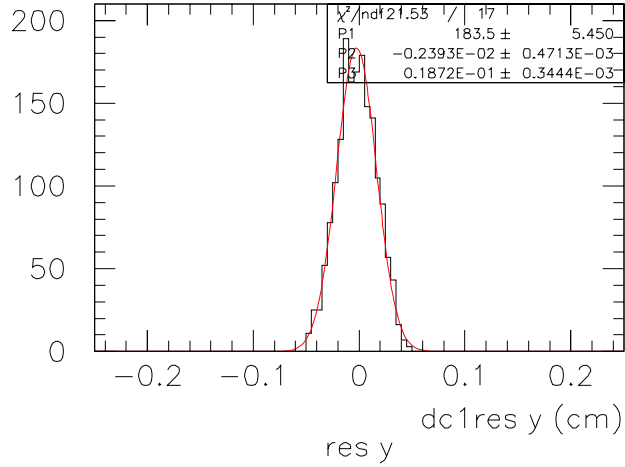
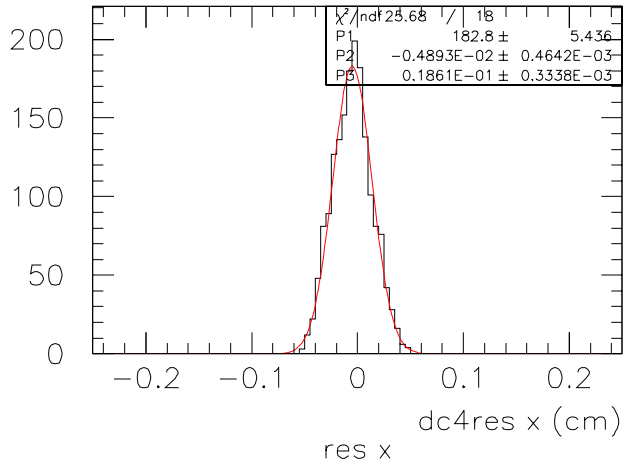
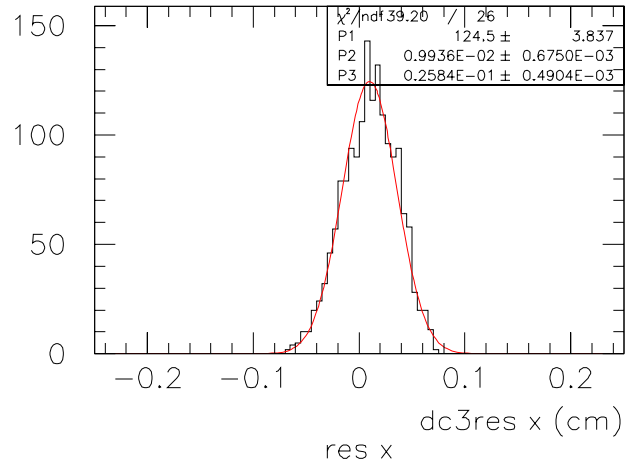
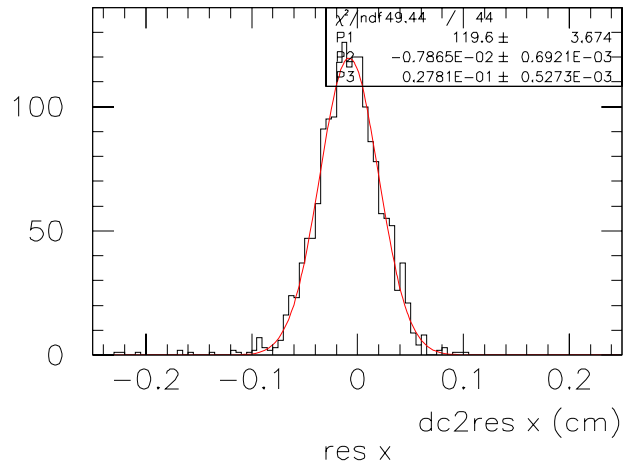
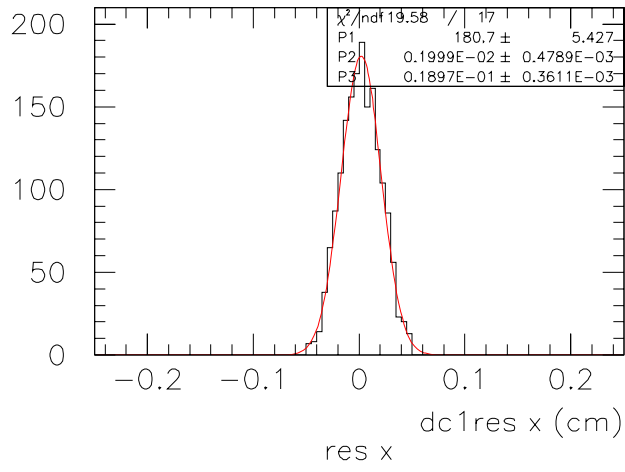
run00337mu slit 3mm



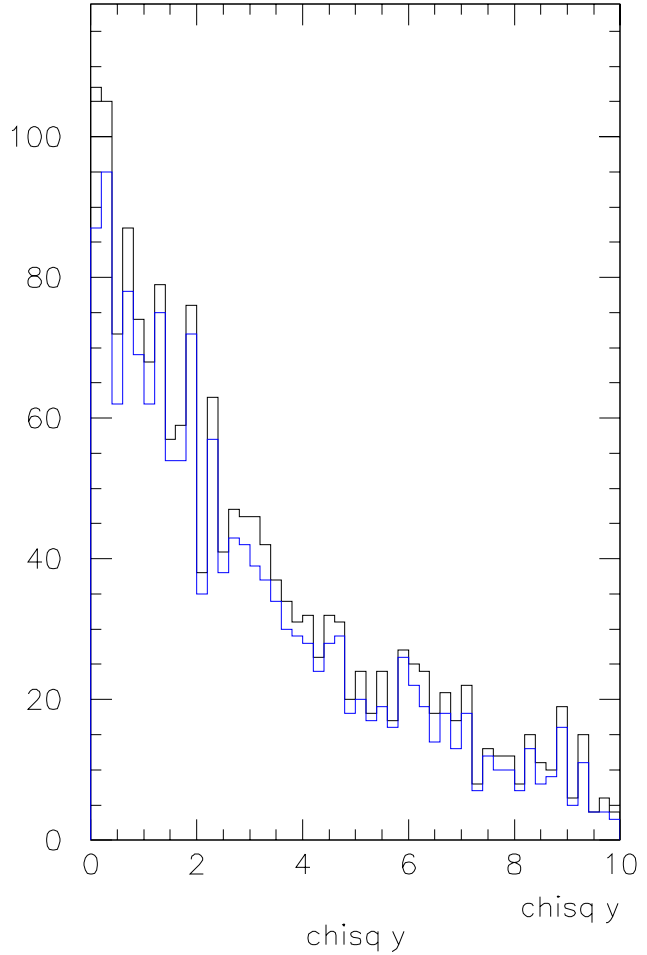
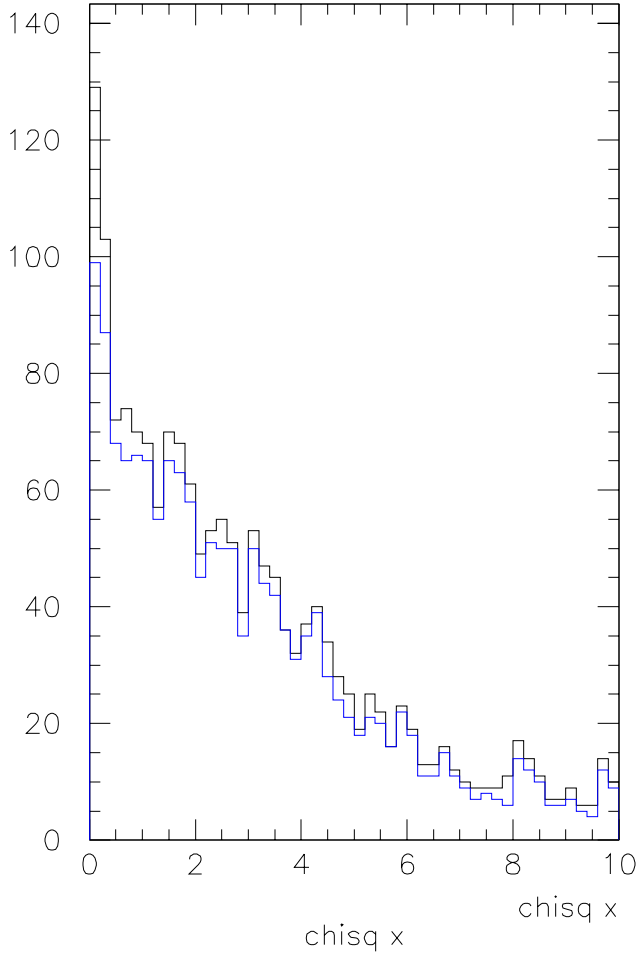
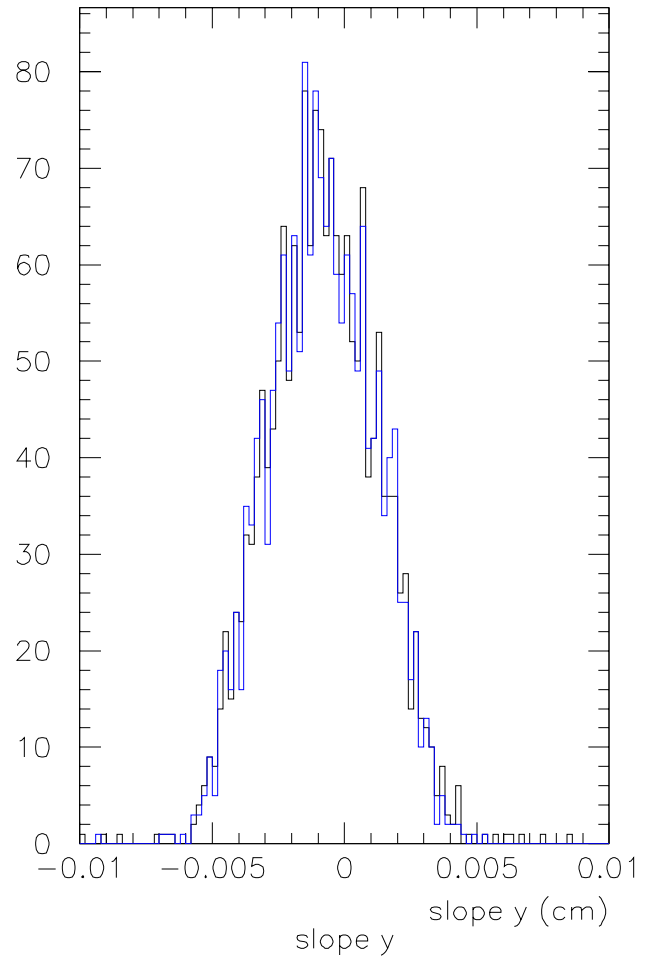
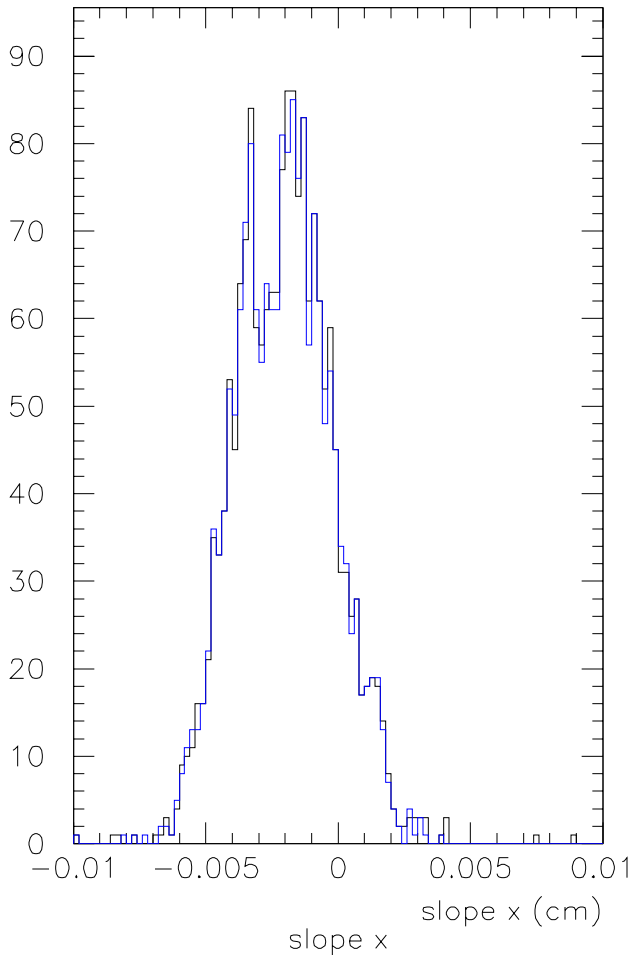
run00337mu slit 3mm



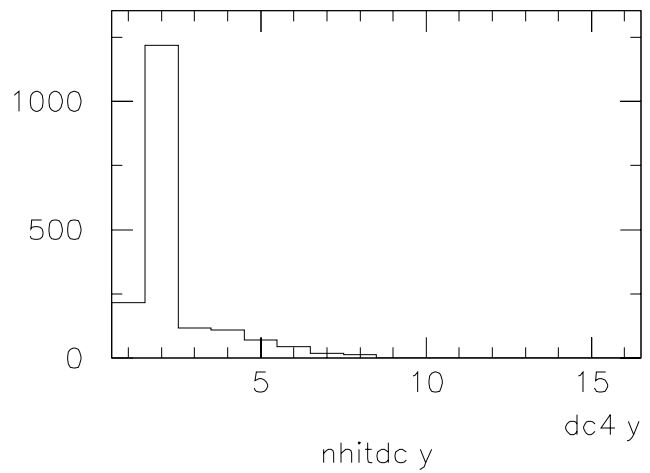
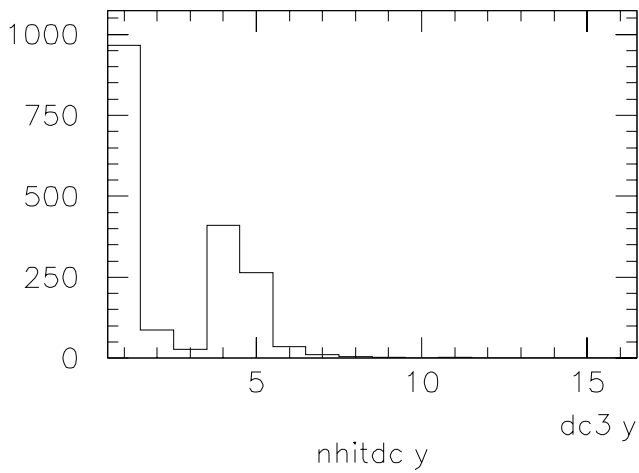
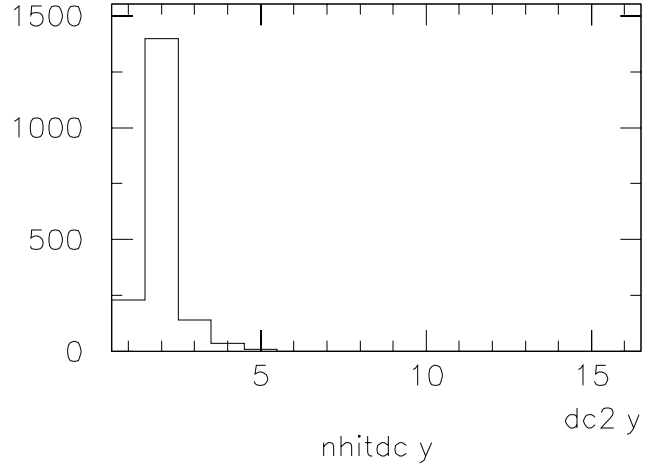
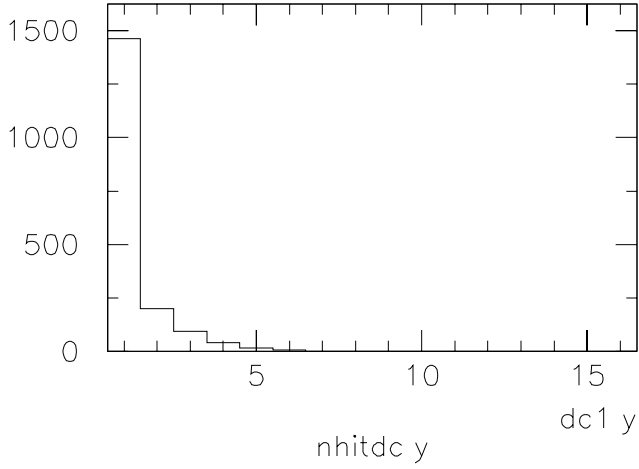
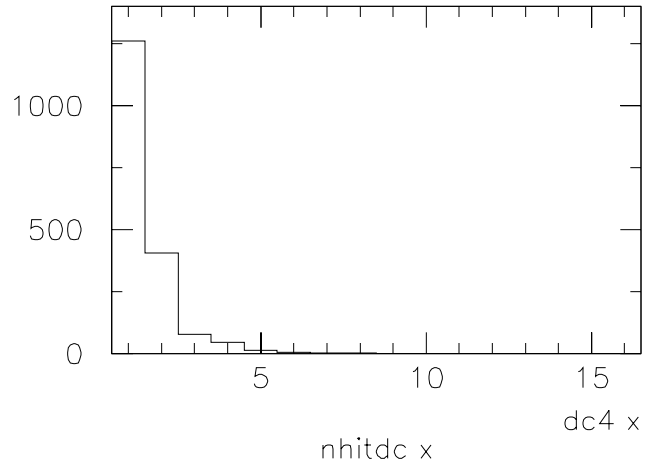
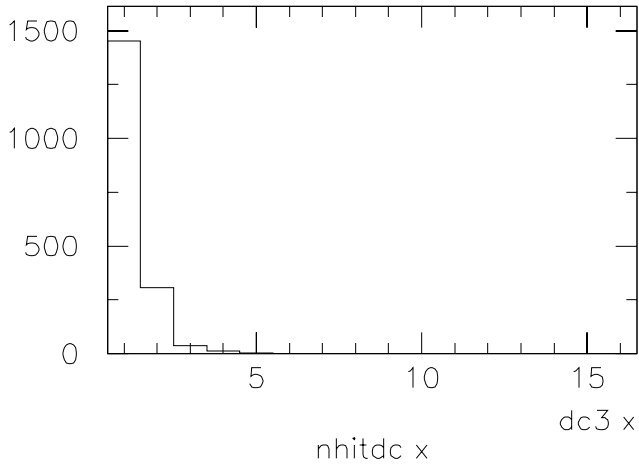
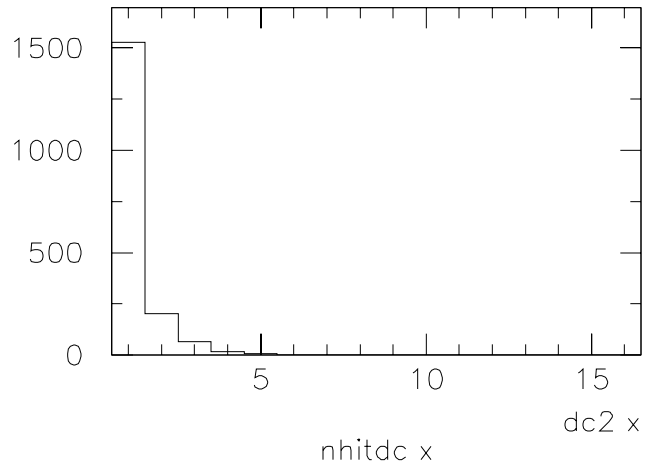
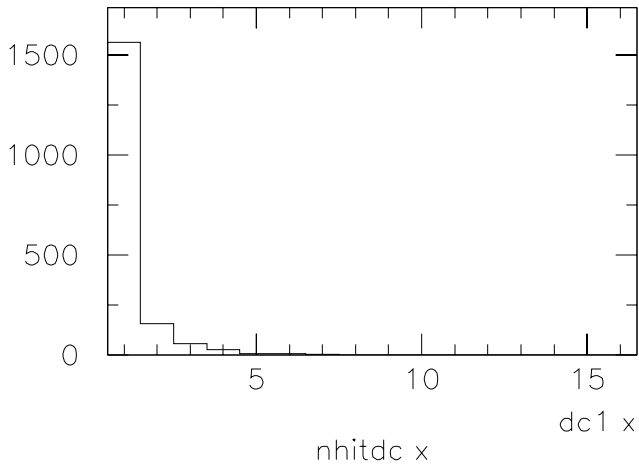
run00337mu slit 3mm



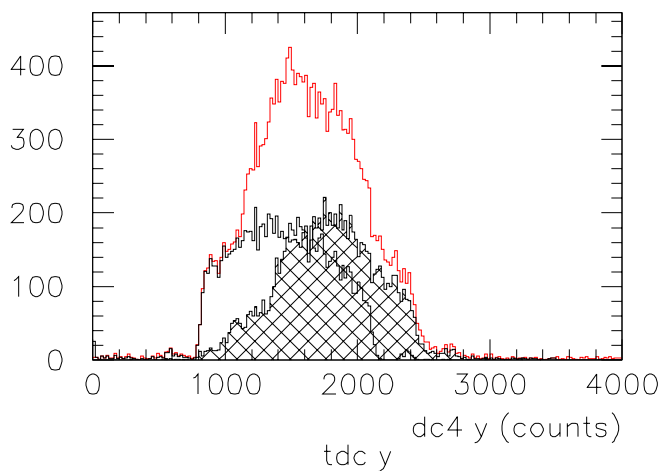
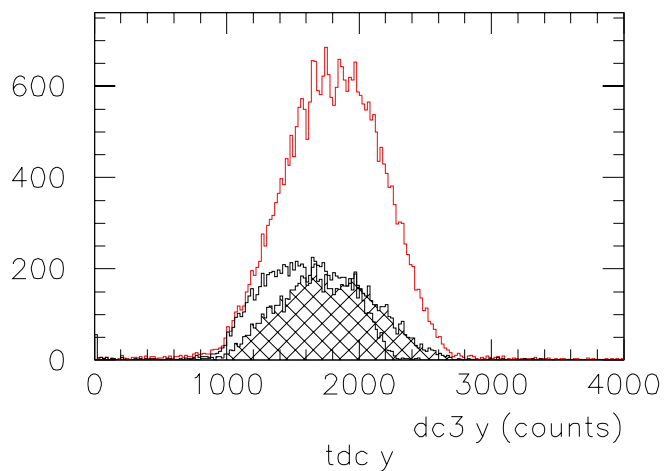
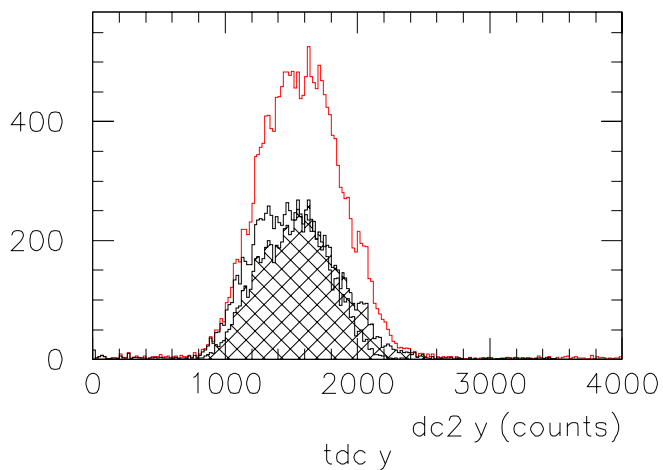
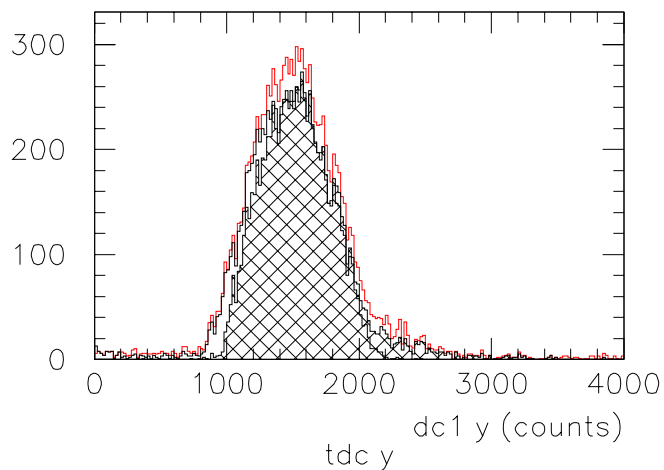
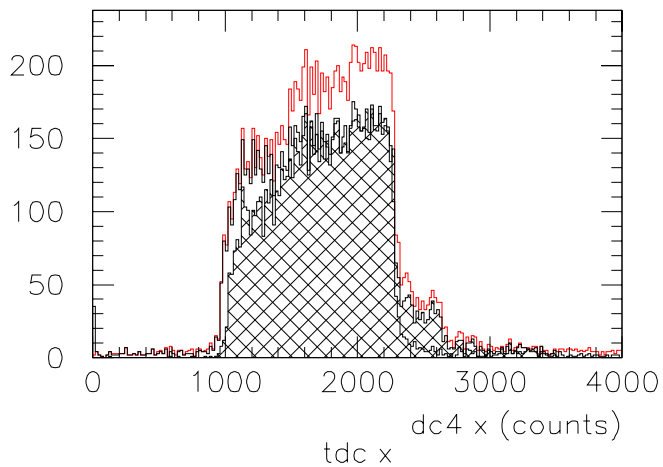
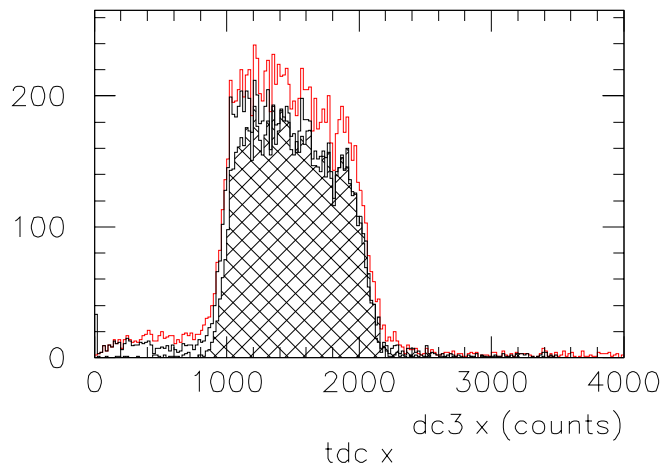
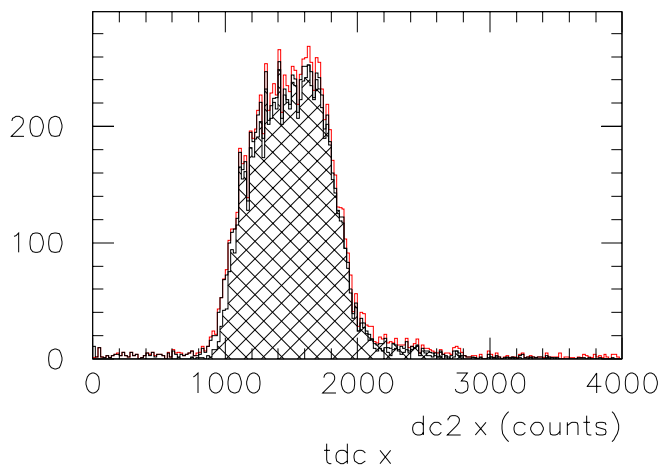
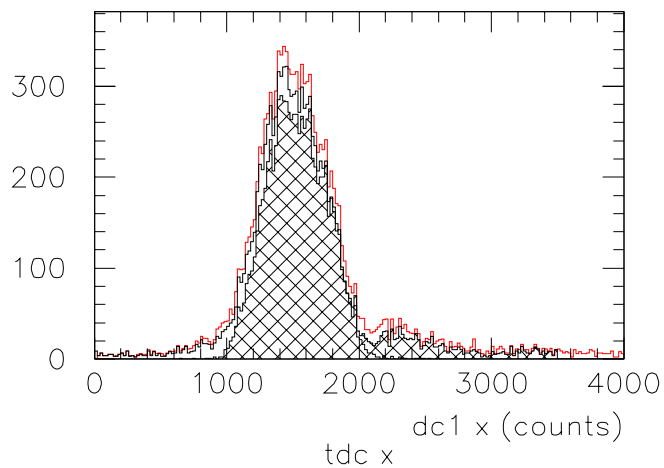
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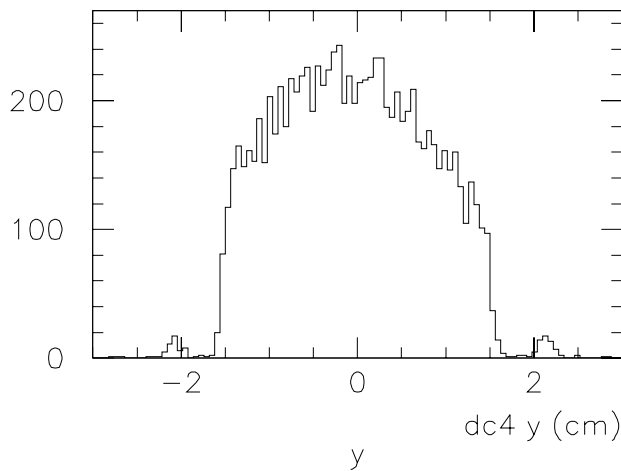
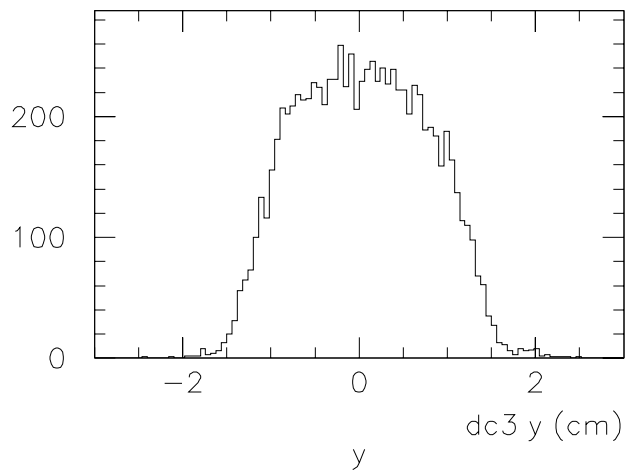
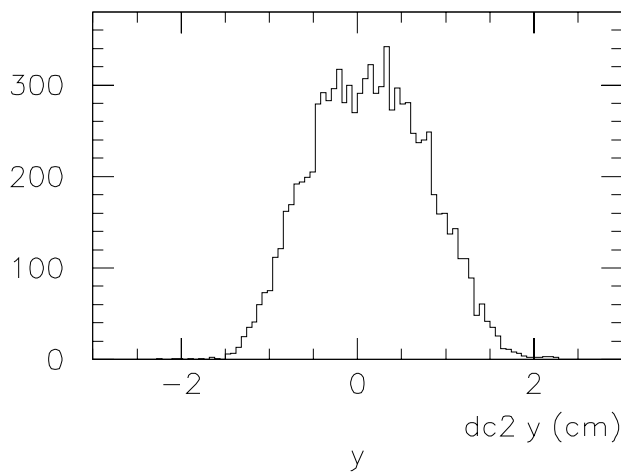
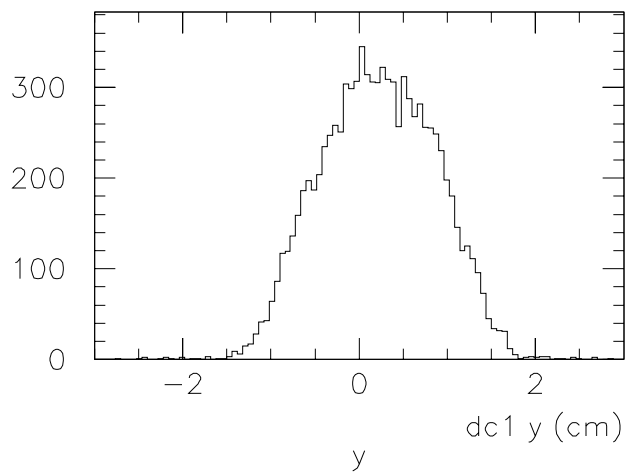
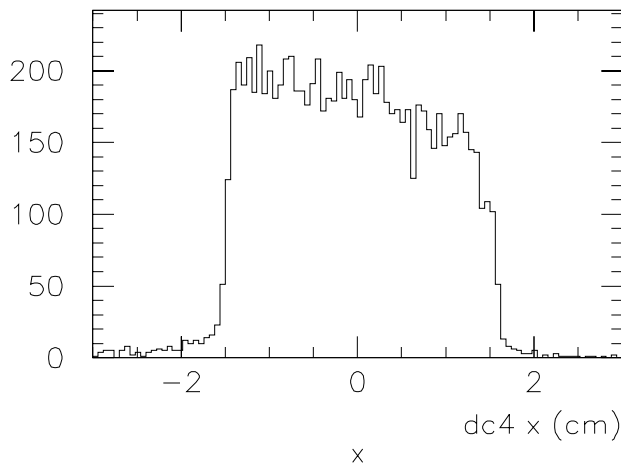
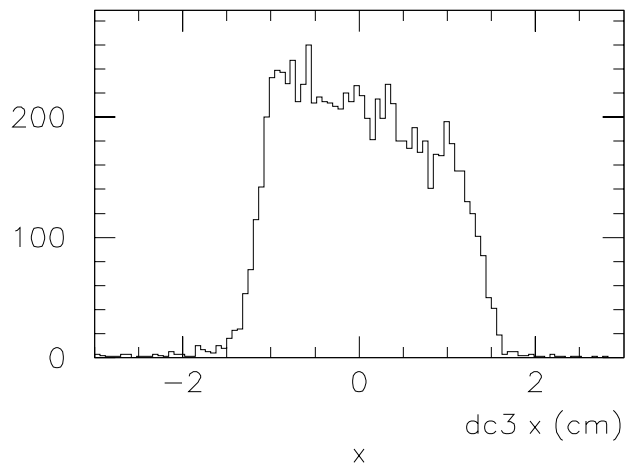
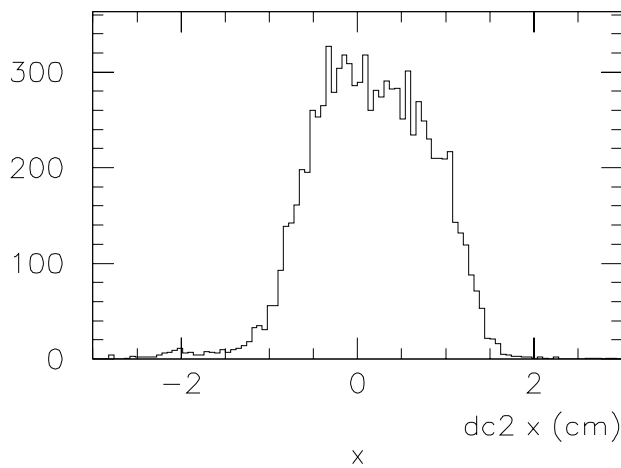
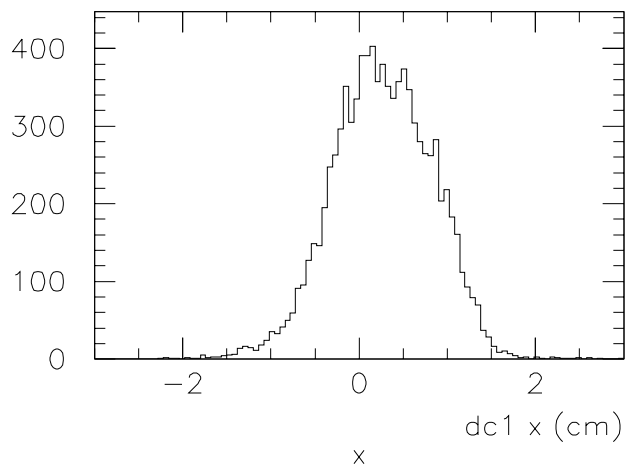
run00337mu slit 3mm



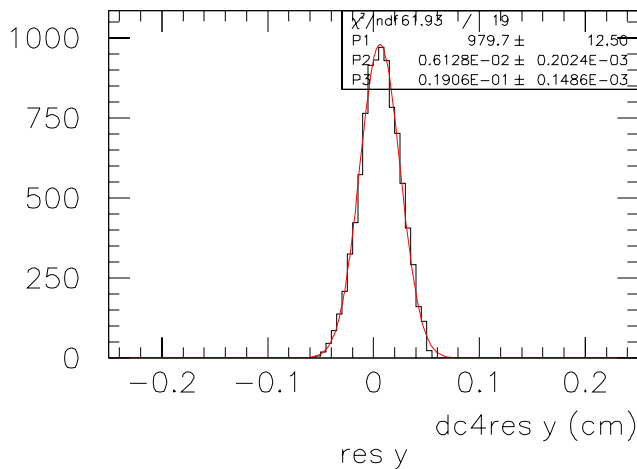
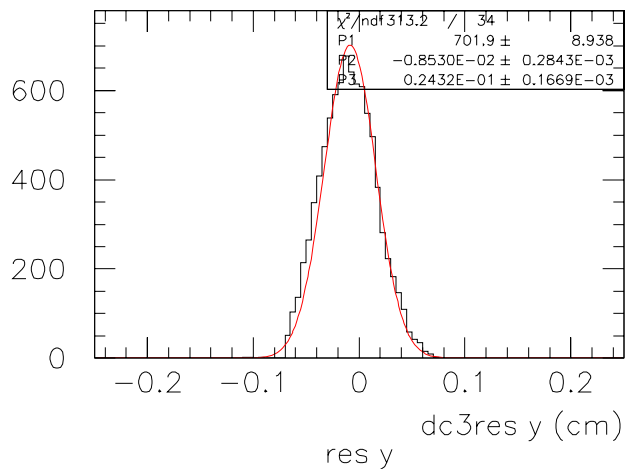
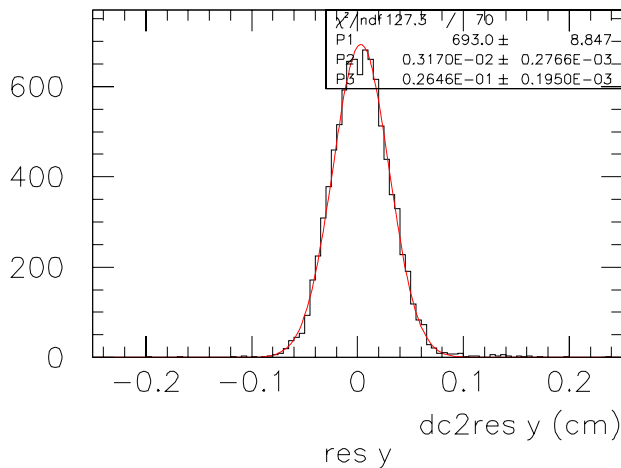
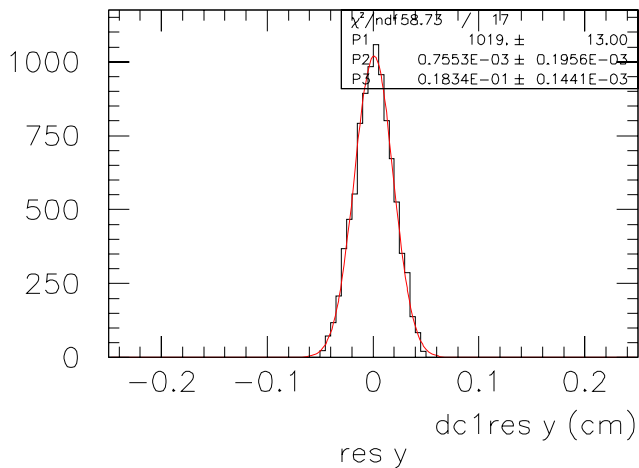
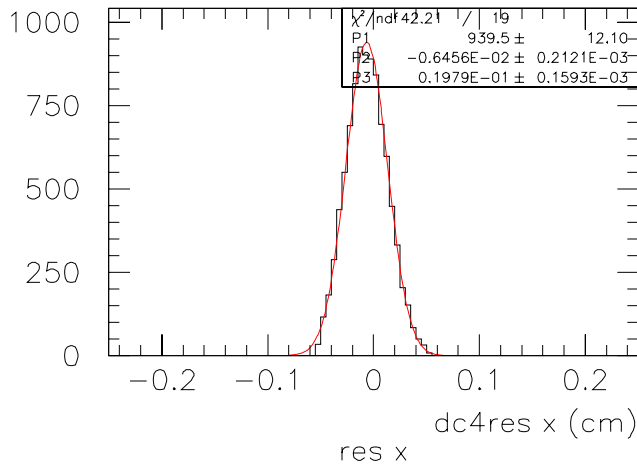
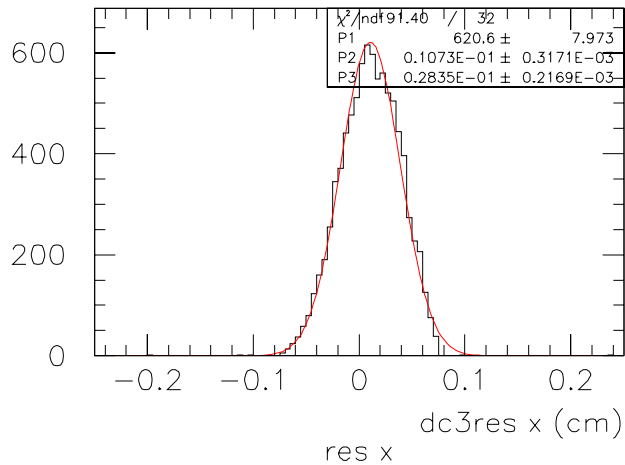
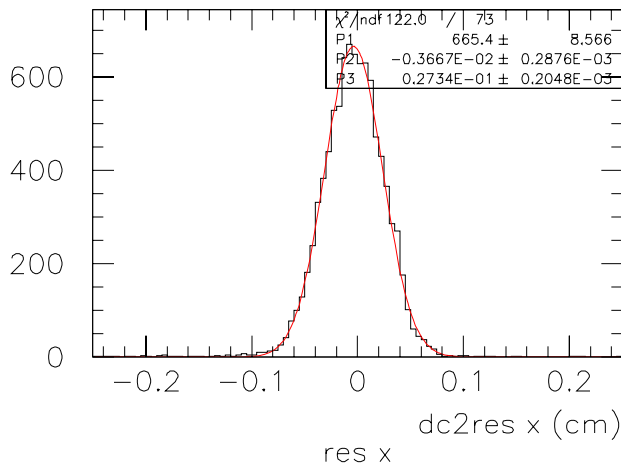
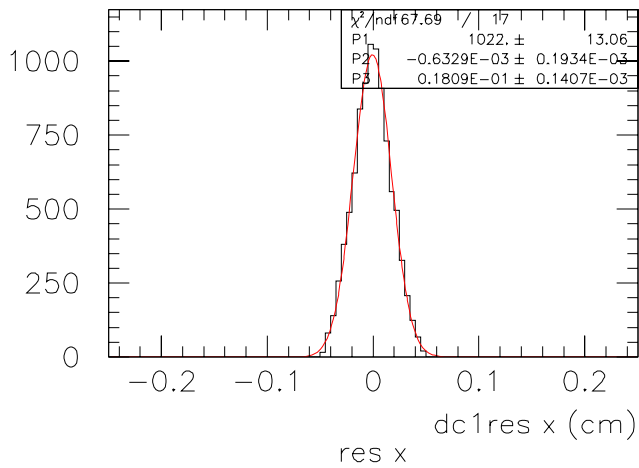
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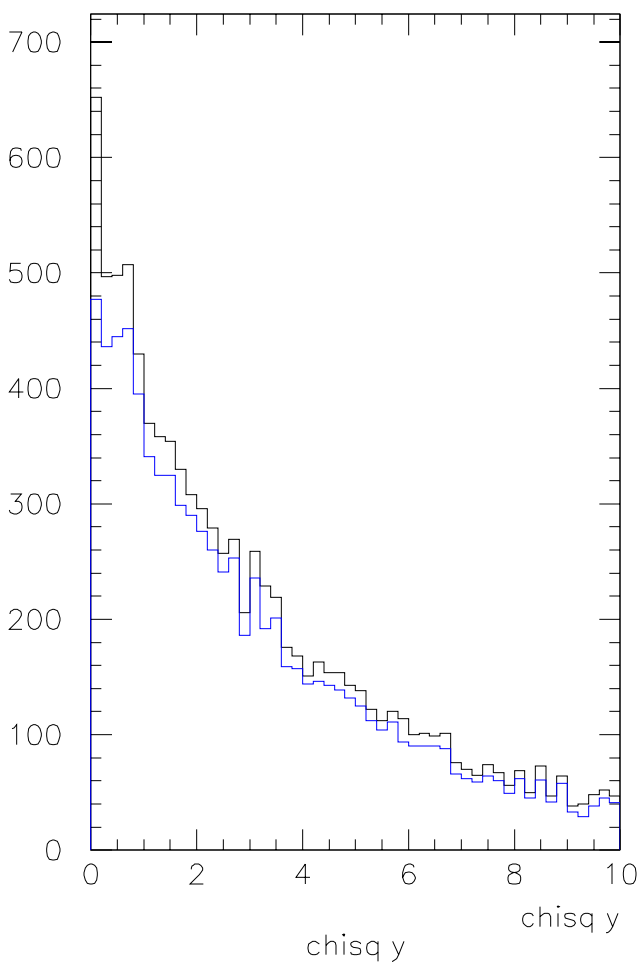
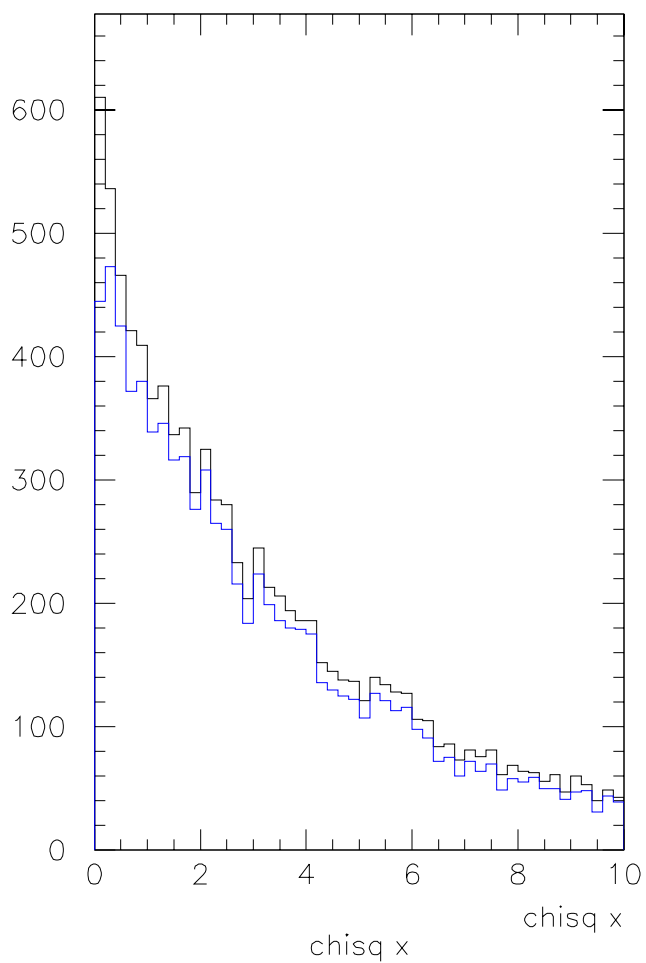
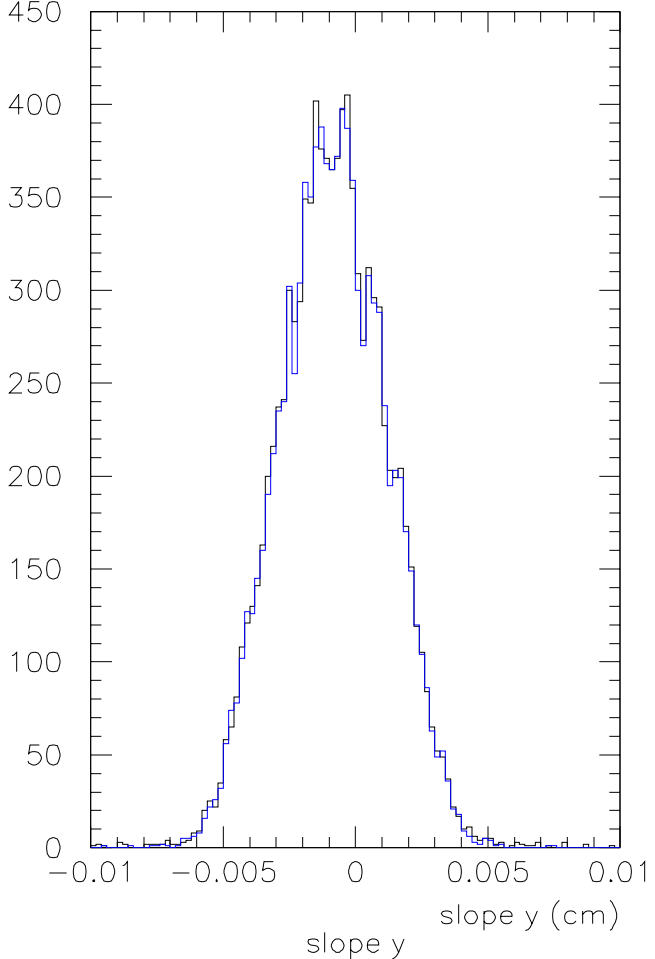
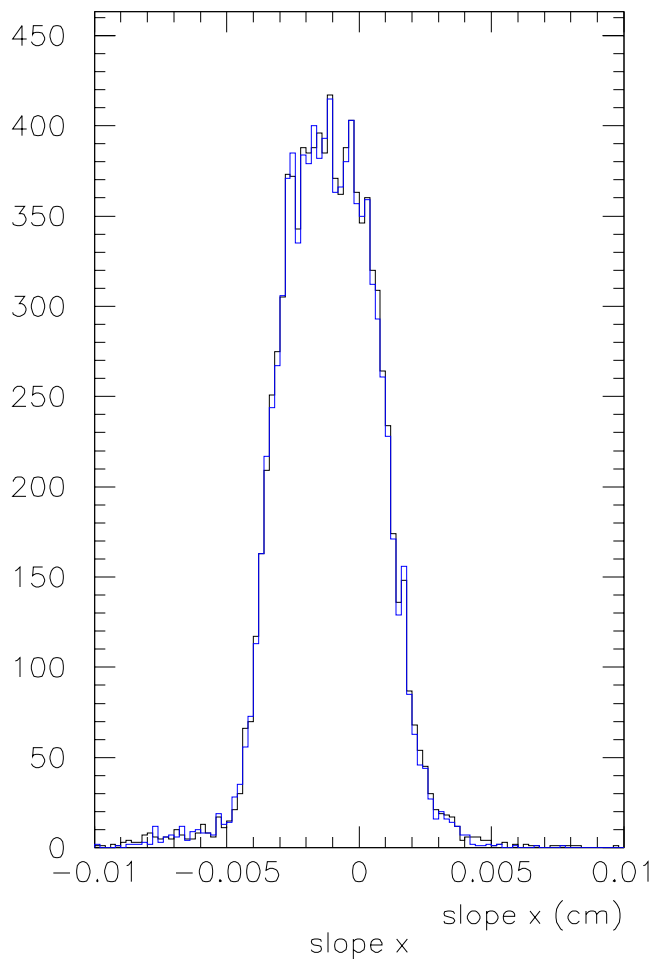


run00459inc slit 3mm

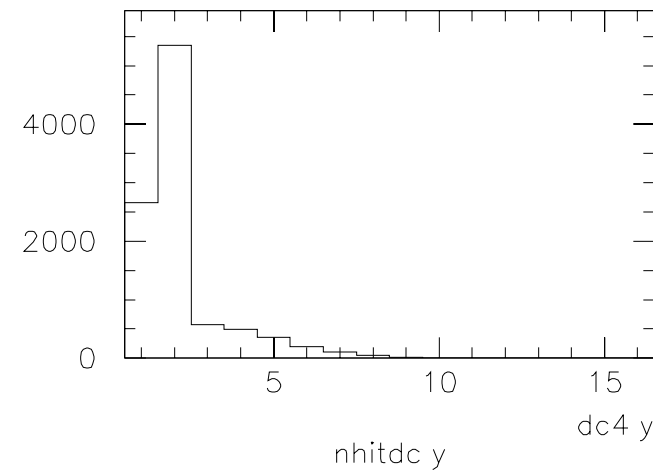
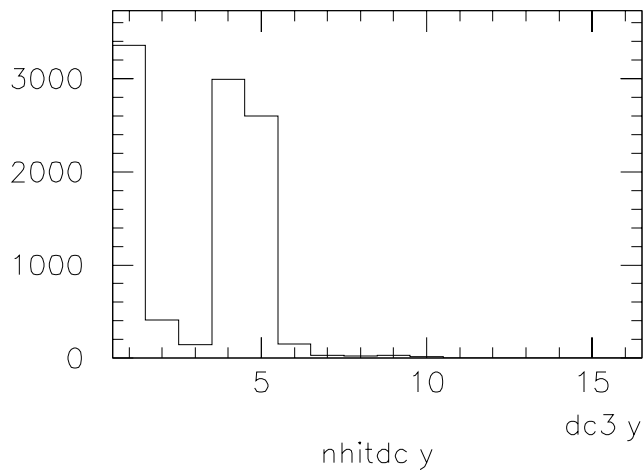
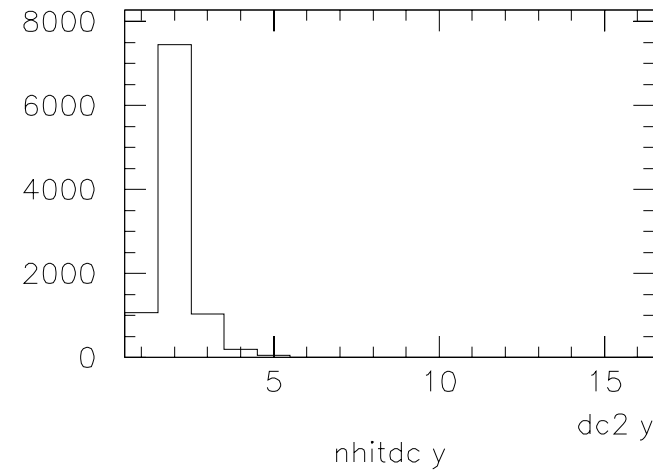
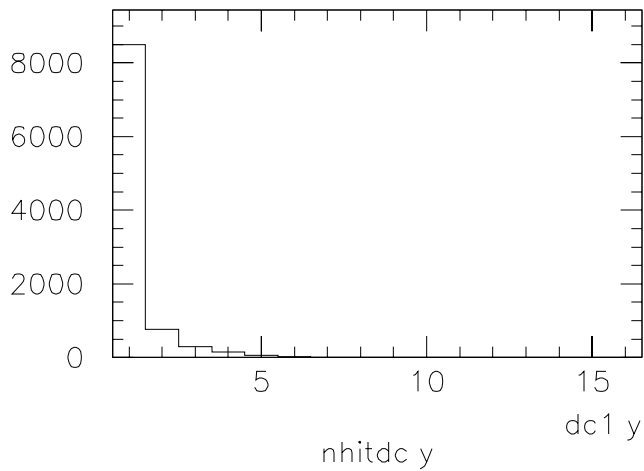
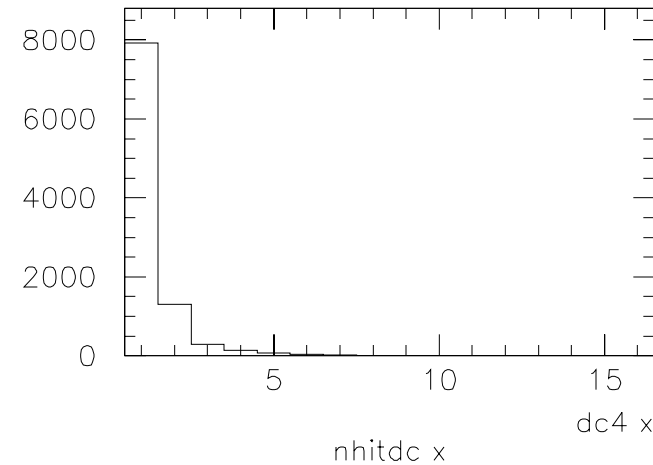
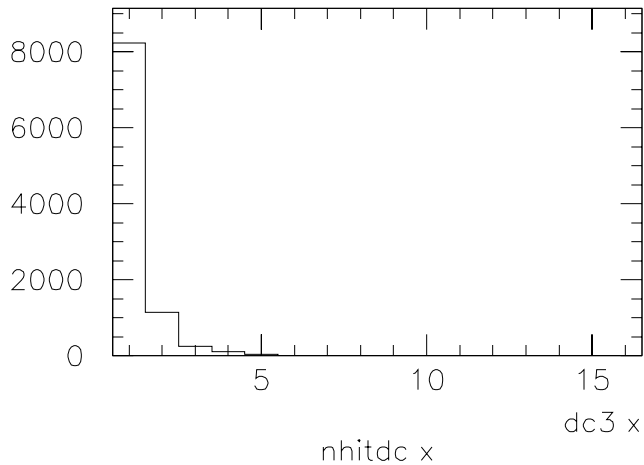
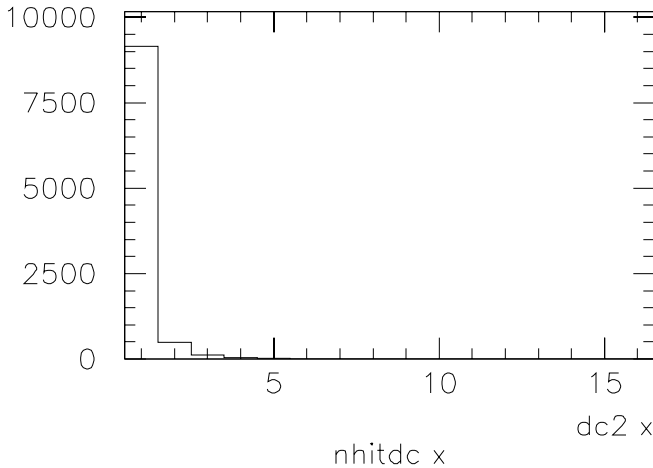
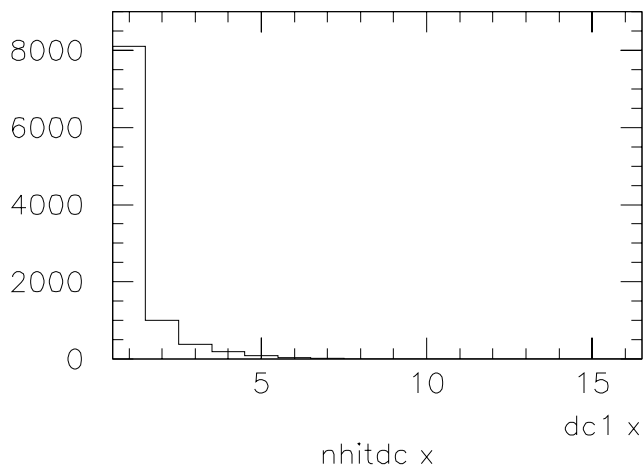


run00459inc slit 3mm

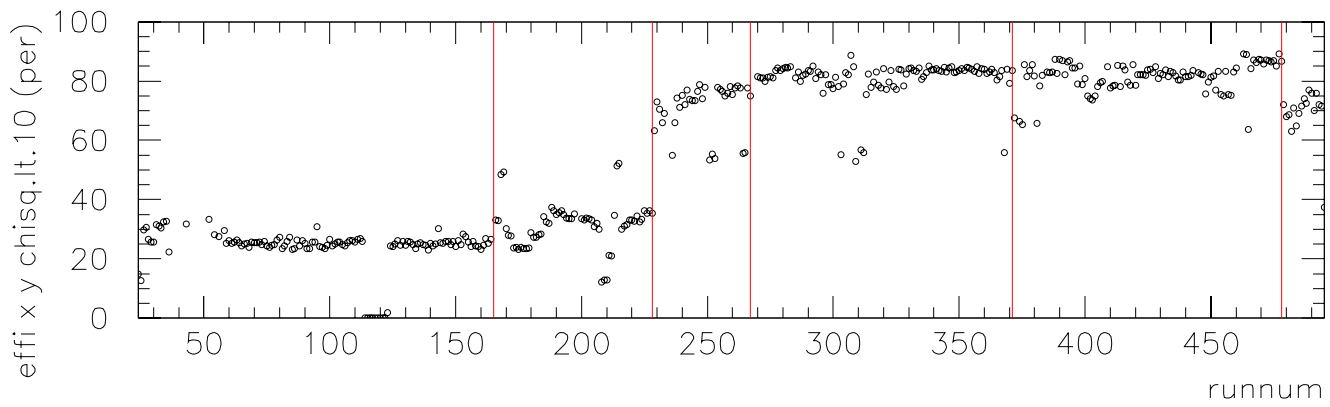
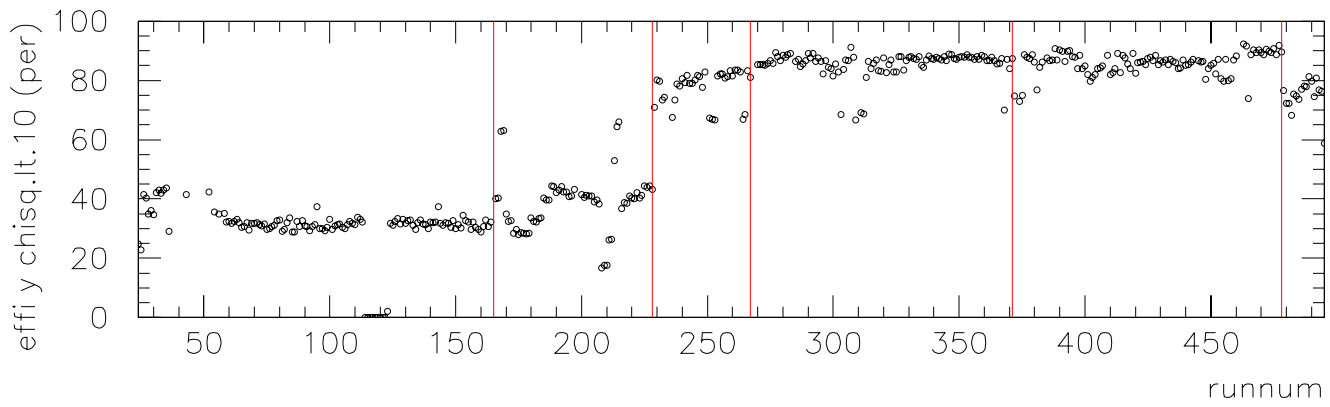
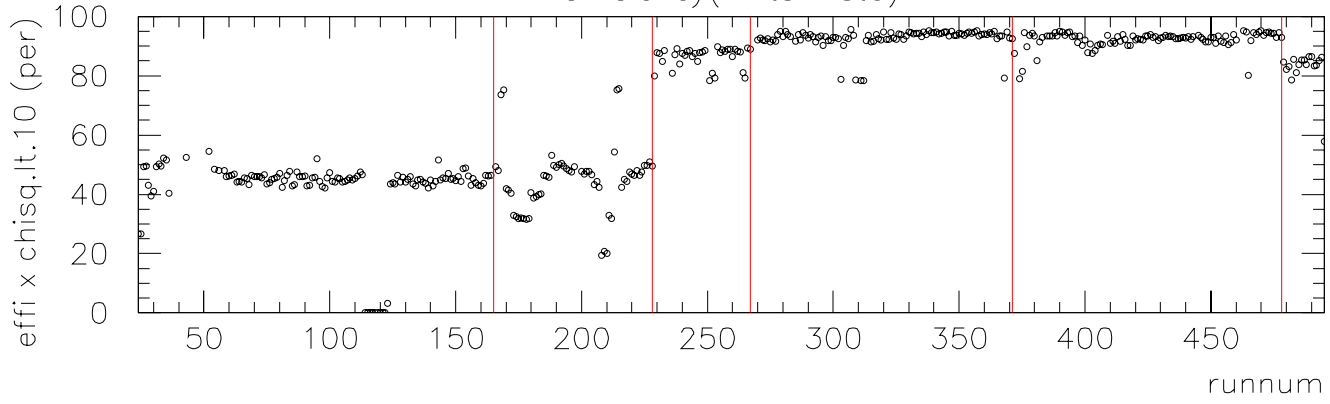




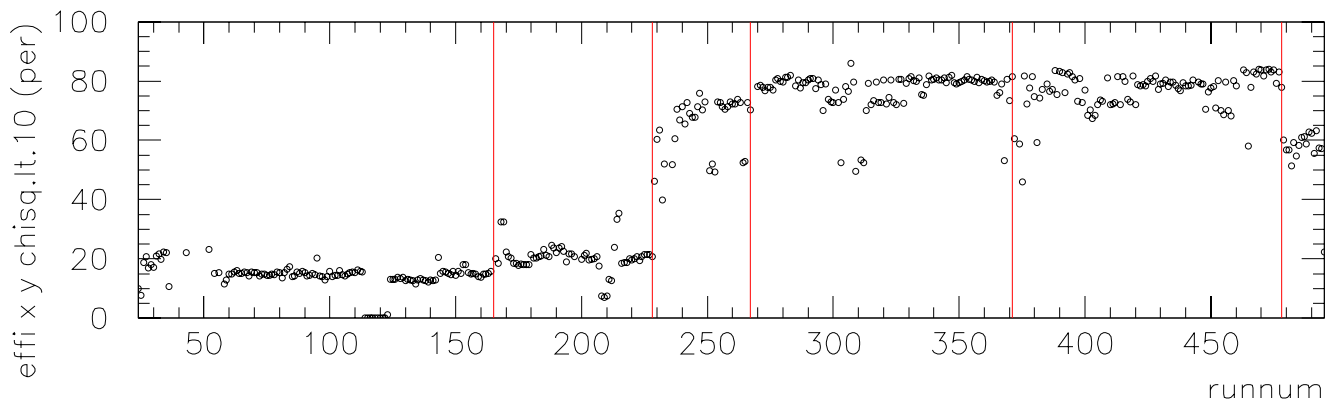
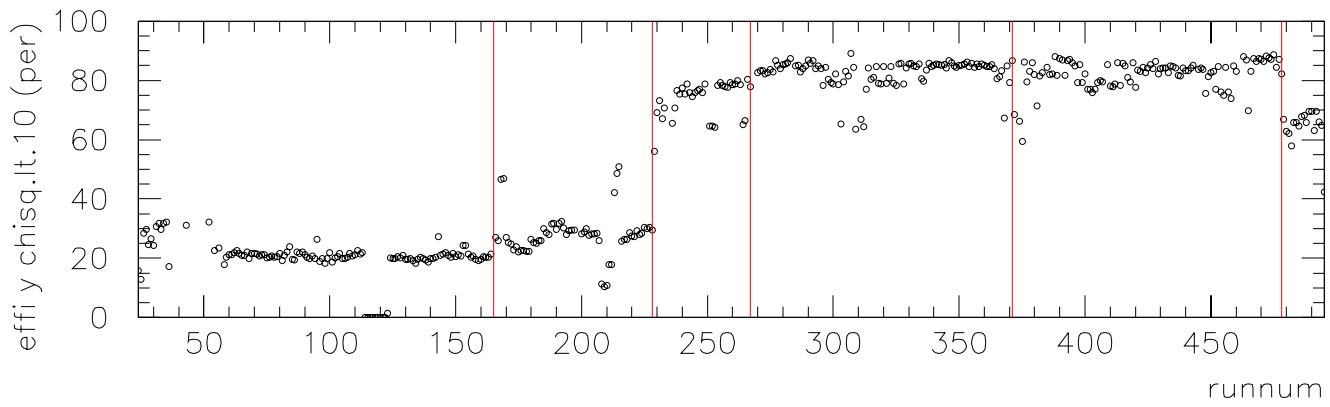
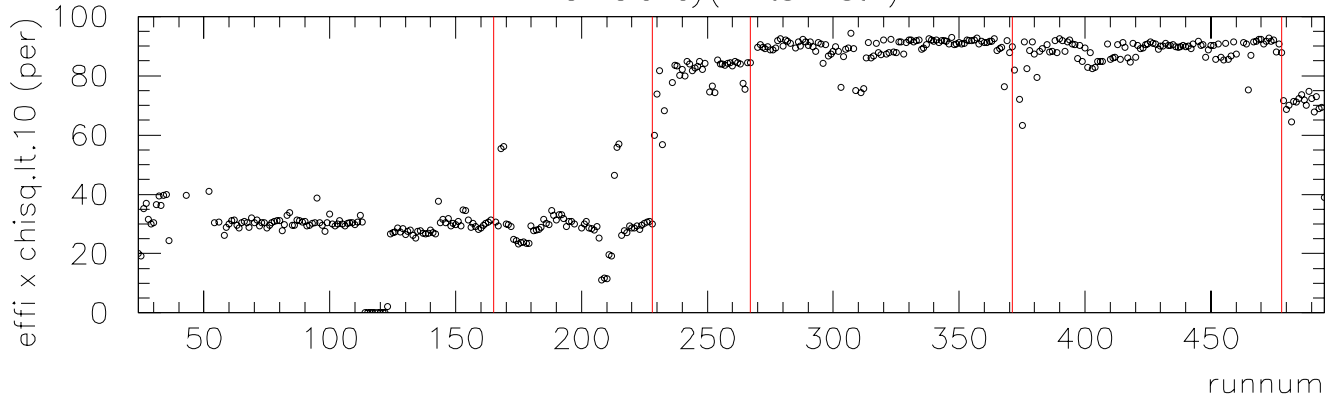
run00459inc slit 3mm



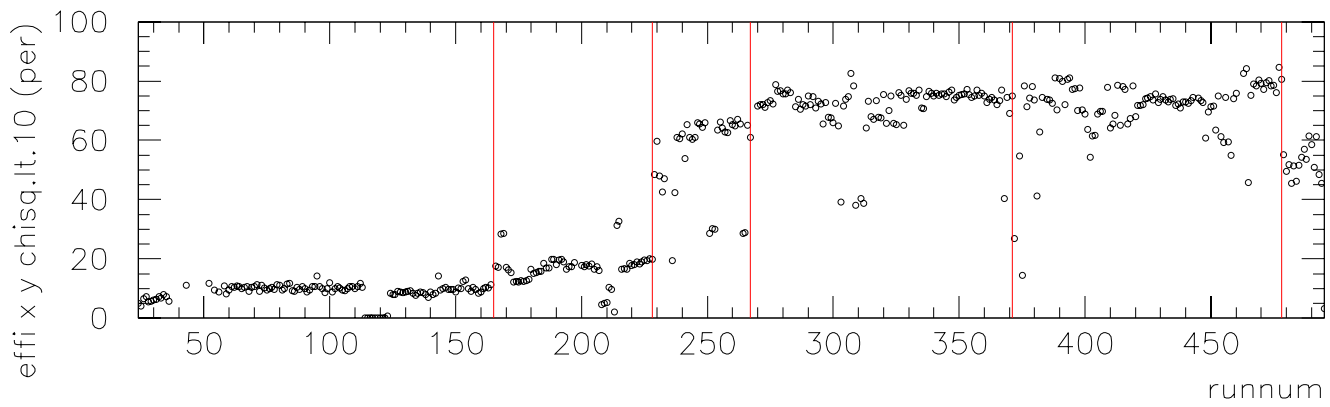
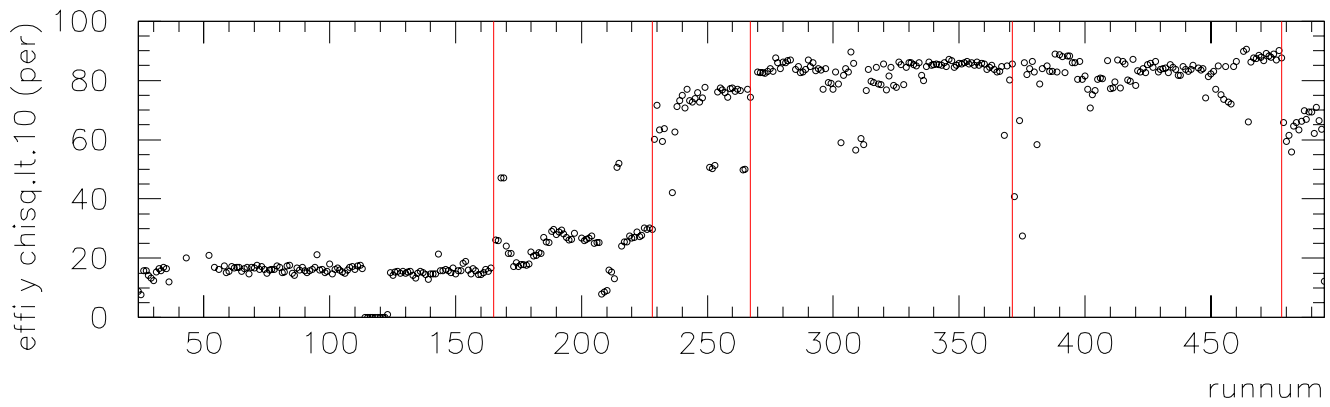
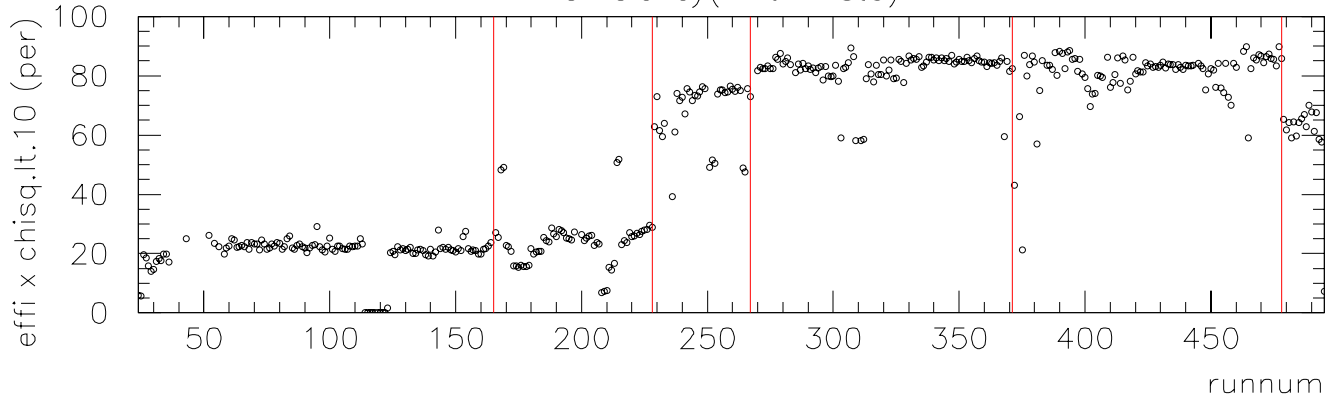
efficiency(nhit3ifirst0)



efficiency(nhit3ifirst1)



efficiency(nhit4ifirst0)



efficiency(nhit4ifirst1)

