8-Apr-2016

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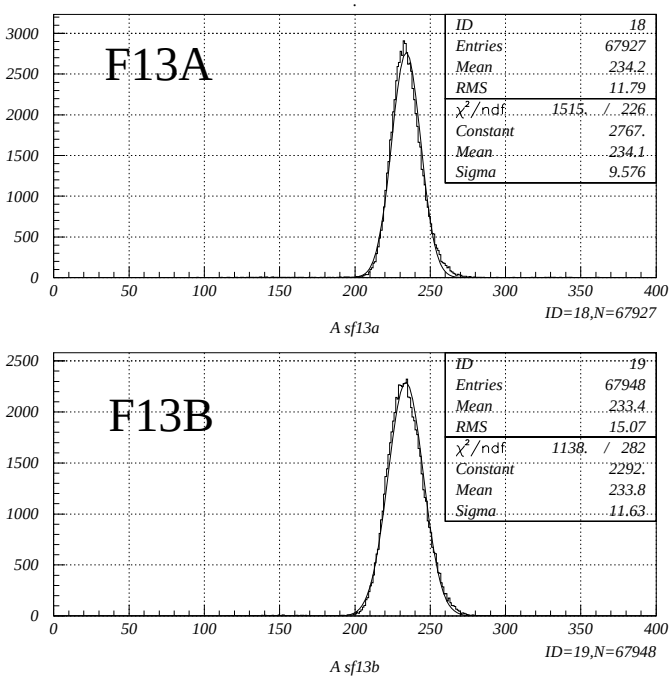
Memo on Samurai standard detectors from 7-Apr-2016 overnight run

- SBT : SF13A, SF13B
- BDC1, 2

SBT (F13A,F13B)

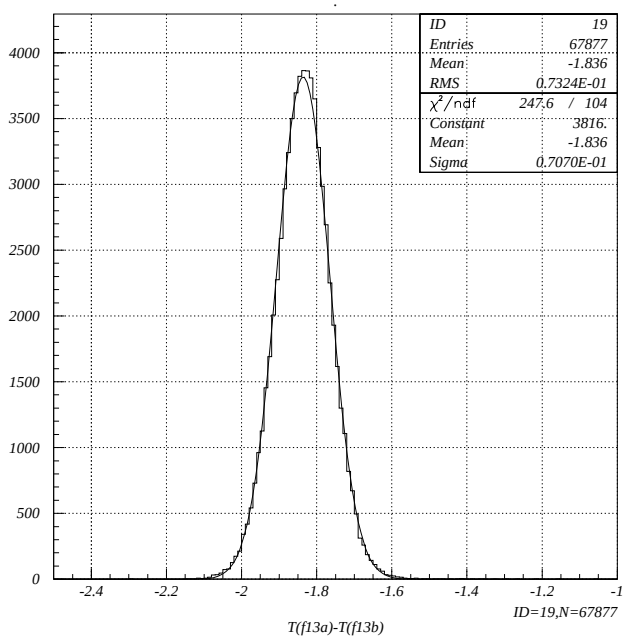
- HV set
  - signal~ 400mV @B3F patch. cf: V_{th}(B2F) = 40mV
  - HV : ~1000V (F13A), ~1030V (F13B), with booster on
- Scintillator
  - 120mm x 120mm x 0.2mm ^{t}

- Pulse height distribution



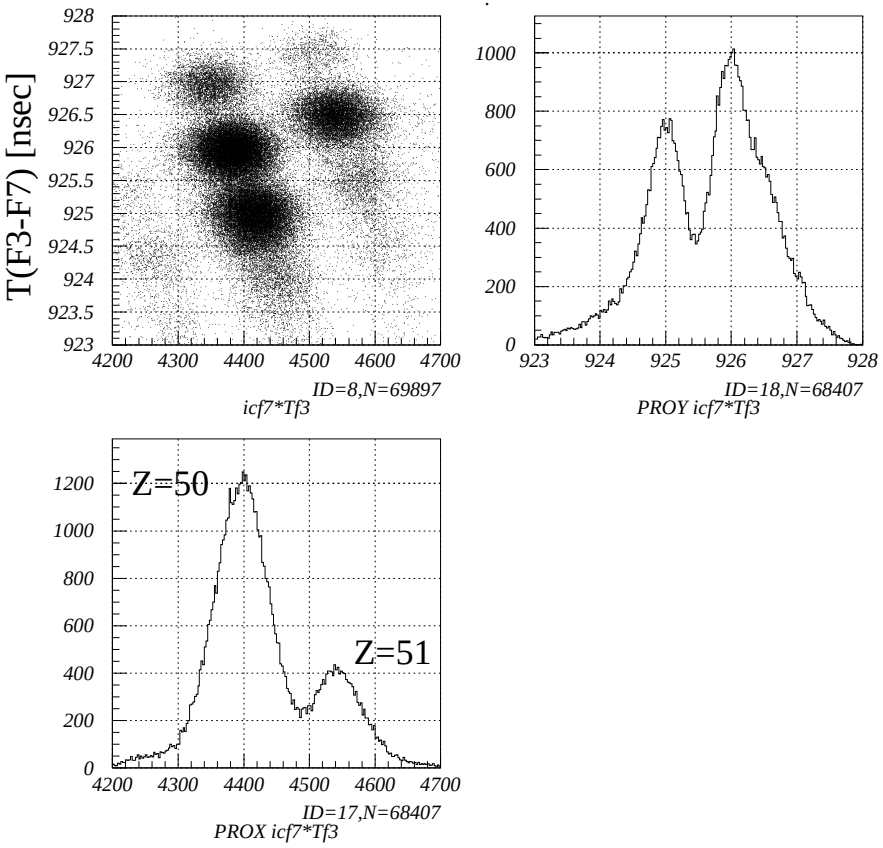
- σ_A/A : ~4.1%(SF13A), ~5.0%(SF13B)

- Time Resolution from T(F13A)-T(F13B)

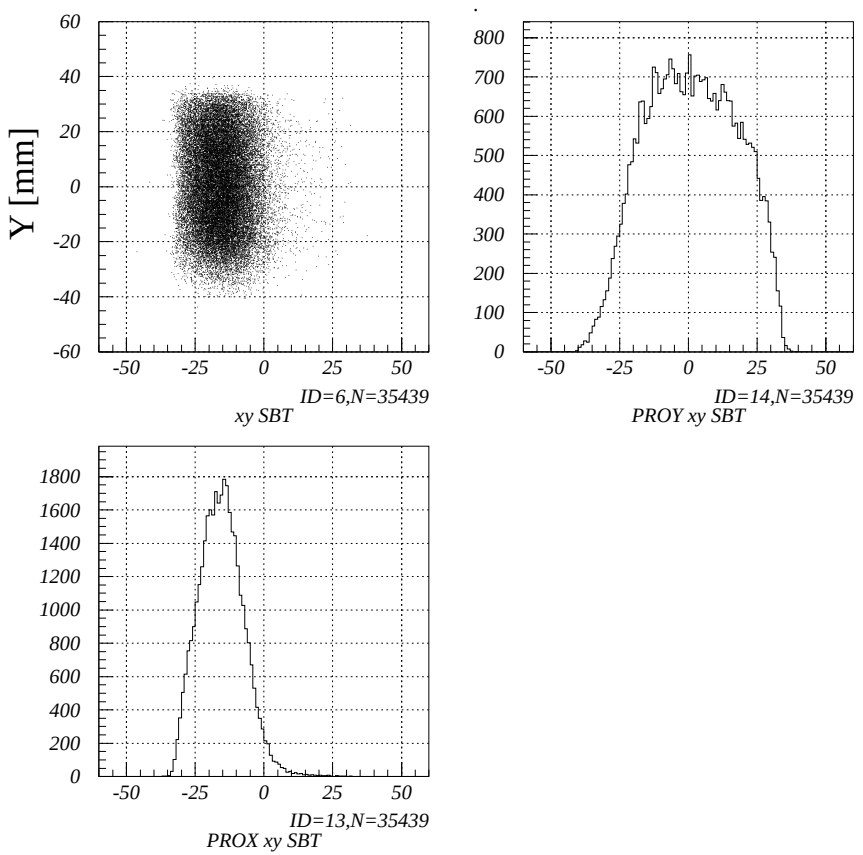


- σ_T (T_{F13A}-T_{F13B}) ~ 71 psec
  - → σ_T ~ 50 psec

- Secondary beam : Z=50+51



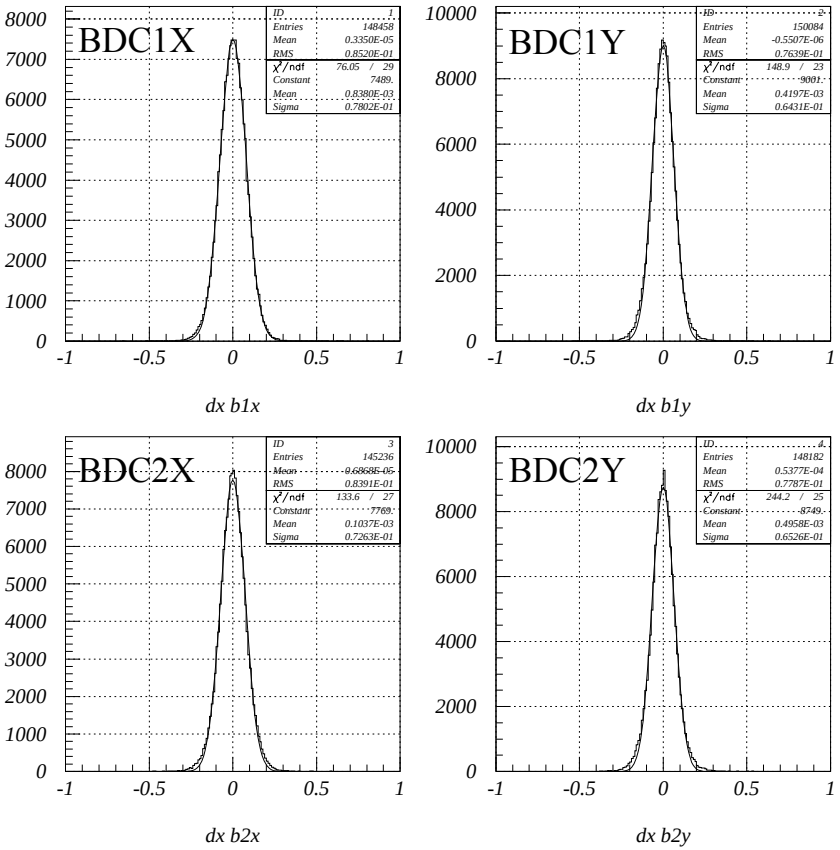
- Beam distribution (X,Y) @SBT



BDC

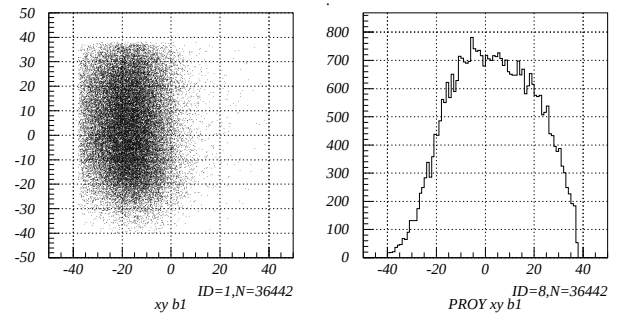
- Gas : $P(i\text{-}C_4H_{10})$= 30 torr
- HV setting : $V_{cathode} = V_{potential}$
- Efficiency
  - checked only at V= 350V & 400V
  - absolute efficiency not measured, since beam was wider
  - $\varepsilon_{tot}(350V) \sim \varepsilon_{tot}(400V) \sim 95.9\pm0.1\%$
    - probably at the HV plateau ~100%
    - actually >99.5% (only) for run's 1745 & 1746
  - $\varepsilon_{M1}(350V) \sim 1.6\%$, $\varepsilon_{M1}(400V) \sim 3.8\%$
- Position resolution
  - estimated from residue distribution
  - @350V : $\sigma_{BDCX} \sim 129\mu m$, $\sigma_{BDCY} \sim 111\mu m$
  - @400V : $\sigma_{BDCX} \sim 106\mu m$, $\sigma_{BDCY} \sim 92\mu m$
  - typically $\sigma \sim 100\mu m$
  - $\sigma_{Xplane} > \sigma_{Yplane}$: ?
- HV set for Sn beam
  - HV= 400V seems to be sufficient

Residue distribution

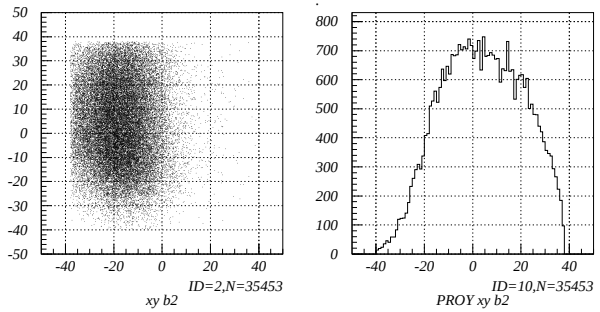


Beam profiles etc

- at BDC1, BDC2



BDC1(XY)



BDC2(XY)

- Phase space @target