

Memo on Samurai standard detectors

S13 (PolP)

Time (run) dependence of plane efficiency for $z=2$

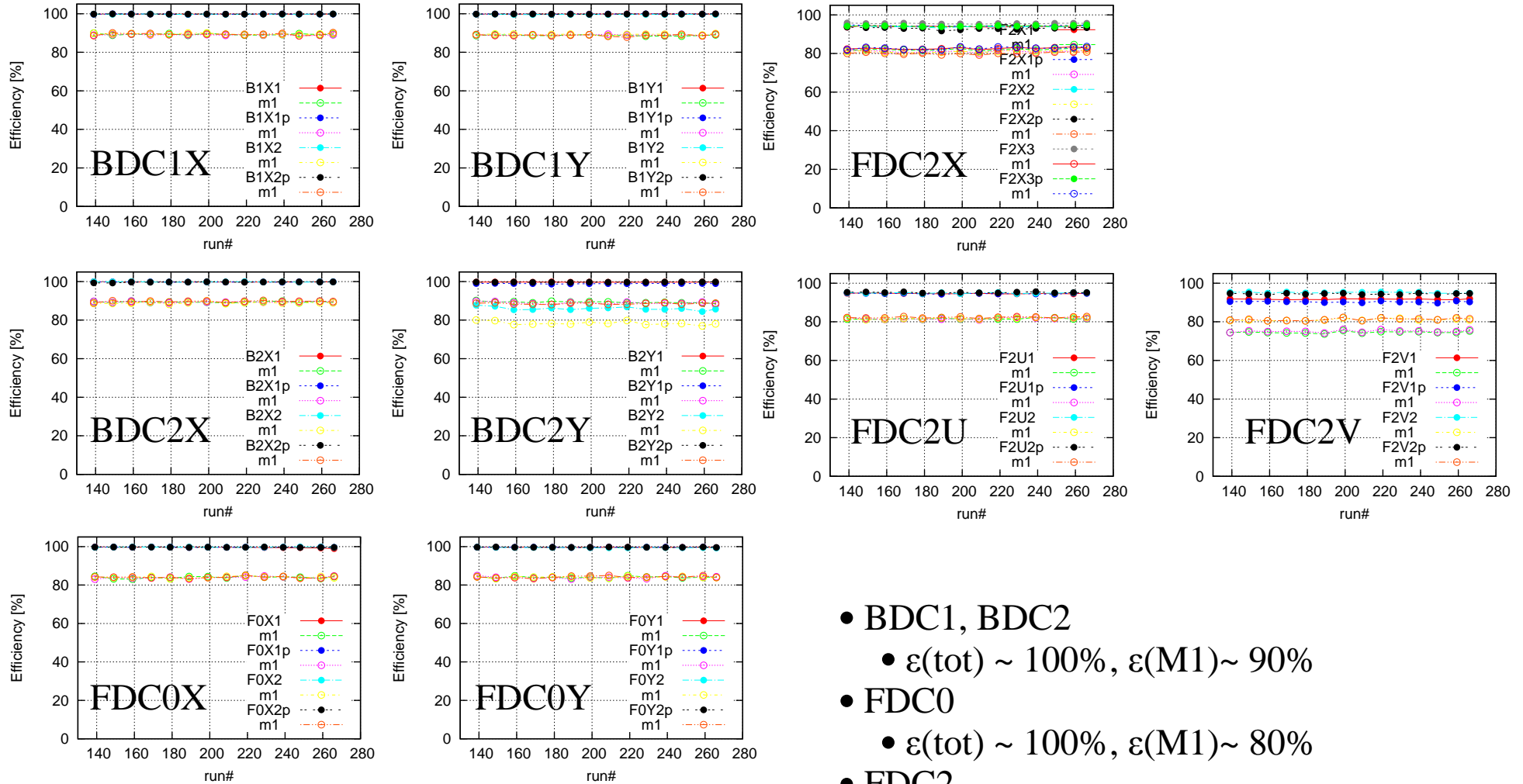
Summary

- (Absolute) plane efficiency for $z=2$ is monitored for ${}^6\text{He}+p$ & ${}^4\text{He}+p$ runs
 - (total) beam rate: 500 ~ 600 kHz
 - $\epsilon_{\text{tot}}(\text{BDC1, BDC2, FDC0}) \sim 100.0\%$, $\epsilon_{\text{M1}}(\text{BDC1, BDC2, FDC0}) \sim 80\sim 90\%$
 - stable among runs
 - BDC2-Y2 : several wires have lower efficiency
 - $\epsilon_{\text{tot}}(\text{FDC2}) \sim 95\%$, $\epsilon_{\text{M1}}(\text{FDC2}) \sim 80\%$
 - also stable among runs

- Plane efficiency of BDC1, BDC2, & FDC0 during production runs with high intensity is monitored
 - monitor conditions
 - coincidence register bit= 1 (ds-beam trigger)
 - $z(\text{SBT})=2$, pileup rejected
 - $z(\text{SBV})\geq 2$, rejected for $^4\text{He}+\text{p}$ runs
 - $z(\text{HOD})= 2$, for selected slats on both sides of beam stopper
 - drift chamber TDC: same region as used by STC selected to remove accidentals
 - constant accidental background is not subtracted, though
- $^6\text{He}+\text{p}$ runs
 - in every 10 runs ~ 6 hours
 - runs 139, 149, 159, 169, 189, 199, 209, 219, 229, 239, 248, 259, 266
 - #accepted events / run = 6500~8500 $\rightarrow \sigma_{\text{eff}} \sim 0.5\%$ @ $\epsilon=80\%$
- $^4\text{He}+\text{p}$ runs
 - in every 10 runs ~ 6 hours
 - runs 275, 285, 303, 304, 311, 319
 - #accepted events / run > 15k $\rightarrow \sigma_{\text{eff}} \sim 0.3\%$ @ $\epsilon=80\%$
 - samurai field changed : 1.3? T \rightarrow 1.30 T between run303 & 304

Plane Efficiency for $z=2$: run dependence, ${}^6\text{He}+p$ runs

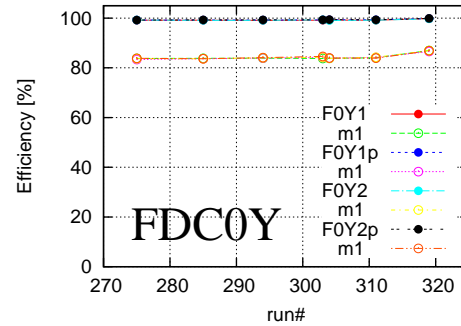
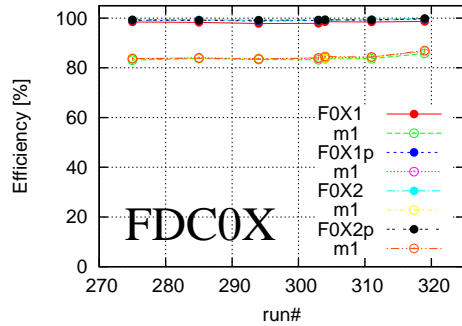
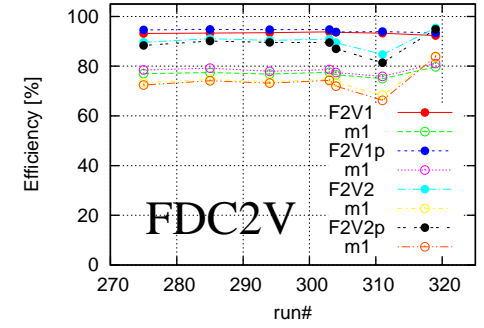
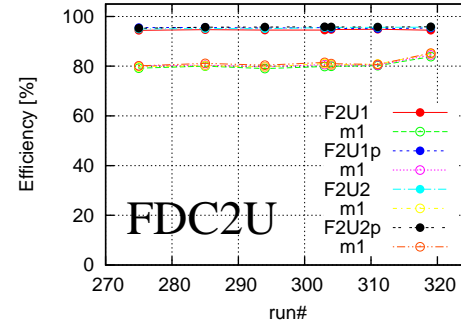
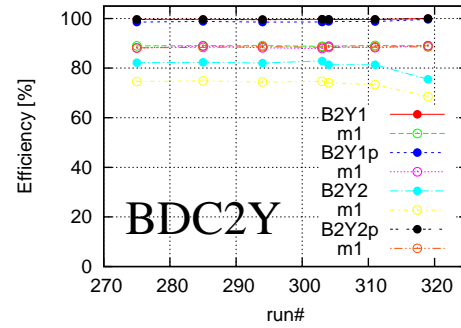
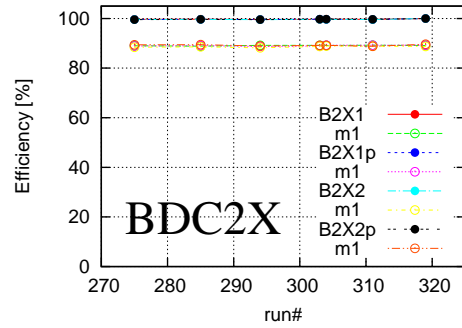
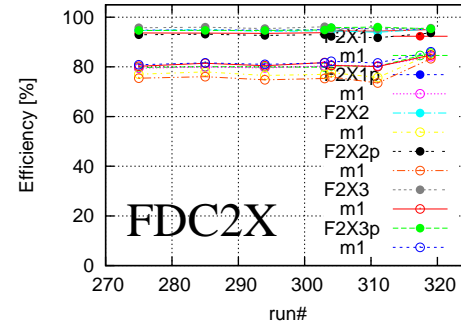
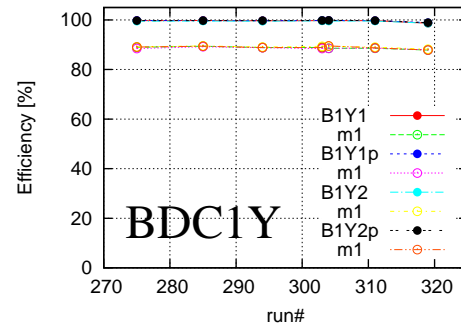
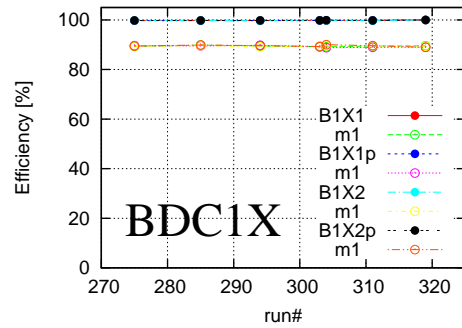
- sample: run 139, 149, 159, 169, 179, 189, 199, 209, 219, 229, 239, 248, 259, 266



- BDC1, BDC2
 - $\epsilon(\text{tot}) \sim 100\%$, $\epsilon(\text{M1}) \sim 90\%$
- FDC0
 - $\epsilon(\text{tot}) \sim 100\%$, $\epsilon(\text{M1}) \sim 80\%$
- FDC2
 - $\epsilon(\text{tot}) \sim 95\%$, $\epsilon(\text{M1}) \sim 80\%$

Plane Efficiency for $z=2$: run dependence, $^4\text{He}+p$ runs

- sample: run 275, 285, 294, 303, 304, 311, 319



- BDC1, BDC2
 - $\epsilon(\text{tot}) \sim 100\%$, $\epsilon(\text{M1}) \sim 90\%$
 - BDC2-Y2 : lower efficiency
 - go down from 311 to 319?
- FDC0
 - $\epsilon(\text{tot}) \sim 100\%$, $\epsilon(\text{M1}) \sim 80\%$
- FDC2
 - $\epsilon(\text{tot}) \sim 95\%$, $\epsilon(\text{M1}) \sim 80\%$
 - run311, 319 ? V?