

## Status of 4/5

- Patterns:
  - superstrip sizes: 12,8,8,8,12 steps on layers 0,1,2,3,4
  - (optimized)
  - coverage about 95%
  - smaller superstrips give a too low coverage
  - e.g. (10,3\*6,10): 85%
  - coverage vs d: flat
- fit constants: all 4 layer combinations
- Runs 155818 and 155821 (stream “a” files)
- L3 rate about 2 times bigger
- efficiency: predicted +30% (Barry)  
1+4.\*( $\text{ineff}$ ) on 2/3 of the wedges (5 layers)

- efficiency: measured (Vladimir)  
65% – 74%
- Single track purity:
  - Constraint calculation does not work yet in SVTMon
  - Indications that  $R_b \approx 0.225$  as before
  - $R_s \approx 0.025$  (hybrid tracks),  $R_d \approx 0.061$  (data)
  - therefore the purity is:
$$p = \frac{R_b - R_d}{R_b - R_s} = 0.82 \pm 0.027$$
  - 4/5 does not affect purity (to be confirmed!)
- One more check:  $D^0$  mass
  - signal/background not worse than before
- Other improvements:
  - 3 layer wedges: B4W8 works already (034)
  - new GB: better phi calculation

- Impact parameter resolution with different layer maps
- Update on track purity study

## SVT efficiency (Vladimir)

| Run    | Efficiency                          |
|--------|-------------------------------------|
| 155355 | 0.580 +- 0.008                      |
| 155398 | 0.600 +- 0.008                      |
| 155612 | 0.650 +- 0.009 (first pattern adj.) |
| 155818 | 0.740 +- 0.007 (4/5)                |
| 155895 | 0.660 +- 0.008 (back to 4/4 + 3/3)  |

## i.p. width

| Layermap | sigma (um)     |
|----------|----------------|
| 2345     | 60             |
| 1234     | 54             |
| 1235     | 52             |
| 1245     | 54             |
| 1345     | 48             |
| 145      | 85 (tail >35%) |

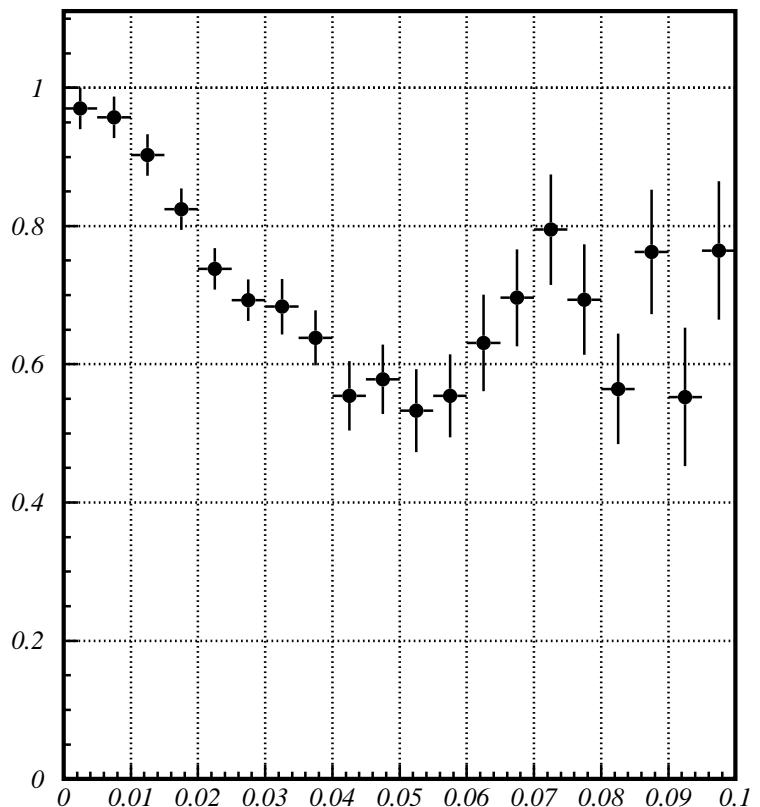


Figure 1: Track purity vs i.p. ( $\mu\text{m}$ )

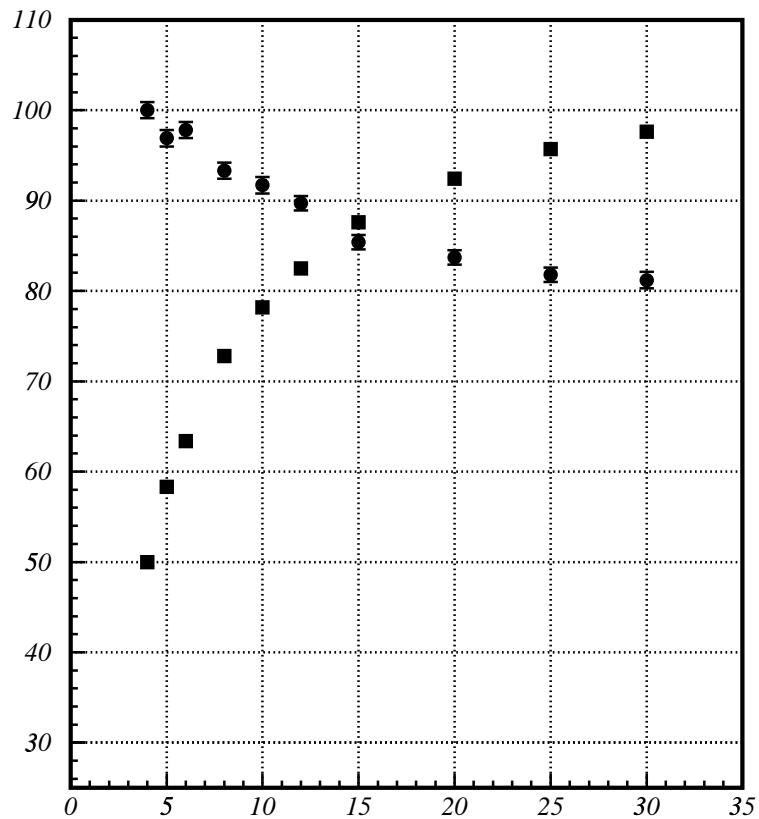


Figure 2: Efficiency and purity vs  $\chi^2$  cut

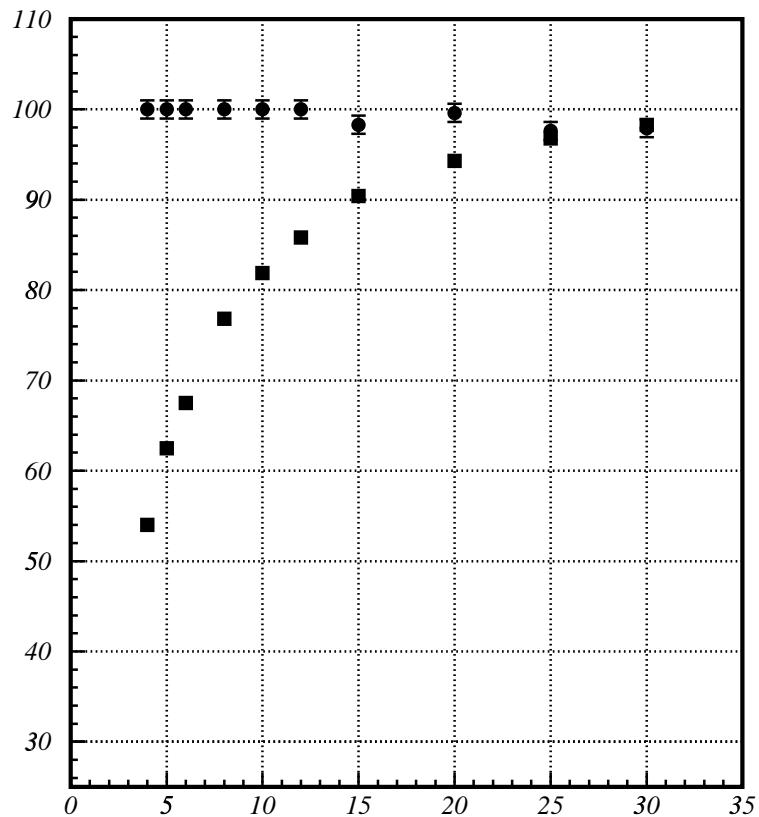


Figure 3: Efficiency and purity vs  $\chi^2$  cut,  $|d| < 100 \mu\text{m}$

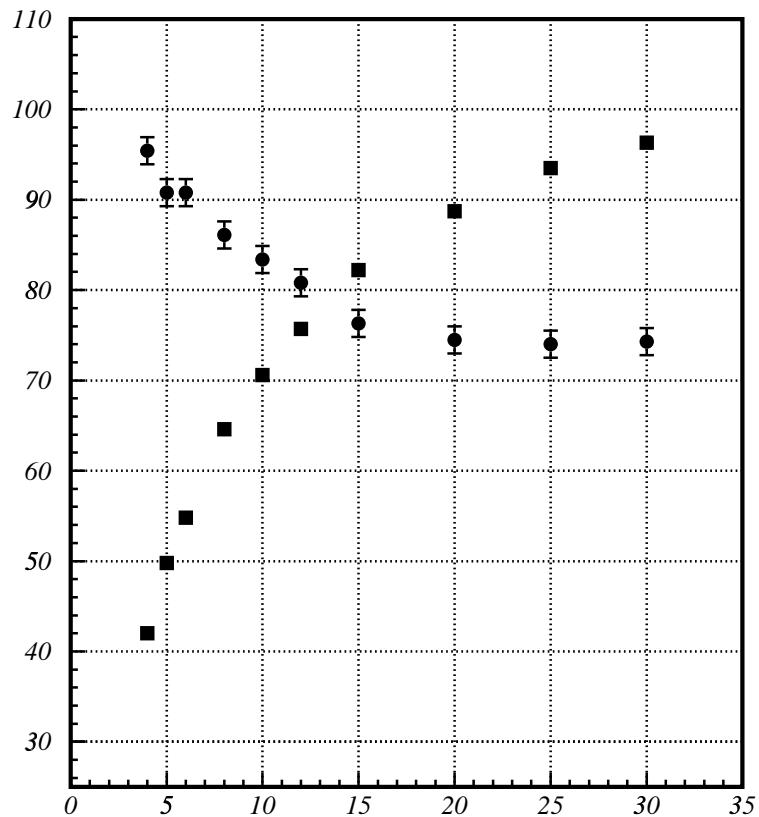


Figure 4: Efficiency and purity vs  $\chi^2$  cut,  $|d| > 100 \mu\text{m}$

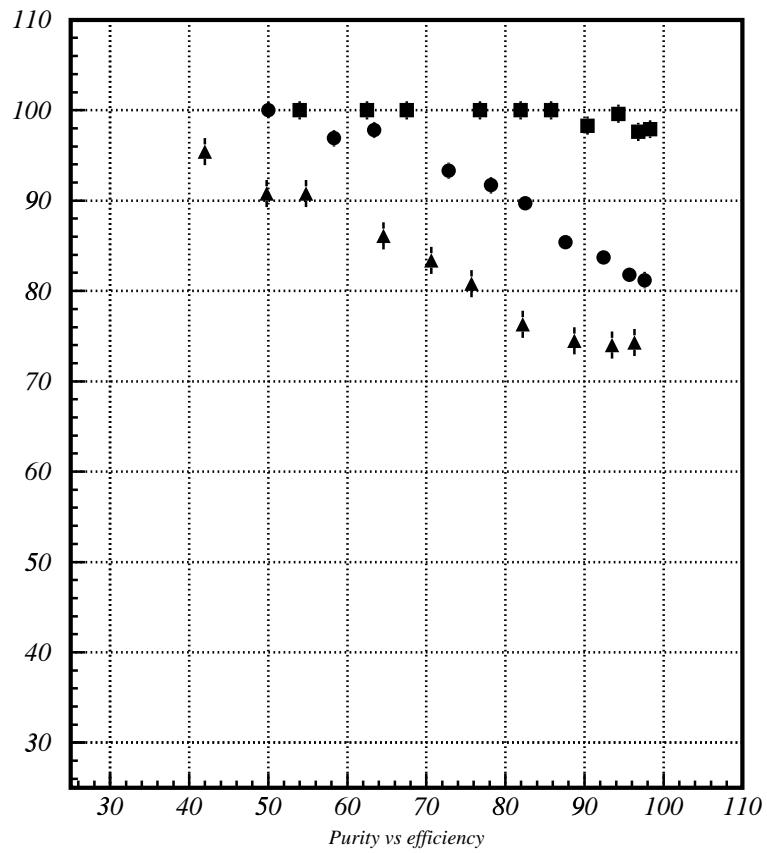


Figure 5: Purity vs efficiency

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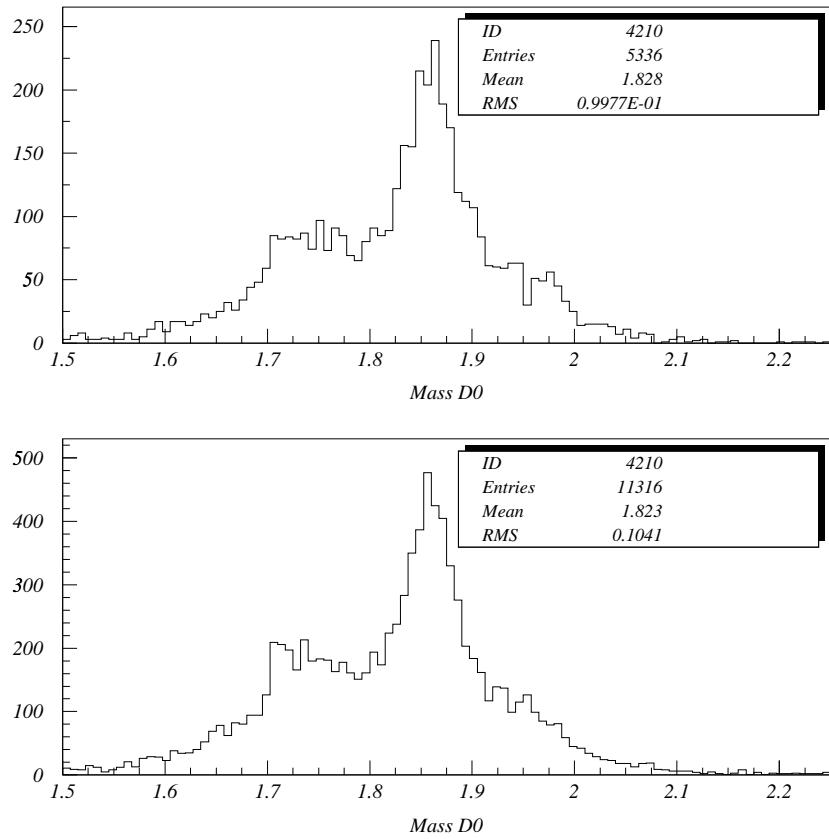


Figure 6:  $D^0$  mass for runs 155895 (4/4) and 155821 (4/5)

*Test 12345*

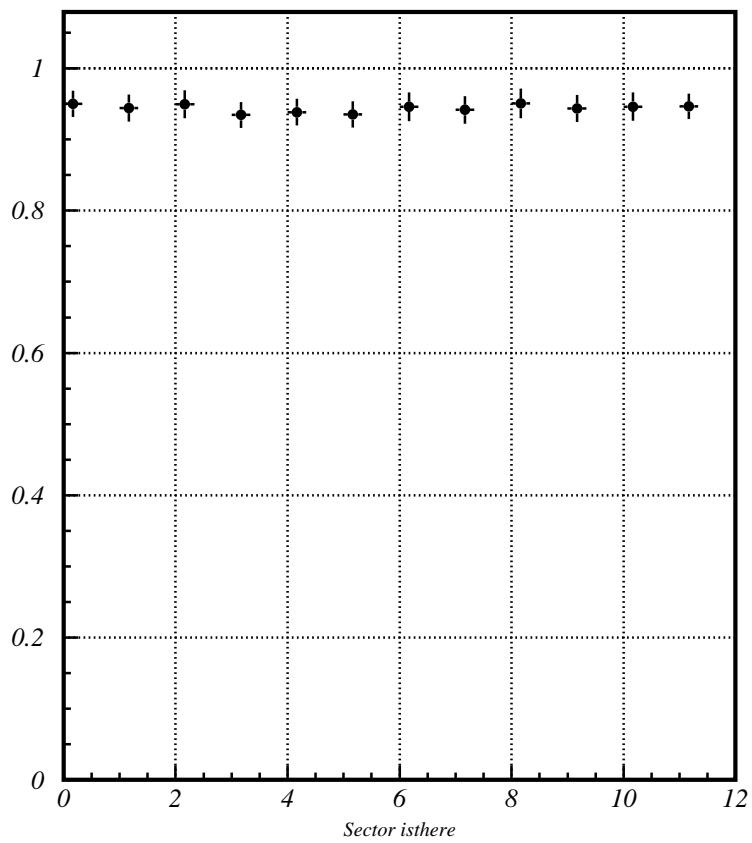


Figure 7: Pattern coverage vs wedge number

*Test 12345*

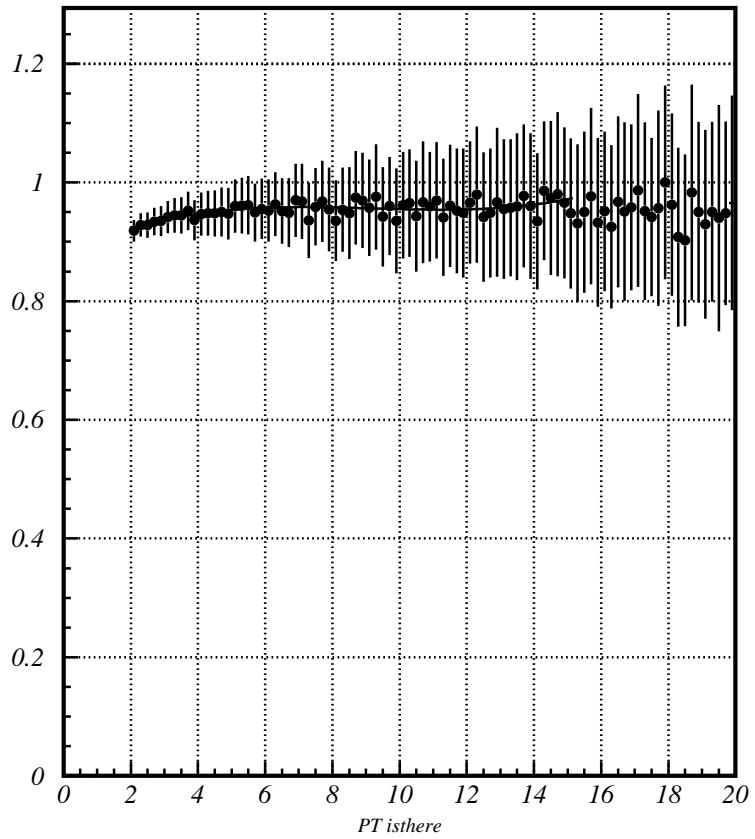


Figure 8: Pattern coverage vs  $P_T$

*Test 12345*

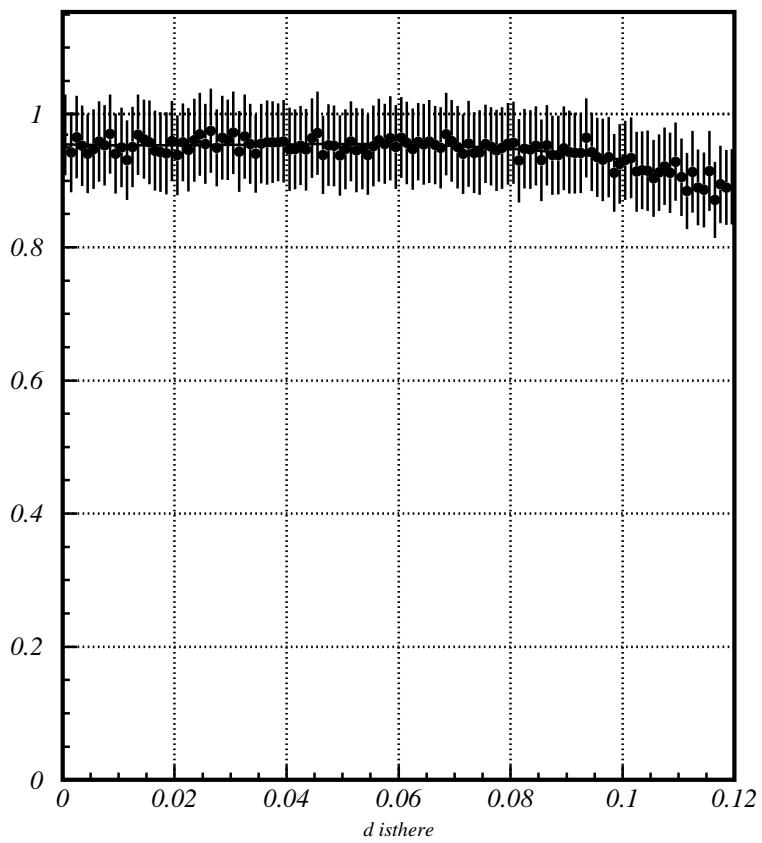


Figure 9: Pattern coverage vs i.p.