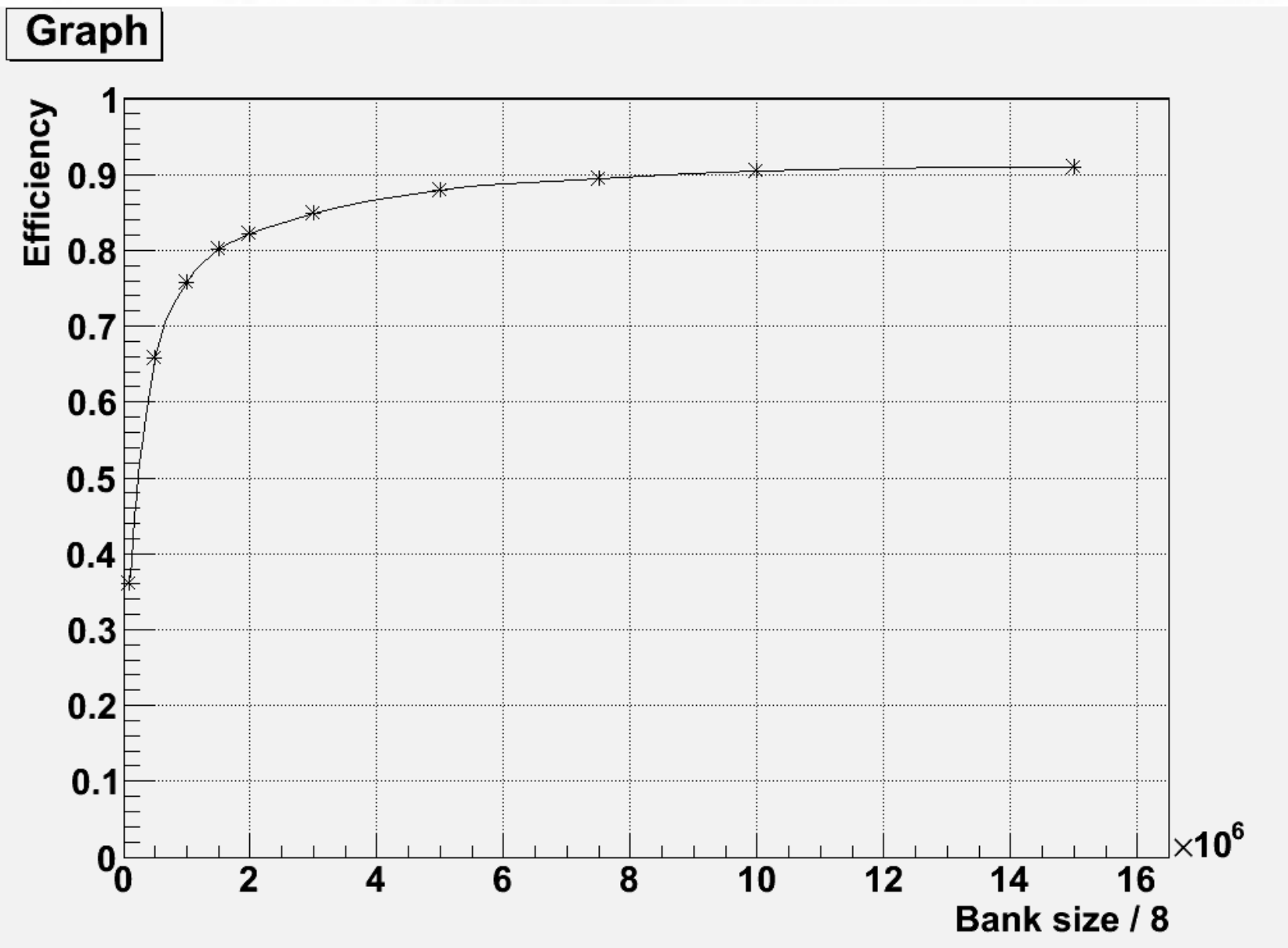


TSP bank: 50x64x36

Single-muon turn-on curve (up to 120M patterns / region):
(useful to judge where the efficiency reaches a plateau)



Available on the grid at uct2-dc1.uchicago.edu:/pnfs/uchicago.edu/data/tier3/user/user.AntonKapliy/hugeBank/patt/
(use superstrip label "50x64x32n200M")

Split architecture settings

- Allow 10/11 roads (a miss in either pix or sct)
 - B-layer always has a hit
 - 9/11 (double misses) NOT allowed
- Majority recovery only applied to 11/11 fits with bad chi2
- 8L tracks are filtered with in-road hitwarrior
 - HITWARRIOR=1 in latest SVN
 - This setting reduces final # fits AND **improves final efficiency** by killing 8L tracks that result in bad 11/11 combinations that could mistakenly be chosen by 11/11 hitwarrior

fits in split vs TSP architecture in an identical set of 50 Whbb @ 10³⁴ events

For each region

Split arch
(first stage)

| 8L bank | 8/8 fits | 7/8 fits in 7/8 roads | 7/8 recovery fits | 8L total |
|---------|----------|-----------------------|-------------------|----------|
| 0 | 140 | 1,867 | 1,292 | 3,299 |
| 1 | 321 | 4,173 | 2,993 | 7,487 |
| 2 | 199 | 2,595 | 1,847 | 4,641 |
| 3 | 126 | 1,814 | 1,171 | 3,111 |
| 4 | 224 | 2,869 | 2,116 | 5,209 |
| 5 | 1,367 | 9,678 | 13,011 | 24,056 |
| 6 | 161 | 1,866 | 1,520 | 3,547 |
| 7 | 96 | 1,444 | 876 | 2,416 |

Split bank (8L)
SS = 32 strips (as opposed to 45!)
patts loaded = 3.1M (out of 3.1M)
(central-only patterns, per region)

Split arch
(second stage)

| 4L/11L bank | 11/11 fits | 10/11 fits in 10/11 roads | 10/11 recovery fits | 11L total |
|-------------|------------|---------------------------|---------------------|-----------|
| 0 | 235 | 556 | 1,706 | 2,497 |
| 1 | 505 | 1,246 | 3,662 | 5,413 |
| 2 | 265 | 817 | 1,955 | 3,037 |
| 3 | 250 | 708 | 1,812 | 2,770 |
| 4 | 204 | 539 | 1,502 | 2,245 |
| 5 | 934 | 1,322 | 6,900 | 9,156 |
| 6 | 224 | 471 | 1,670 | 2,365 |
| 7 | 168 | 561 | 1,198 | 1,927 |

Split bank (4L)
SS = 25x36 pixels
patts loaded = 0.6M (out of 0.6M)
(central-only patterns, per region)

Final 11L track efficiency: 78.9%
(all primary tracks)

Split arch
(total)

| Total CM | 8/8+11/11 fits | 7/8+10/11 fits | 7/8+10/11 recovery fits | 8L+11L total |
|----------|----------------|----------------|-------------------------|--------------|
| 0 | 375 | 2,423 | 2,998 | 5,796 |
| 1 | 826 | 5,419 | 6,655 | 12,900 |
| 2 | 464 | 3,412 | 3,802 | 7,678 |
| 3 | 376 | 2,522 | 2,983 | 5,881 |
| 4 | 428 | 3,408 | 3,618 | 7,454 |
| 5 | 2,301 | 11,000 | 19,911 | 33,212 |
| 6 | 385 | 2,337 | 3,190 | 5,912 |
| 7 | 264 | 2,005 | 2,074 | 4,343 |

In *non-busy* regions,
split architecture has a
factor of 30 fewer fits.
In *busiest* regions, it has
factor of 300 fewer fits.

TSP arch
(50x64x36)

| Total Alberto | 11/11 fits | 10/11 fits in 10/11 roads | 10/11 recovery fits | 11L total |
|---------------|------------|---------------------------|---------------------|-----------|
| 0 | 11,713 | 51,841 | 109,061 | 172,615 |
| 1 | 101,837 | 232,845 | 778,870 | 1,113,552 |
| 2 | 39,886 | 136,886 | 372,696 | 549,468 |
| 3 | 28,731 | 64,109 | 266,261 | 359,101 |
| 4 | 24,606 | 66,152 | 231,793 | 322,551 |
| 5 | 822,866 | 830,149 | 6,702,033 | 8,355,048 |
| 6 | 14,787 | 46,532 | 144,670 | 205,989 |
| 7 | 7,855 | 33,653 | 69,667 | 111,175 |

Alberto bank:
SS = 50x64x36
patts loaded = 104M (out of 125M)
(central-only patterns, per region)

Efficiency: 77.2%
(all primary tracks)