Comparing pattgen & patconst

- Pattgen bank: 2.2M*4 per region
- Patconst bank: ~2.5M*4 per region
  - Roughly equivalent
  - Cut from the bottom to 2.2M
- Comparison is in three eta regions:
  - 0.0 – 1.0
  - 1.0 – 2.0
  - 2.0 – 2.5
  - 0.0 – 2.5 (cumulative)
Coverage caveat

• Coverage is computed only for “clean” tracks:
  – Only 1 cluster/hit in every logical layer
    • (except for a few allowed overlap cases)
    • (particularly in endcap region)
  – “Clean” tracks are ~1/3 of total single muons

• A real coverage gap in layer assignment will:
  – Get rejected as “unclean”
  – Won't show up in final coverage

• Possible fix: ftksim-like functionality
  – See if any roads are found in AM (11/11 only)
  – Could be easily done with Guido version
CORRINNE: If two hits are found in the same logical layer:

- If one is barrel and one endcap, it's definitely OK, take the barrel hit
- Two endcap hits: same physical disk: discard
- Two endcap hits on opposite sides makes no sense: discard
- Two endcap hits on same side: different disks: take the lower-z
- ediff != 0: Different eta idx is no good, free and exit
Patconst coverage is 20% lower at 2.2*4 bank size. This was observed before!
But efficiency is only 5% lower (thanks to majority recovery)

Note: if coverage is really overstated, then majority recovery is even more dramatic than shown in the figure!
Central eta (0..1)

Coverage is roughly the same, but efficiency is better than all-eta case.
Eta (1..2) (includes the crack region)

Coverage & efficiency turn-on curves

Both coverage and efficiency are lower in this region
Pattgen peculiar behavior: efficiency drops below coverage.

Suspect that coverage is overstated in endcaps (see earlier slide)
Also, efficiency definition is ambiguous thanks to chi2 / matching criteria
Summary of pattgen patterns in three eta bins

Another peculiar thing: eta=2.0 – 2.5 has highest “coverage” & lowest efficiency!
Summary of patterns-from-const in three eta bins

Coverage & efficiency turn-on curves

Again, coverage looks very overstated in forward-most region (eta = 2.0 – 2.5)