

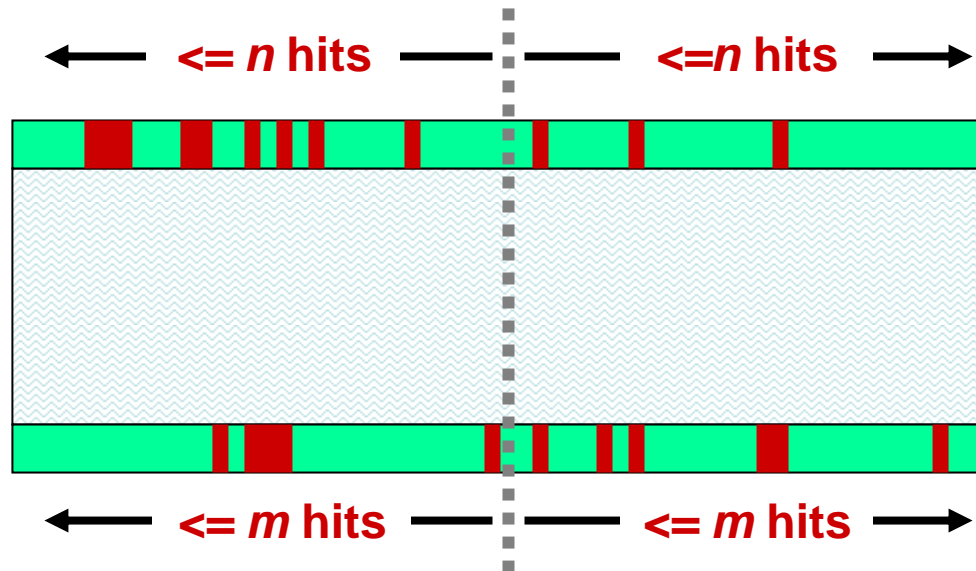
# Modeling TKR Readout Effects

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# In Each Plane

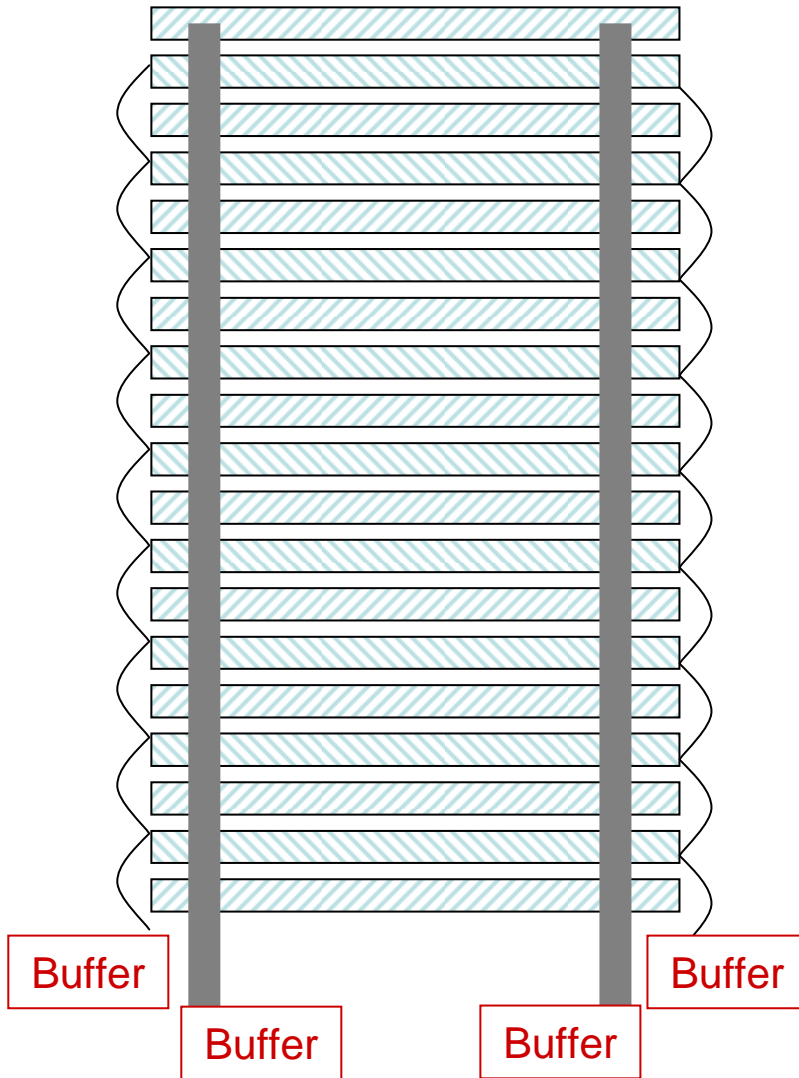


Only the first  $m$  or  $n$  hits are kept , where  $m, n \leq 64$

This is adjustable by plane (maybe even end?)

*(Currently handled in MC, with  $n = 64$ )*

# On Each Cable



There are 8 cables on each tower. Each cable reads out one-half of one face of every other tray.

No more than **128** hits can be stored in each cable buffer.

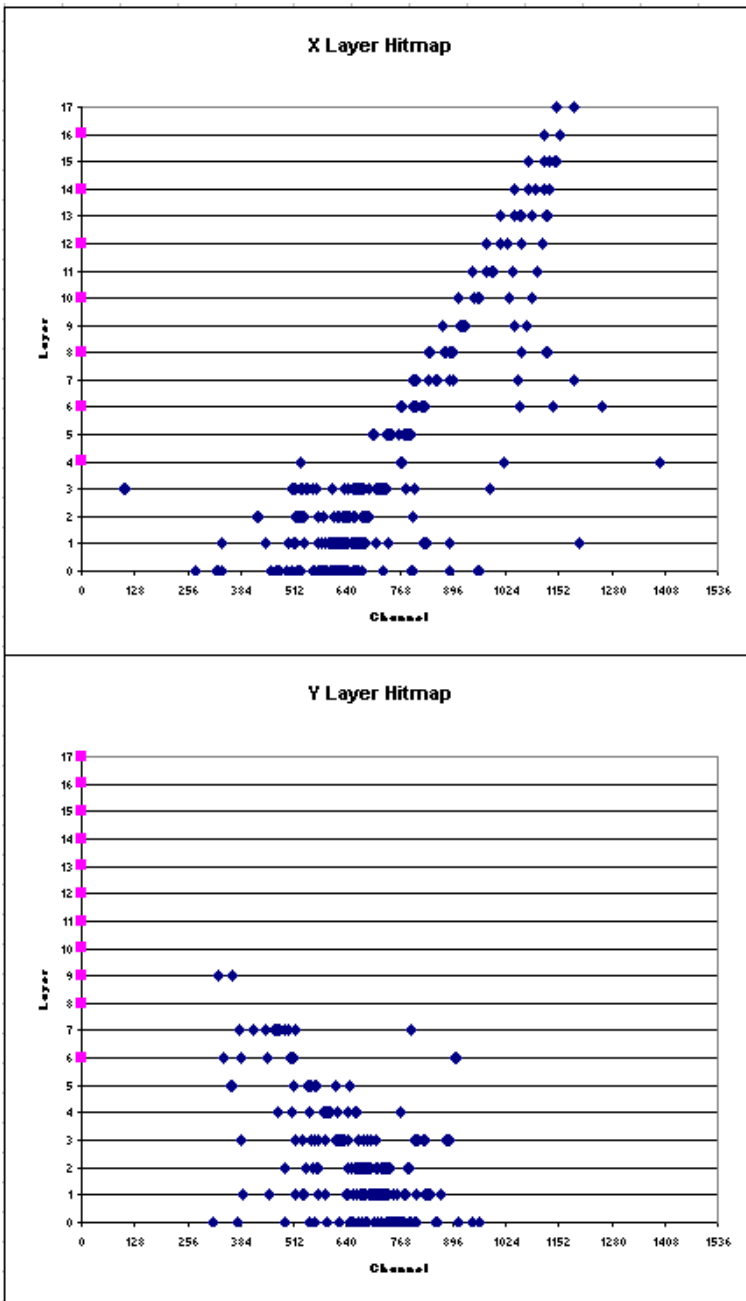
The hits are read into the buffer **from the bottom up**.

**(Not in MC)**

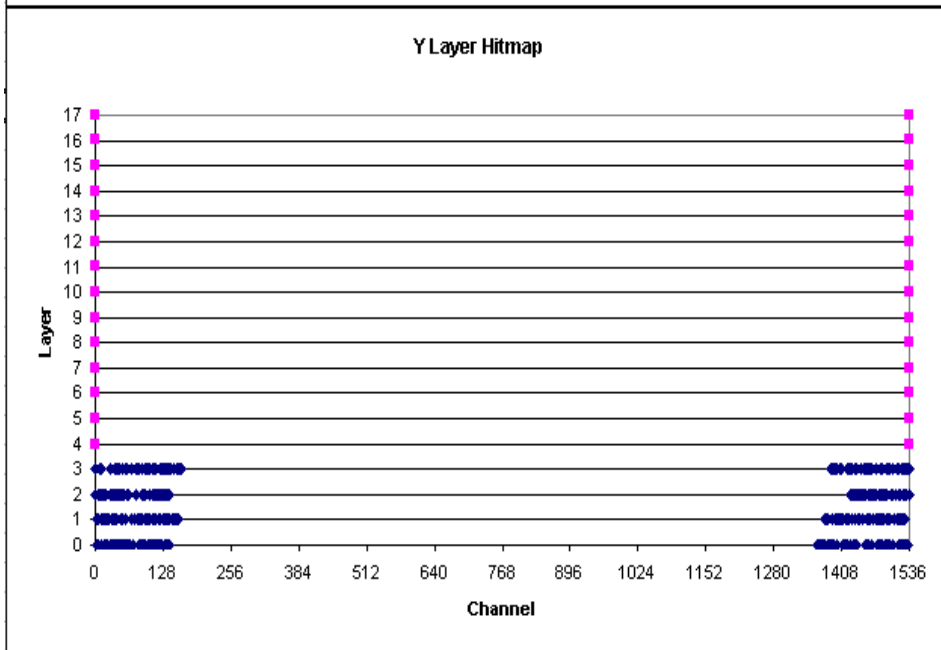
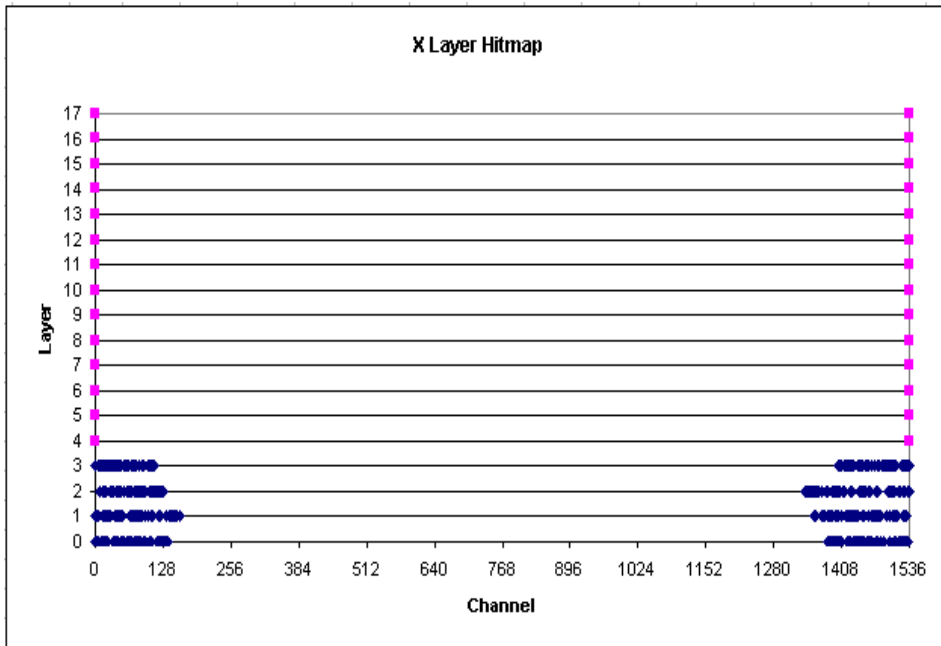
# An Air Shower (real data!)

In x view, hits at top and bottom of shower are mostly on different cables.

In y view, they are on the same cables, and the top hits are lost.



*Pink squares mark truncated planes.*

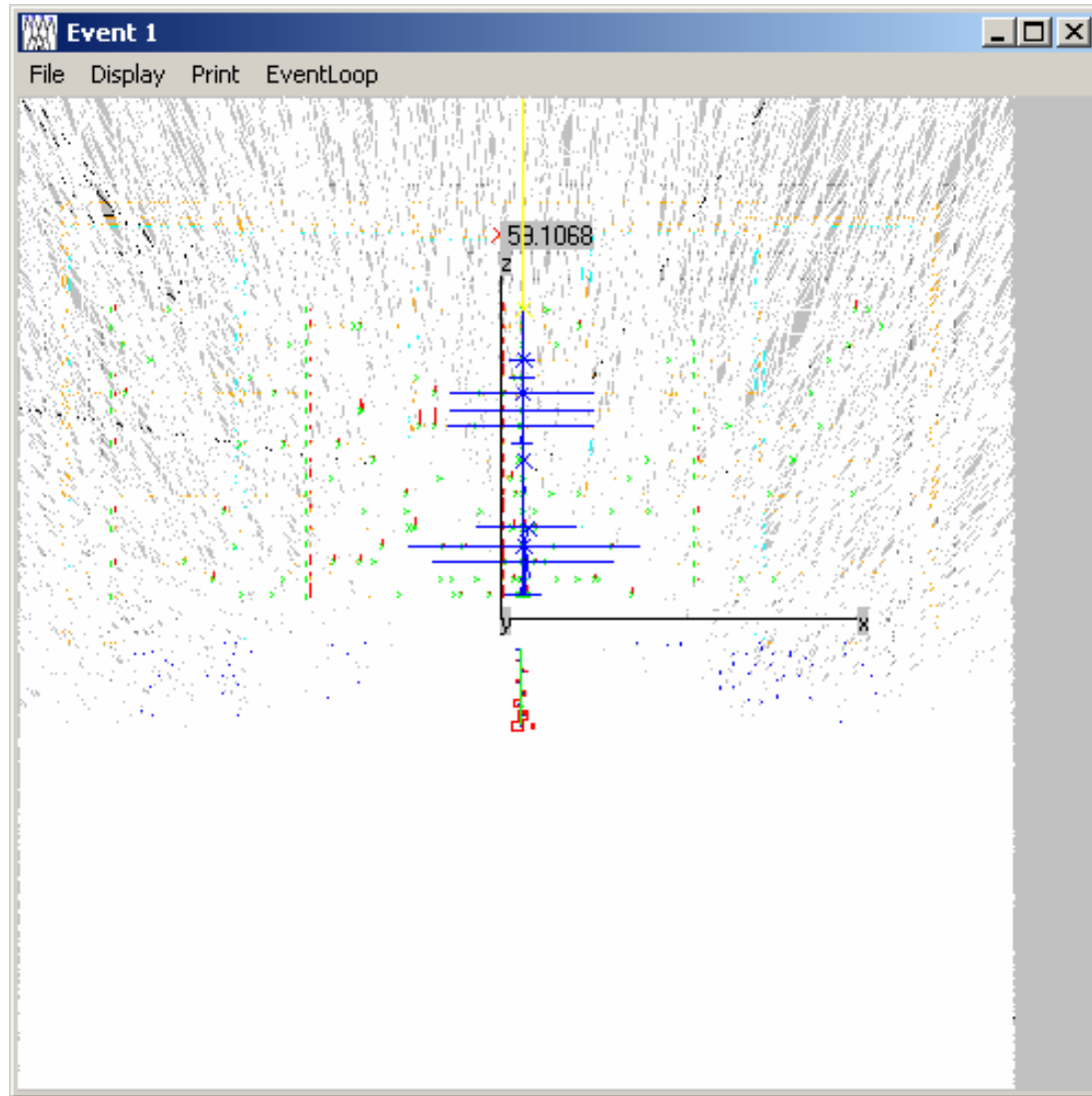


# This is a real event!

Diagnostic info says every plane is truncated to 64 at both ends...

Not much to go on!

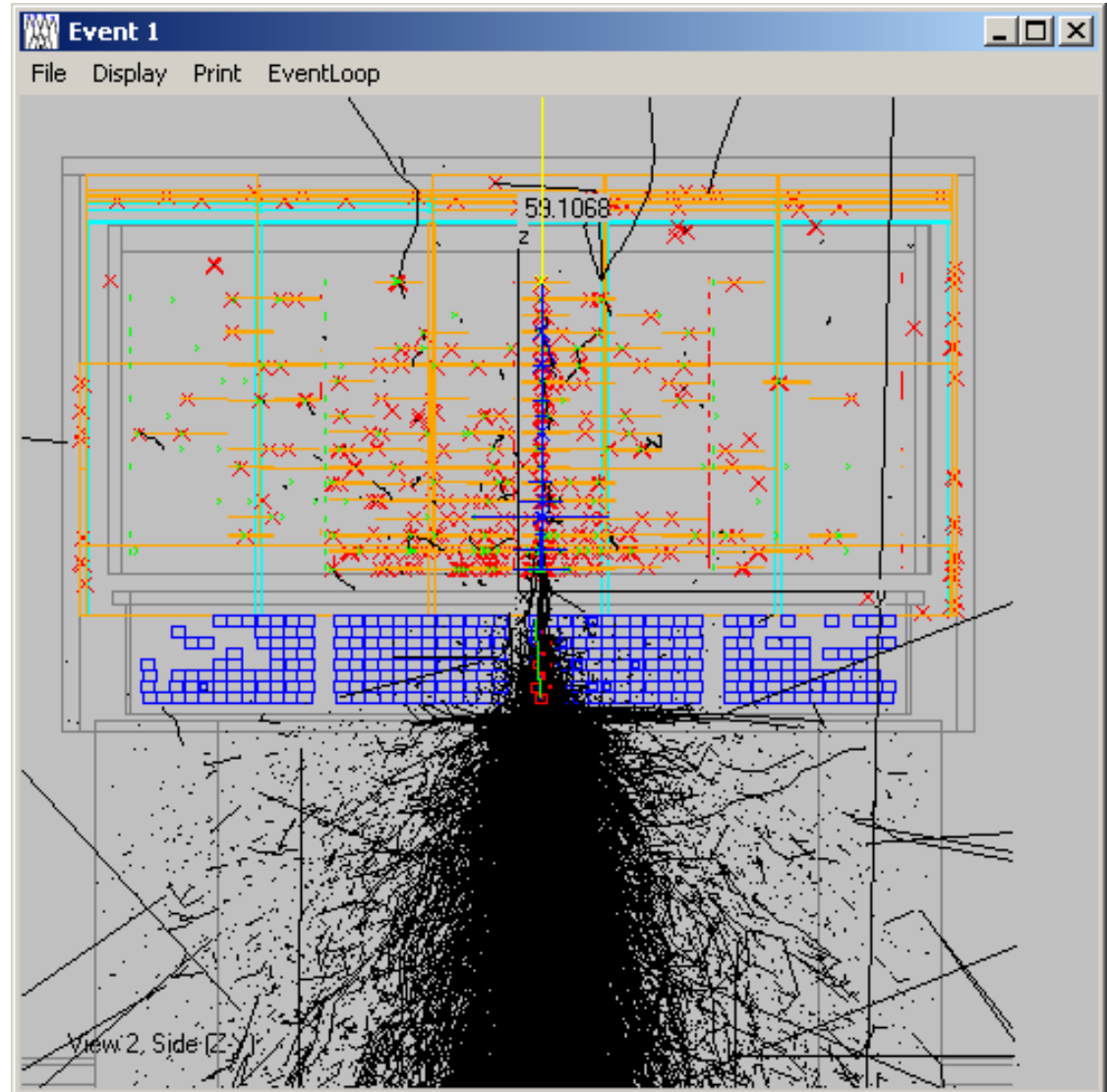
# A 500-GeV Gamma (Simulated, of course!)



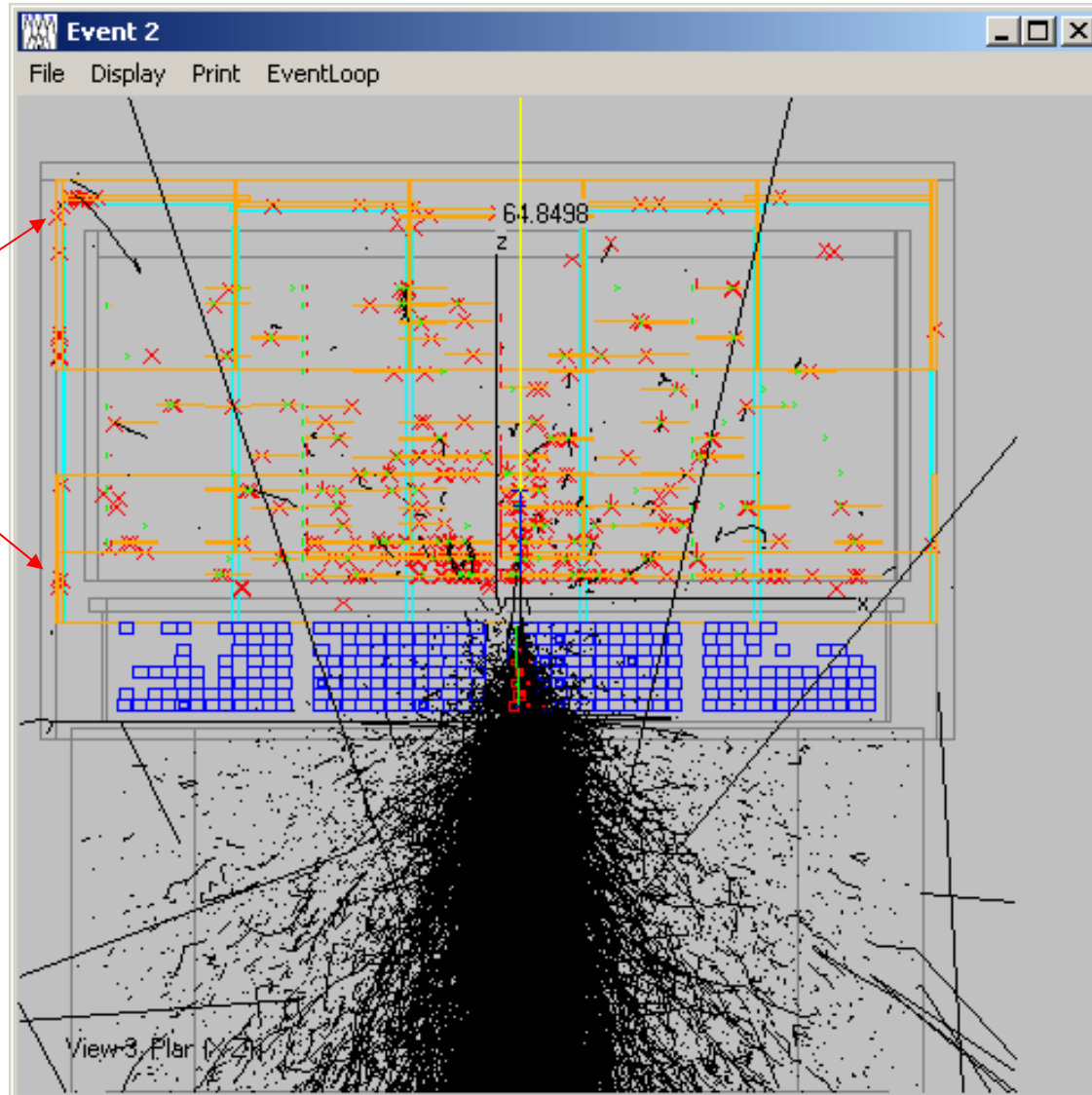
# Oops! Now without the Neutrals!

red x's are MC position hits, ACD and TKR

Not as bad as I feared it would be!



# Another One



**ACD hits**



# So What Now?

- The Problem
  - The showers from real data develop from the top down.
  - Albedo from the calorimeter is concentrated at the bottom.
  - We can't do much at present (maybe ever!) with lots of hits in a plane.
    - At the head of the track, the combinatorics are overwhelming.
    - Reconstruction in the dense part of the shower is random.
- The questions
  - Should we limit the number of hits read out from the bottom planes, to make sure that we see all the hits from the top planes?
    - We don't have to decide until we're in orbit!
      - But we don't want to be too surprised!
  - Should we add this effect in the simulation (Yes, I think!)