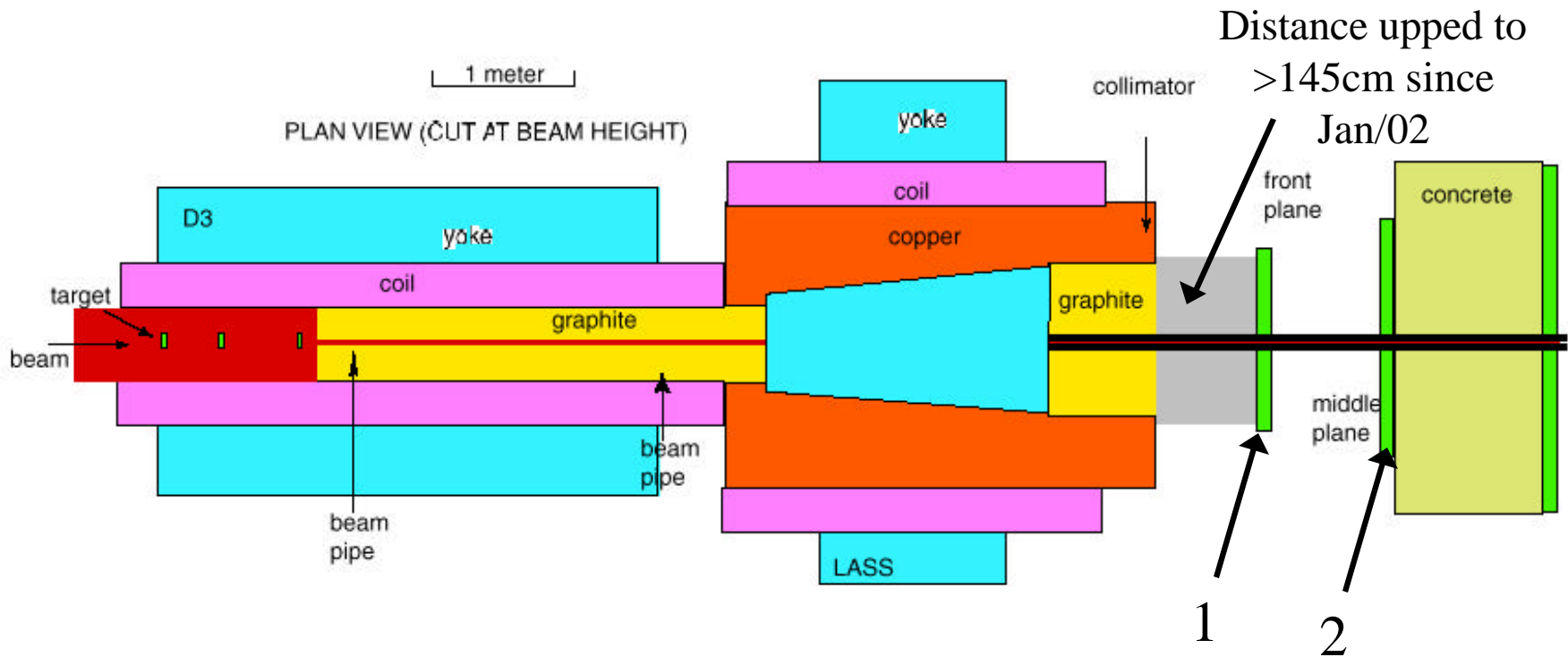
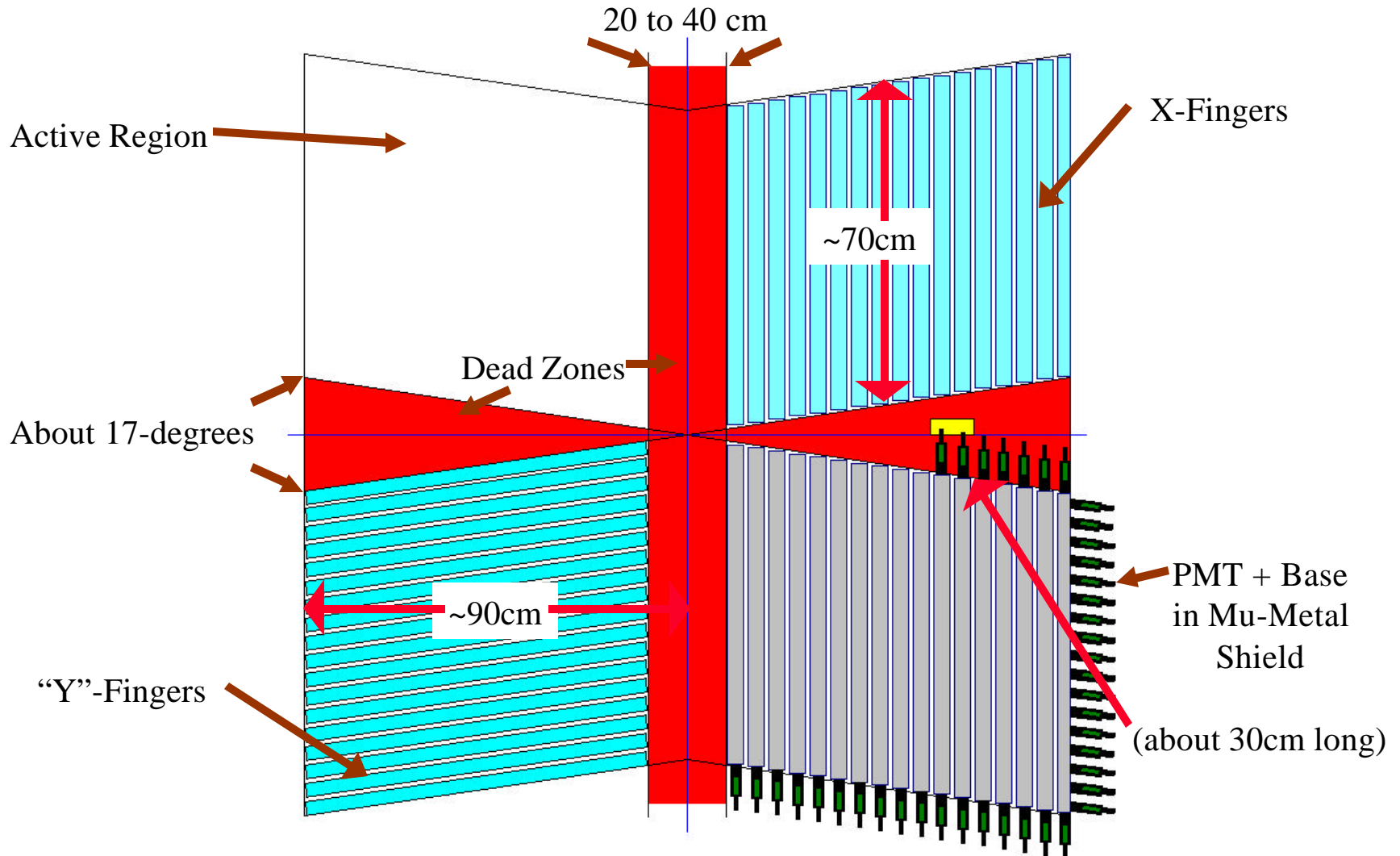




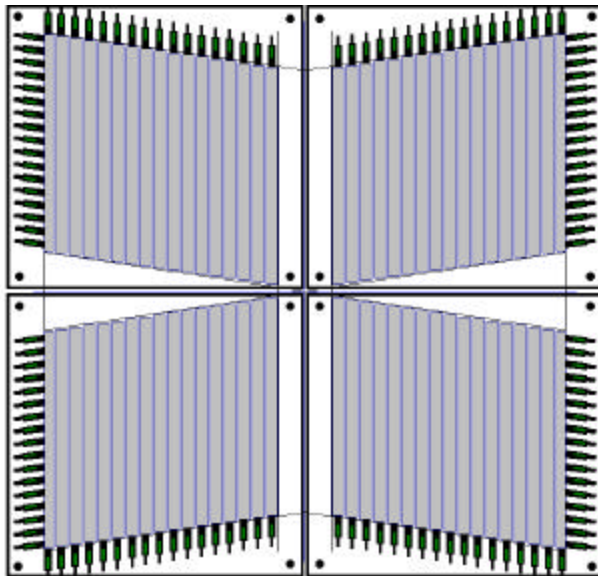
## Hodoscope Placement, E160:



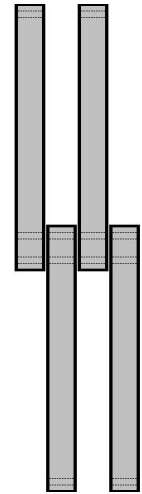
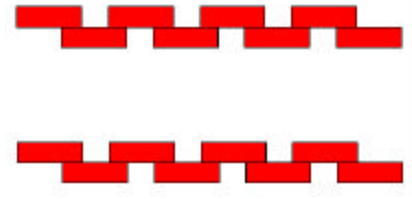




Design will hold subplanes in individually mounted light-tight boxes that mount via pins to a frame

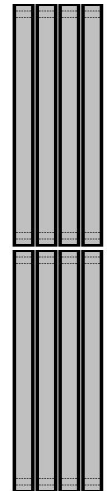
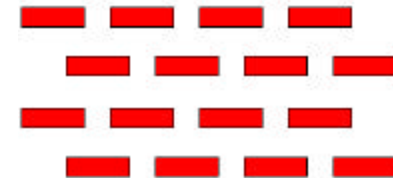


Stagger the Subplane units in Z

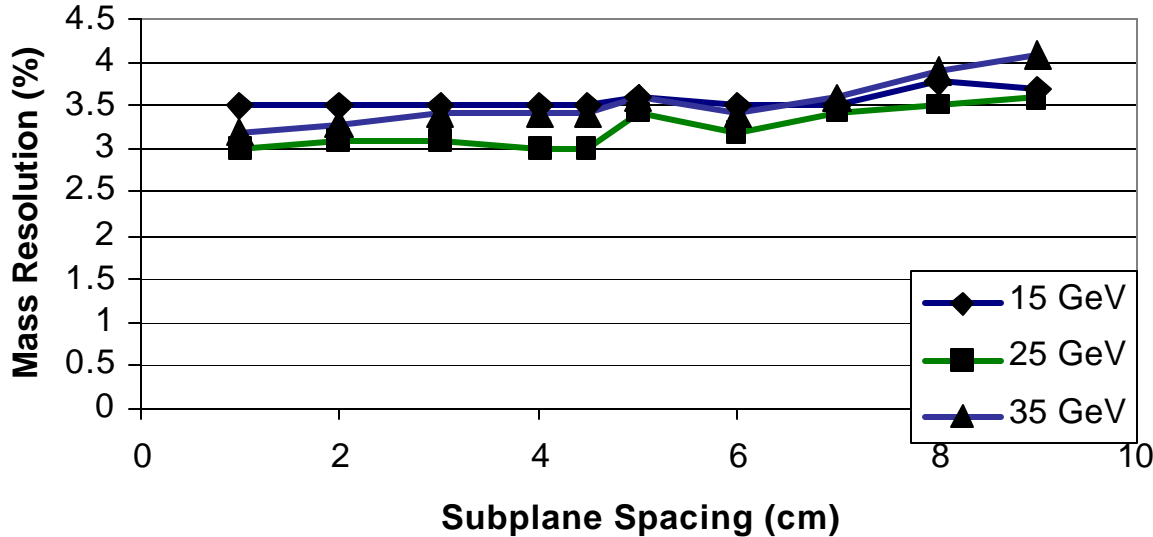


- +: Muons will hit one of every two
- : Tubes & Bases in high background
- : Z corrections not simulated; nontrivial

Put all X-PMTs on outside edge



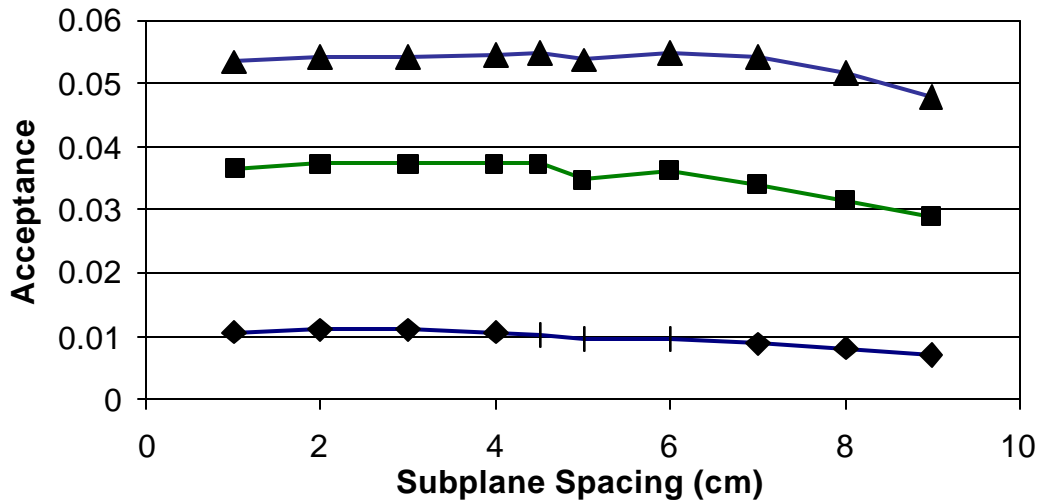
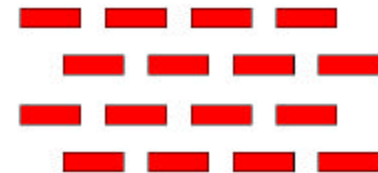
- +: Symmetric design; quadrants isolated
- : Optimal offset changes per energy
- : Guaranteed to miss particles



@ Z1=165cm

$\Delta Z=100$ cm

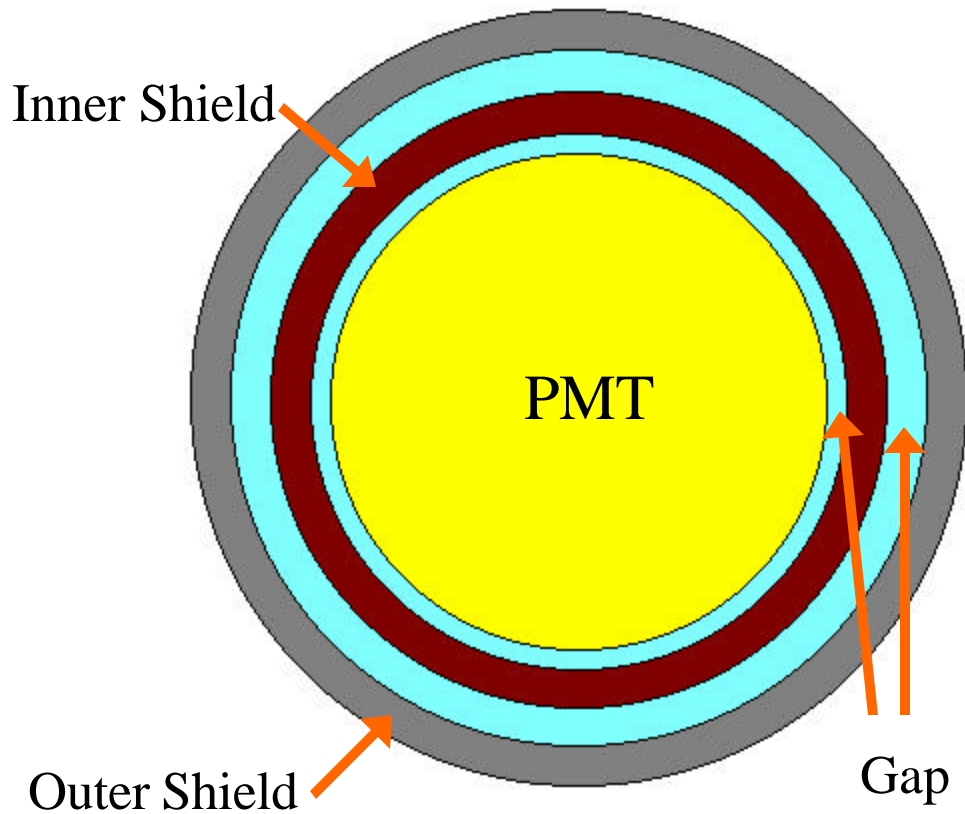
Simulations use 4 subplanes per detector plane. The final two subplanes are offset the same as the first two. (Explains local distortions)



Acceptance increase from 1cm to 4cm is an anomaly arising from edge effects. Theoretically, acceptance at 1cm should be maximum with 1cm thick fingers.

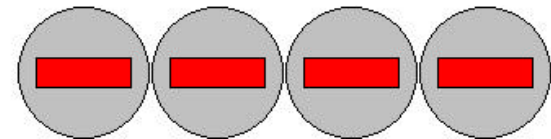


PMT/Mu Metal shield



Diameter Breakdown:  
(Outside)

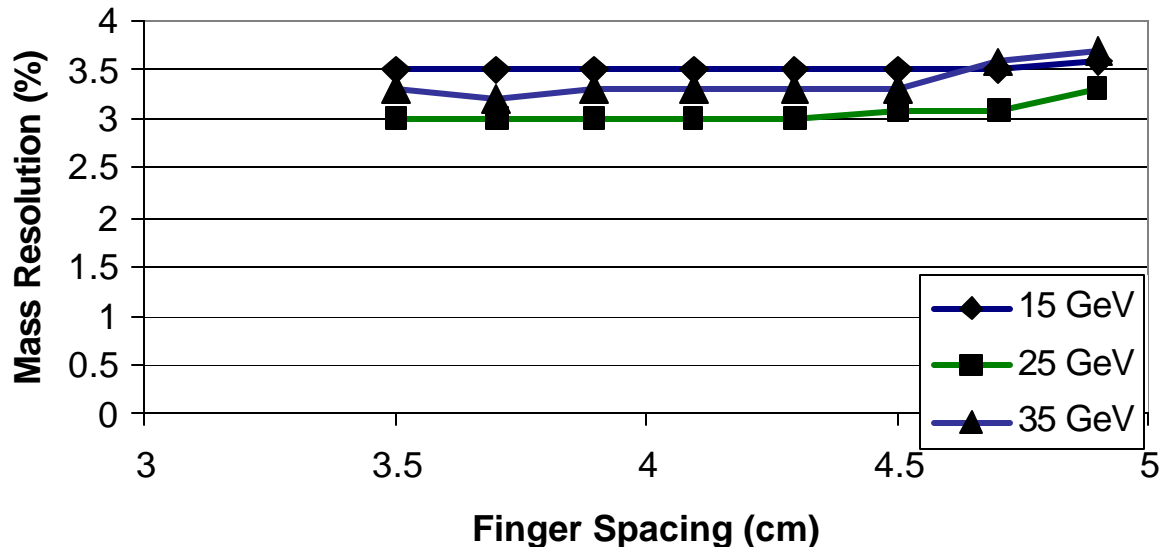
- PMT: 25-26mm
- First Gap: 27-29mm
- Inner Shield: 31-32mm
- Second Gap: 35-37mm
- Outer Shield: 39-41mm



Fingers must be 41mm apart



@ Z1=165cm  
 $\Delta Z=100$ cm



Subplanes 1&2 are back to back with an 8cm gap to 3&4 which are also back to back.

Mostly shows slight problem with edge-effect corrections in code.

