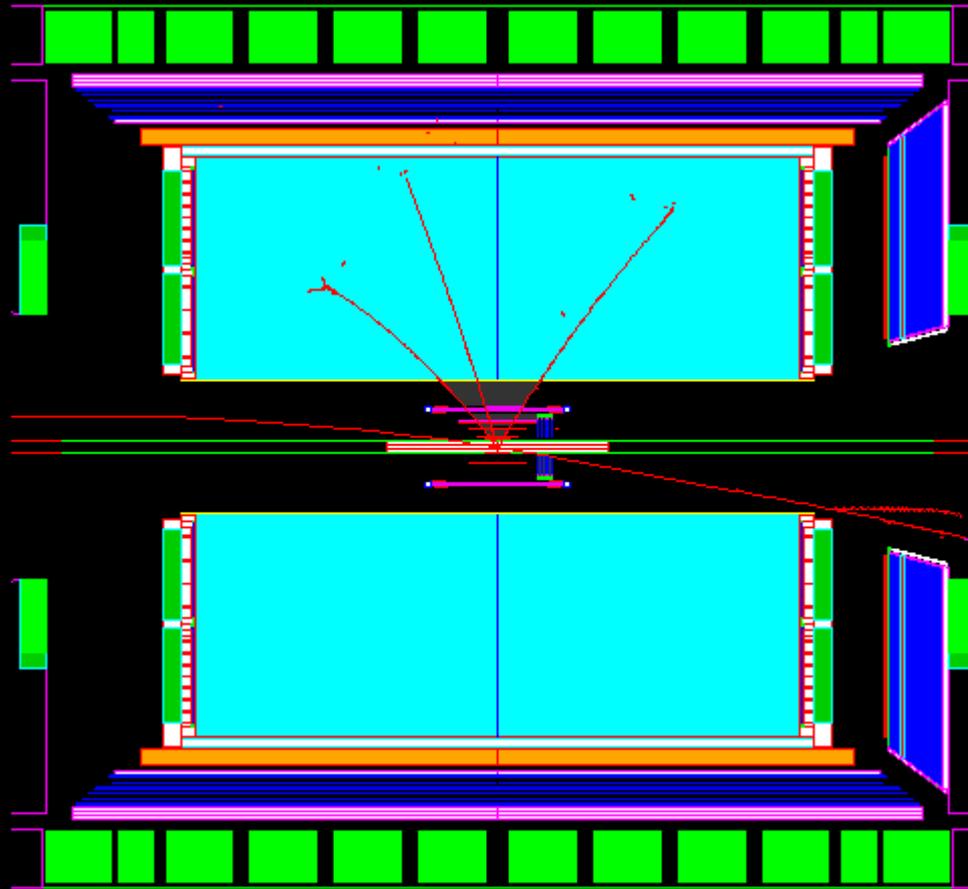
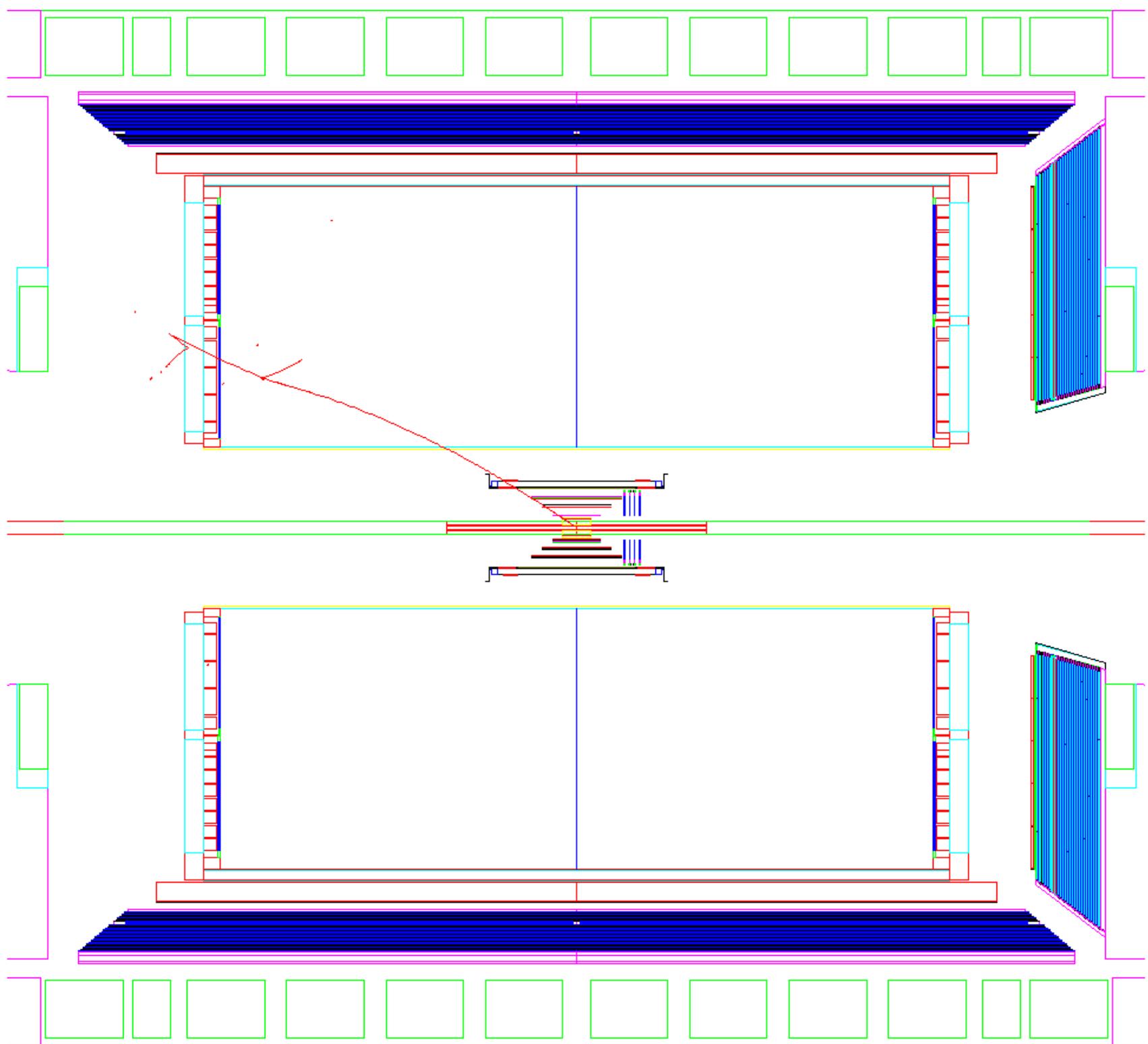


# Simulation Status



Gerrit van Nieuwenhuizen  
Bates R&E Meeting  
April 13, 2005





SSD  
IST  
HFT

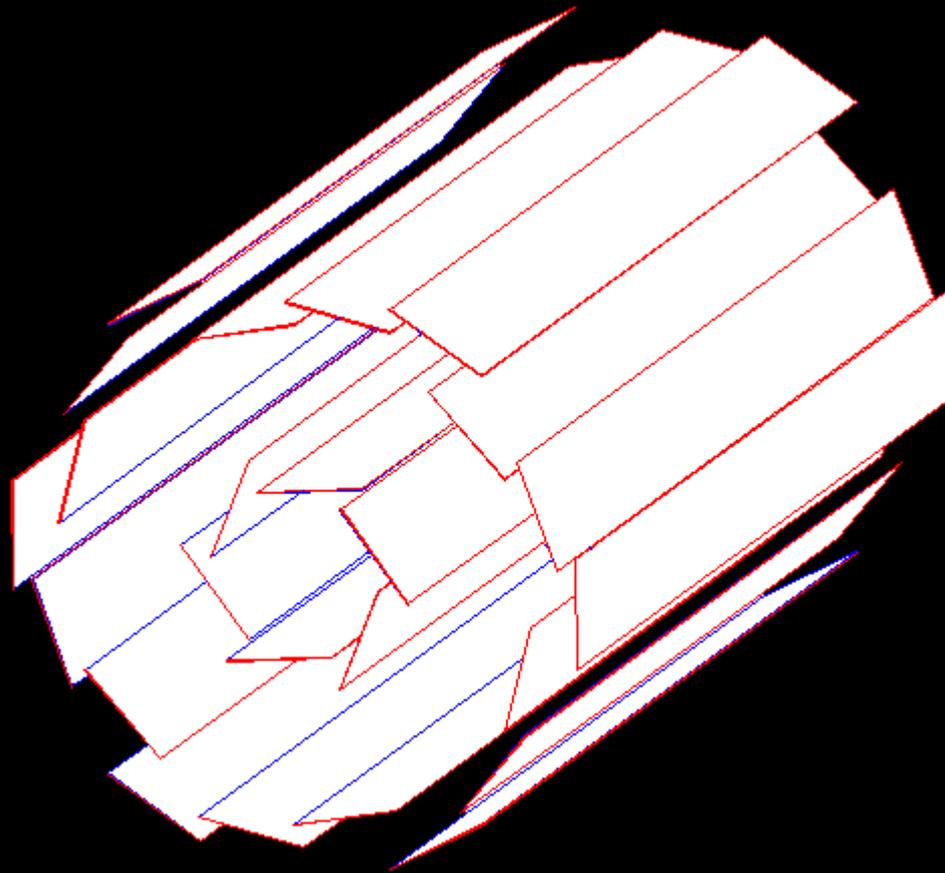
FGT

FST

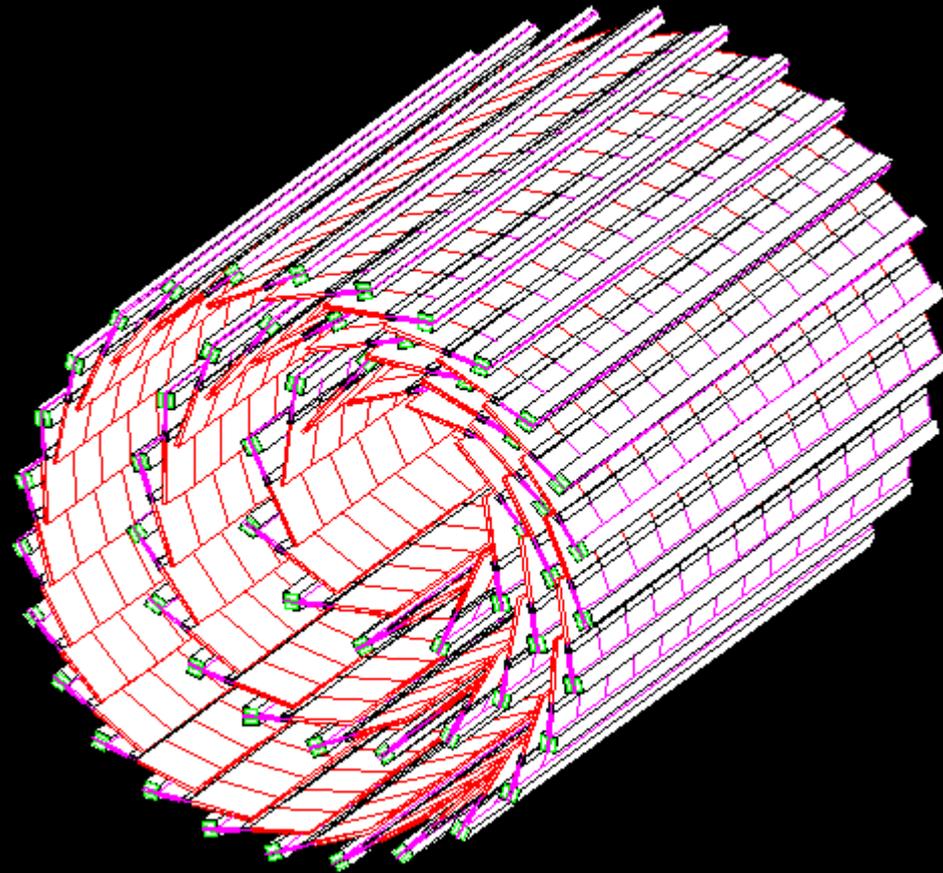
# Short term simulation goals

- 🌀 Occupancy and hit ambiguities in IST
- 🌀 Back pointing IST to HFT
- 🌀  $e^+ e^-$  charge separation in FST/FGT

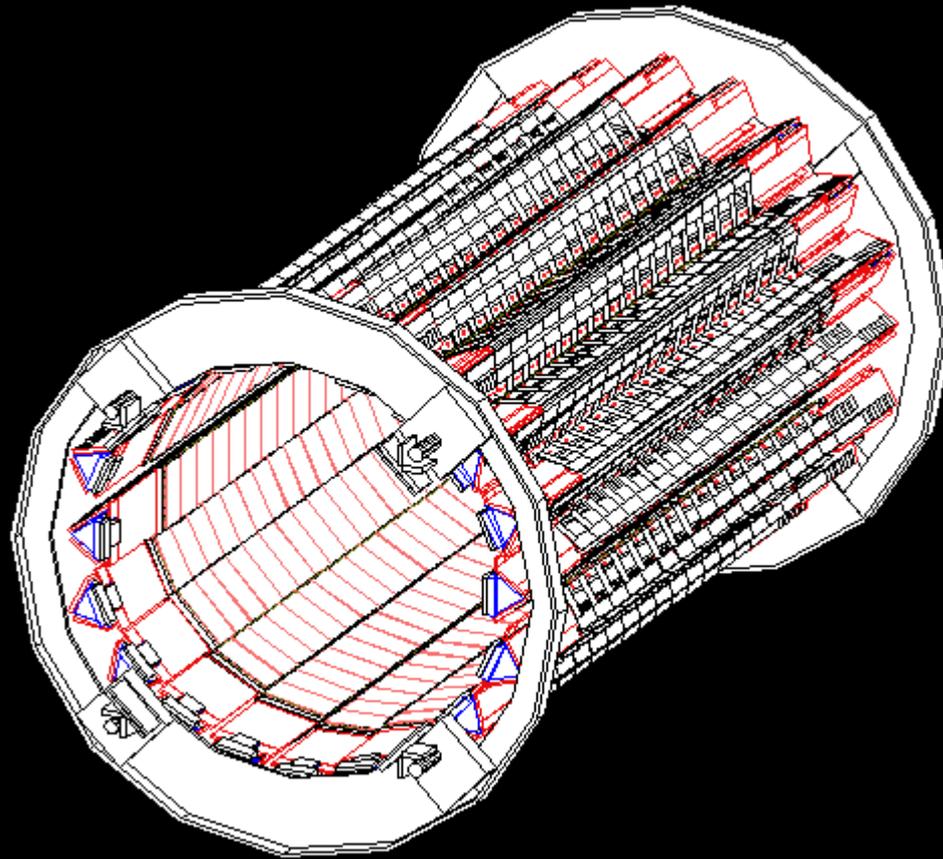
# Heavy Flavor Tracker



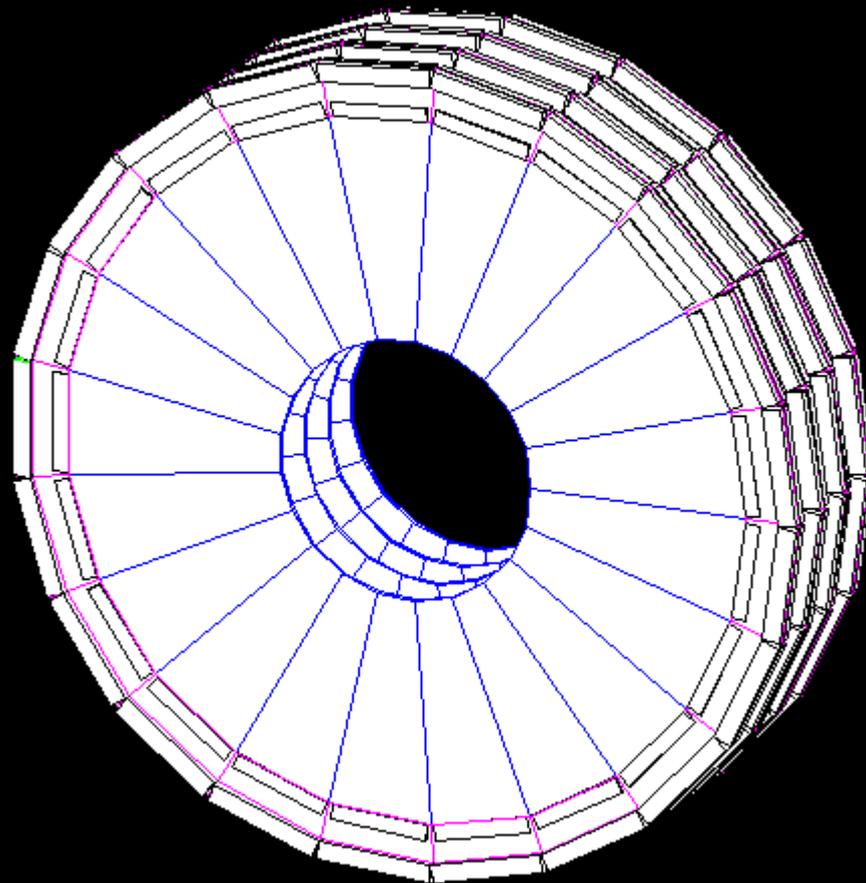
# Inner Star Tracker



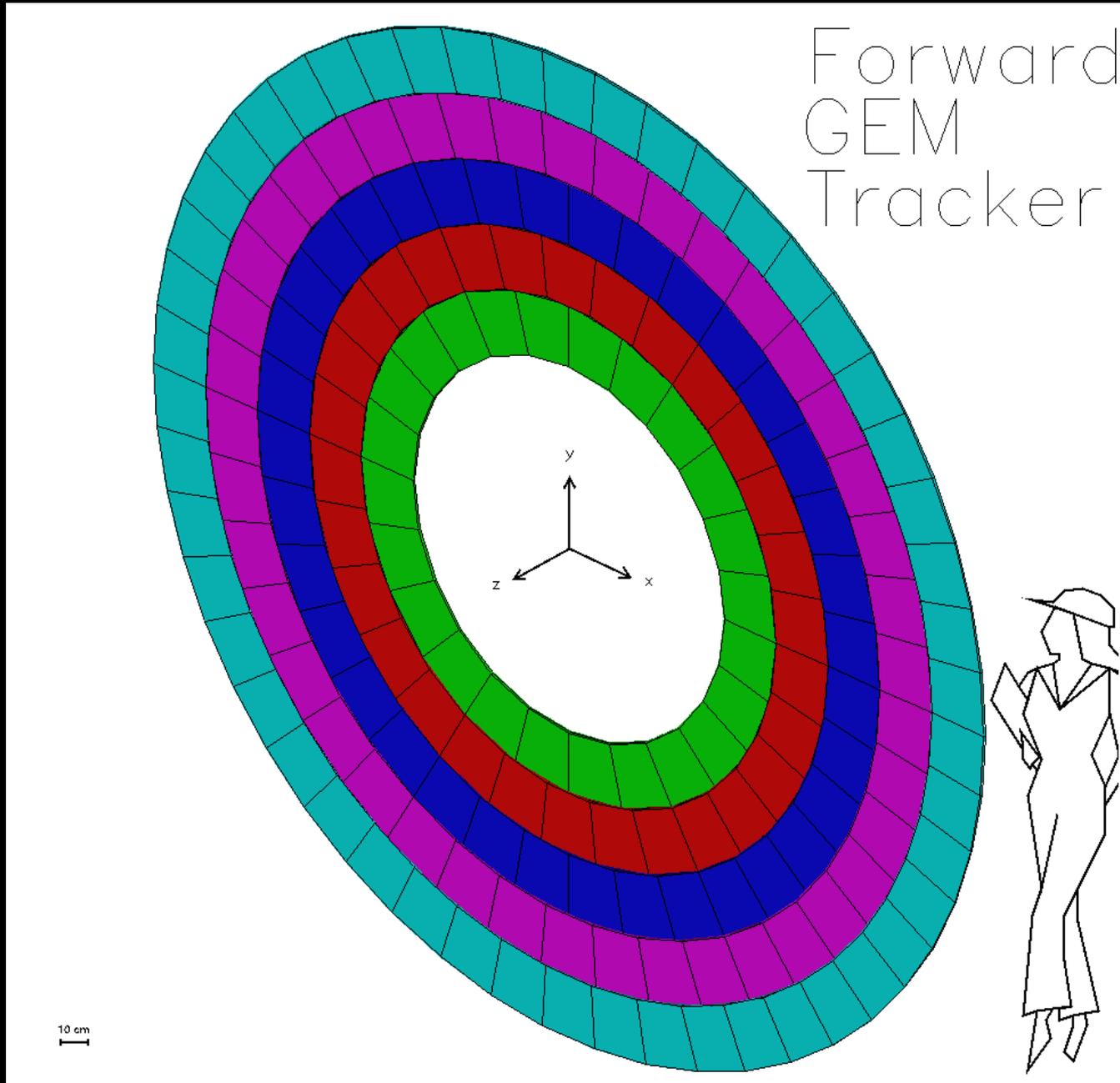
# Silicon Strip Detector



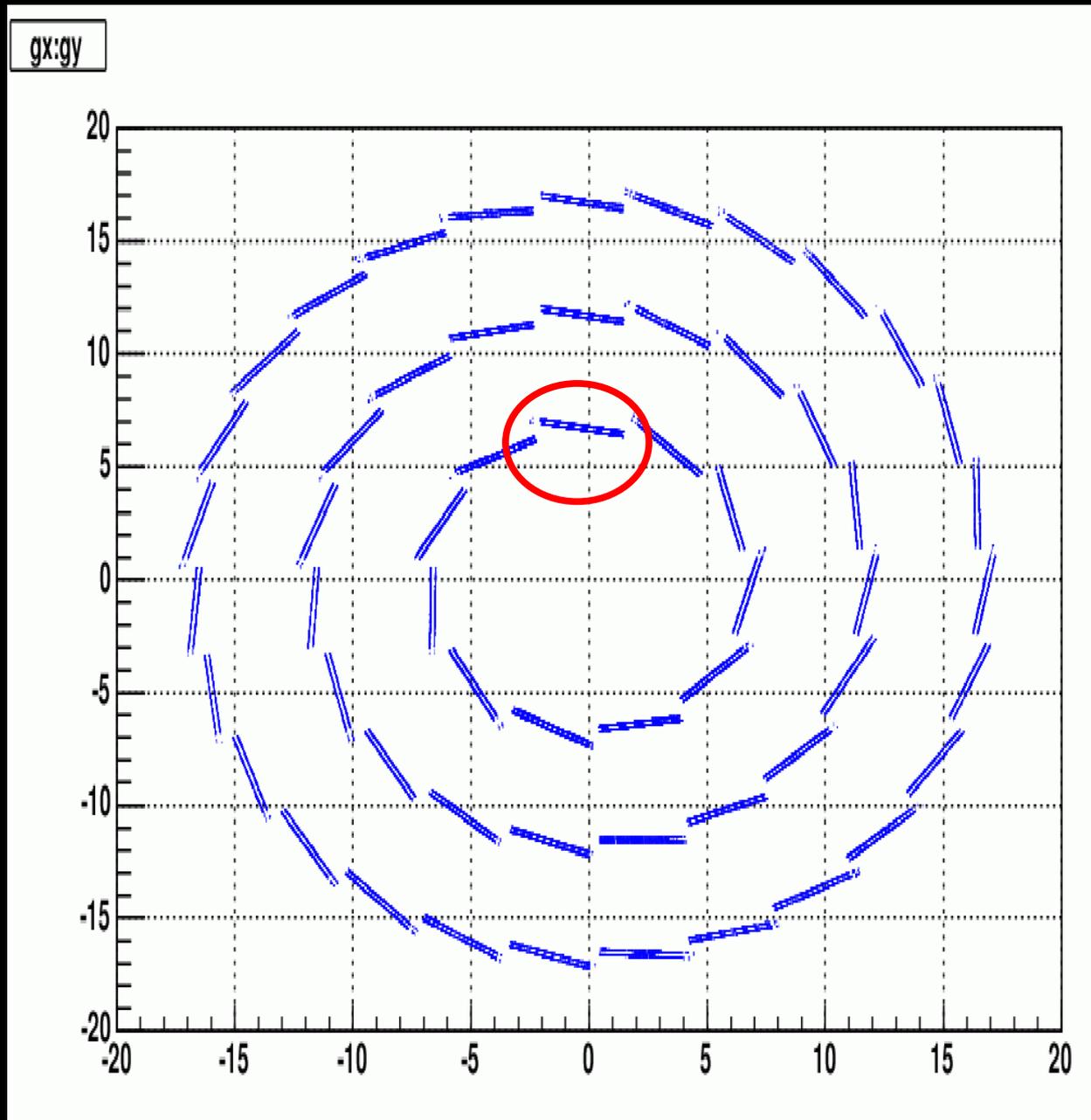
# Forward Star Tracker



# Forward GEM Tracker

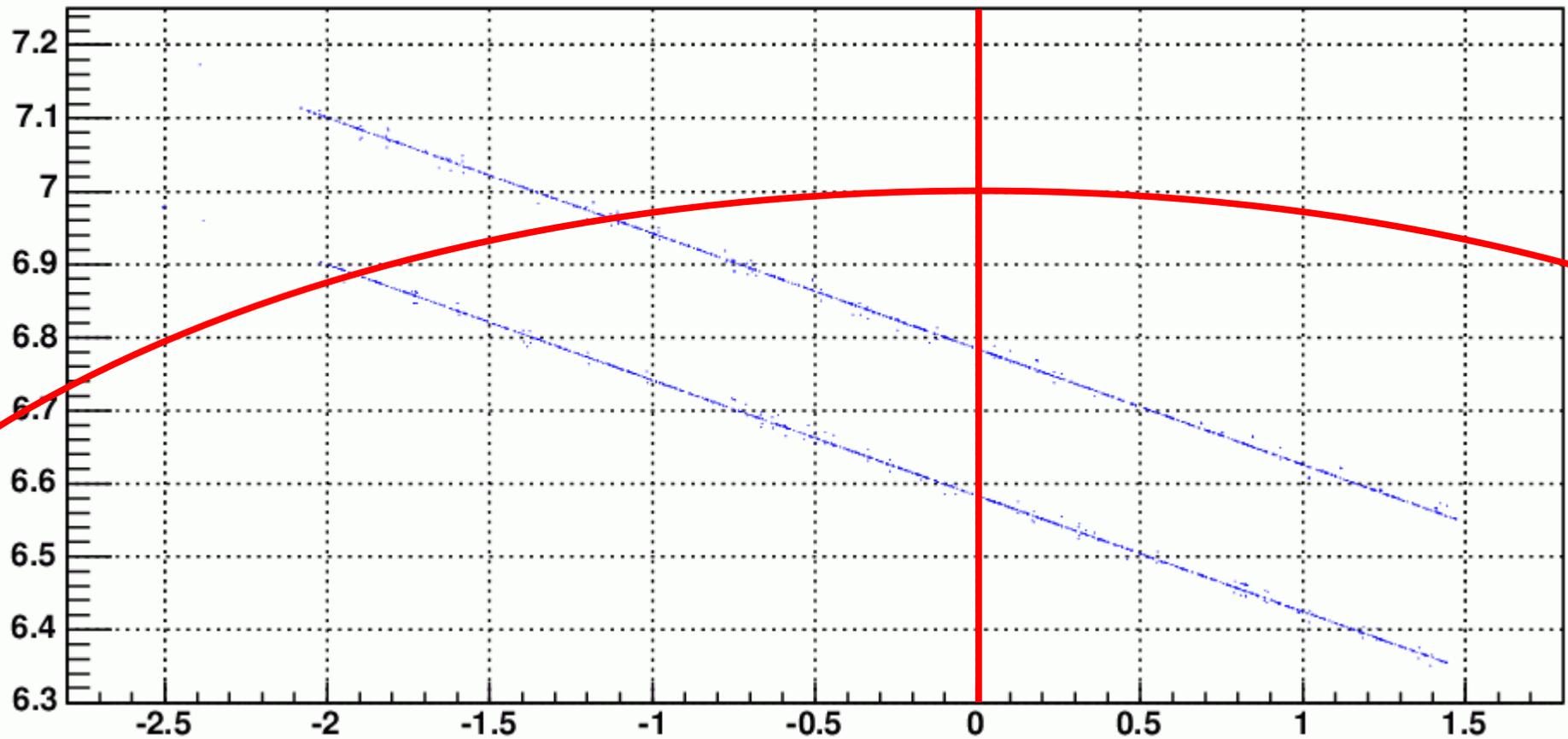


# Checking the IST hits I



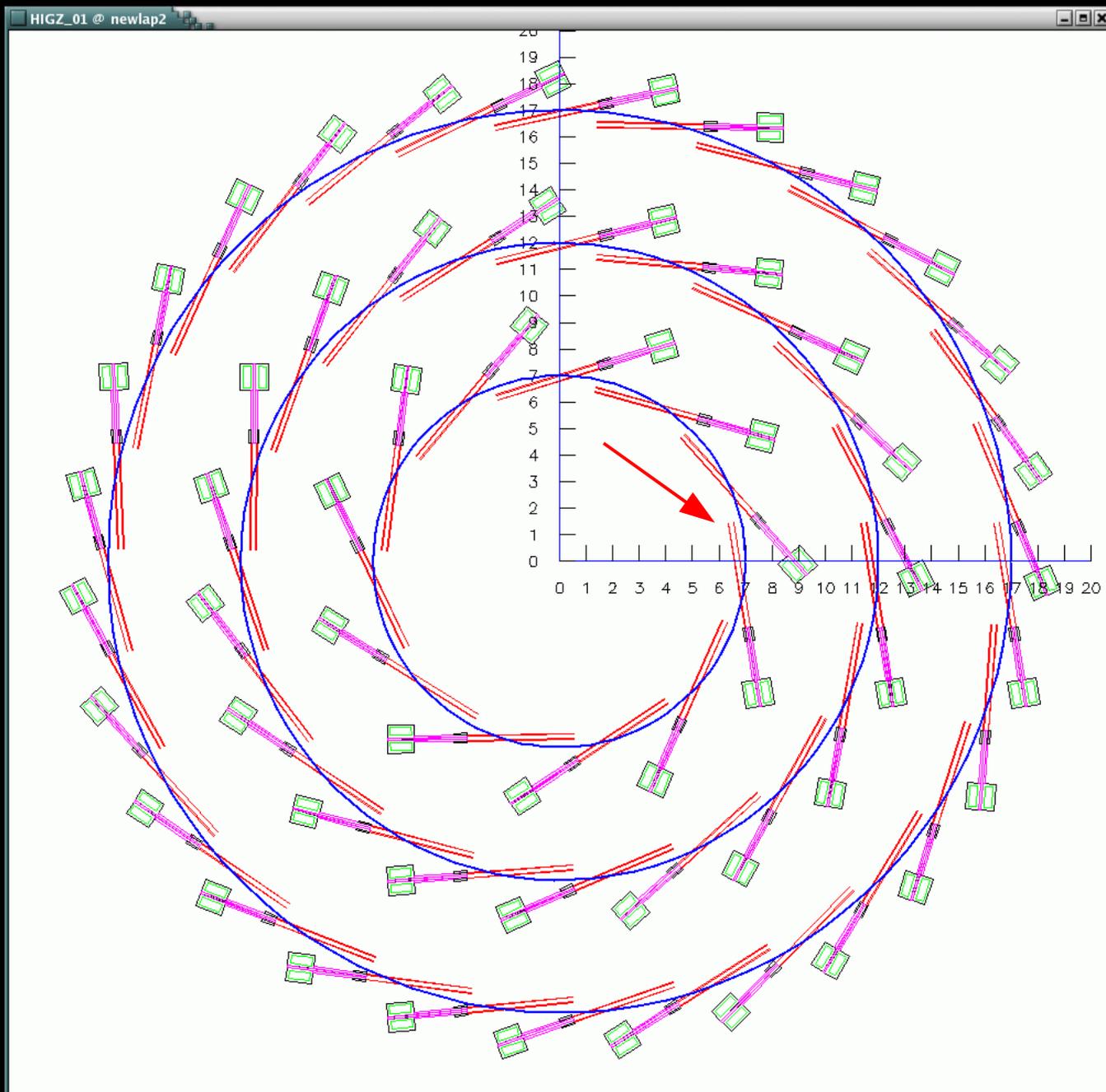
# Checking the IST hits II

gx:gy {(layer==1)&&(ladder==11)}



Sensors don't seem to pivot around the right point

# Checking the IST hits III



Problems  
with  
shifts  
and  
rotation

-->  
almost  
solved

# What 's next?

- 🌀 Fix positioning problem in IST ladders
- 🌀 Make sure that GEANT geometries and simulation geometries agree in detail
- 🌀 Check the IST hits again
- 🌀 Using ITTF for HFT/IST/SSD
- 🌀 Using old Helix fit code for FST/FGT
- 🌀 Implement FST/FGT in detail in simulations

# Hamamatsu preliminary quote

2) Here is their ballpark pricing (please see below).

2-1) Barrel Straight (320umt, 200V min)

NRE: \$59,000

5pcs: 2,100 each

618pcs: 450 each

Get 6 sensors in 2005

2-2) Barrel Stereo (320umt, 200V min, SiO<sub>2</sub> layer: 4 umt)

NRE: \$46,800

5pcs: 3,800 each

618pcs: 1,370 each

New quote for 1um SiO<sub>2</sub>

Get 6 sensors with 1um SiO<sub>2</sub> in 2005

The factory said if 3umt is acceptable, the price can be reduced. They asked that you please reconsider the thickness.

2-3) Disk Straight (320umt, 200V min)

NRE: \$57,000

5pcs: 3,450 each

84pcs: 1,675 each

Get 5 (or less) sensors in 2005

2-4) Disk Stereo

Your request for this detector was for a 4umt SiO<sub>2</sub> layer, however the factory says it is technically impossible for us to make a 4umt layer. They said if 1umt is acceptable, we can make it. Please let me know if 1umt is OK.

New quote for 1um SiO<sub>2</sub>

Also, please keep in mind that after receiving a purchase order, it takes 1 month to provide our suggested drawing. And, it will takes another 3-4 months after receipt of approval of the drawing.

Also in terms of thickness for all devices above, it is technically possible to reduce it up to 200umt, but in this case the price become high. Also, if the thickness is reduced, there is possibility that a warp of the chip is more than +/-30um.

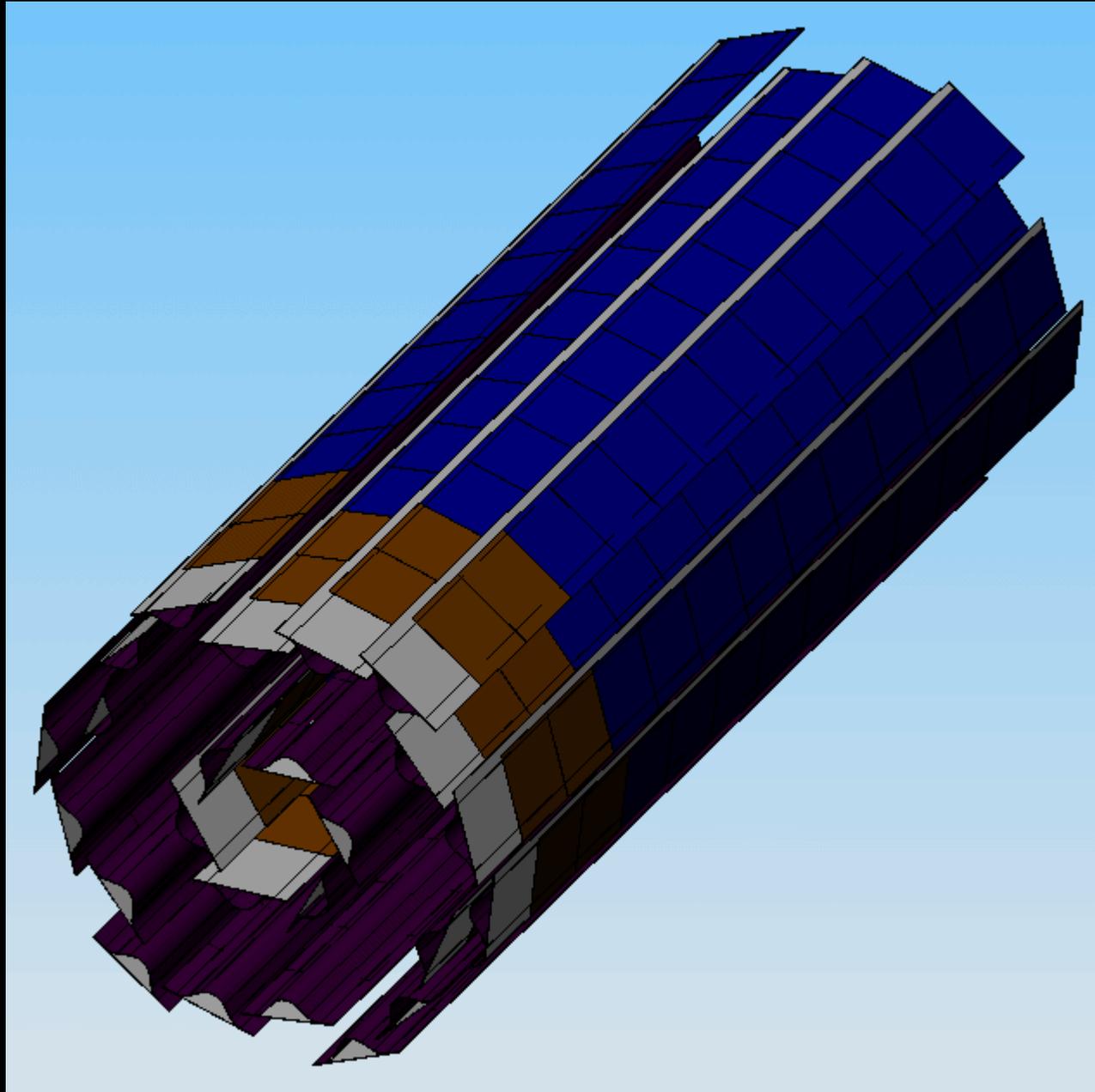
Best regards,

Norm Schiller

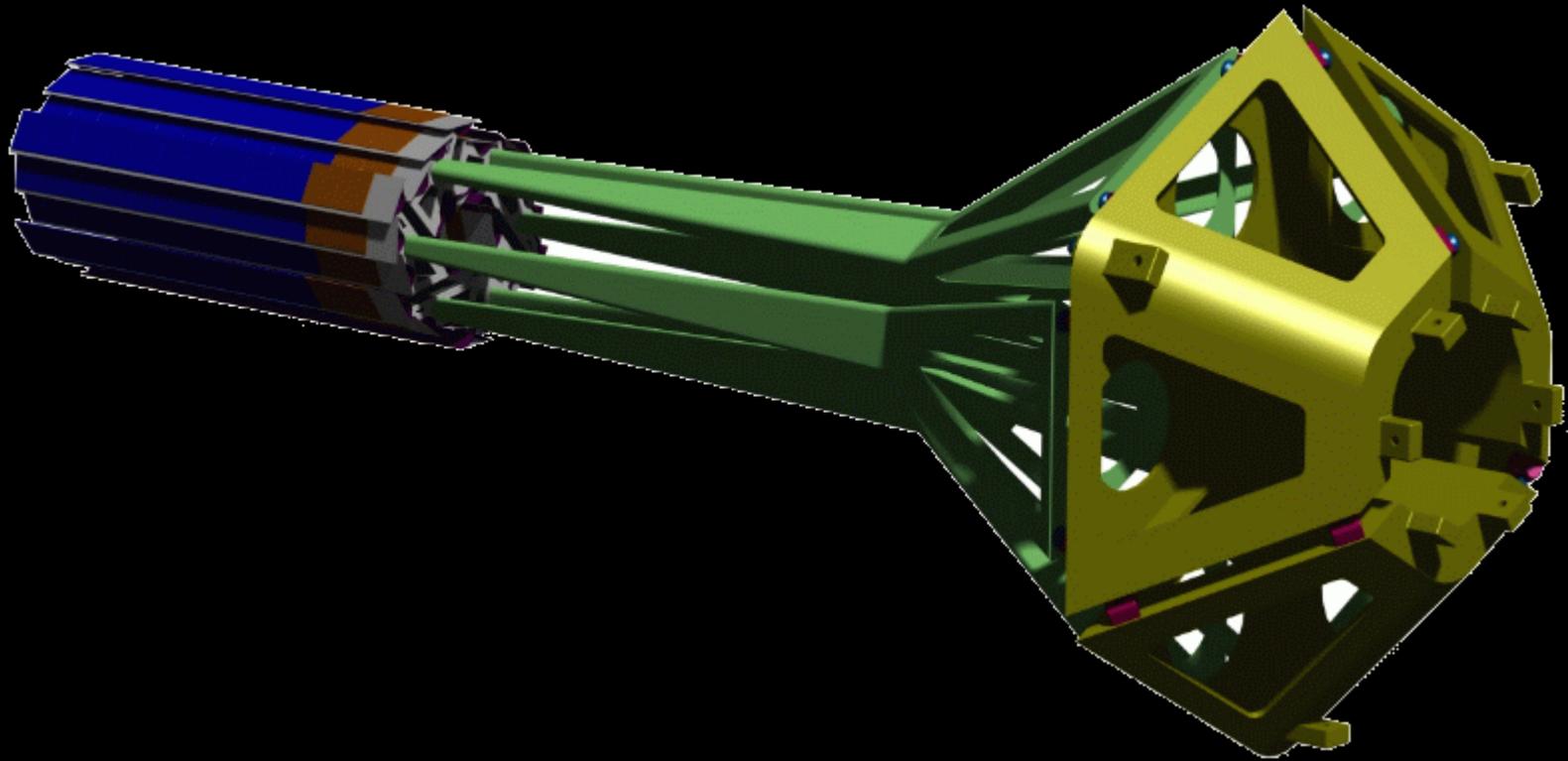
Confidential



# Heavy Flavor Tracker

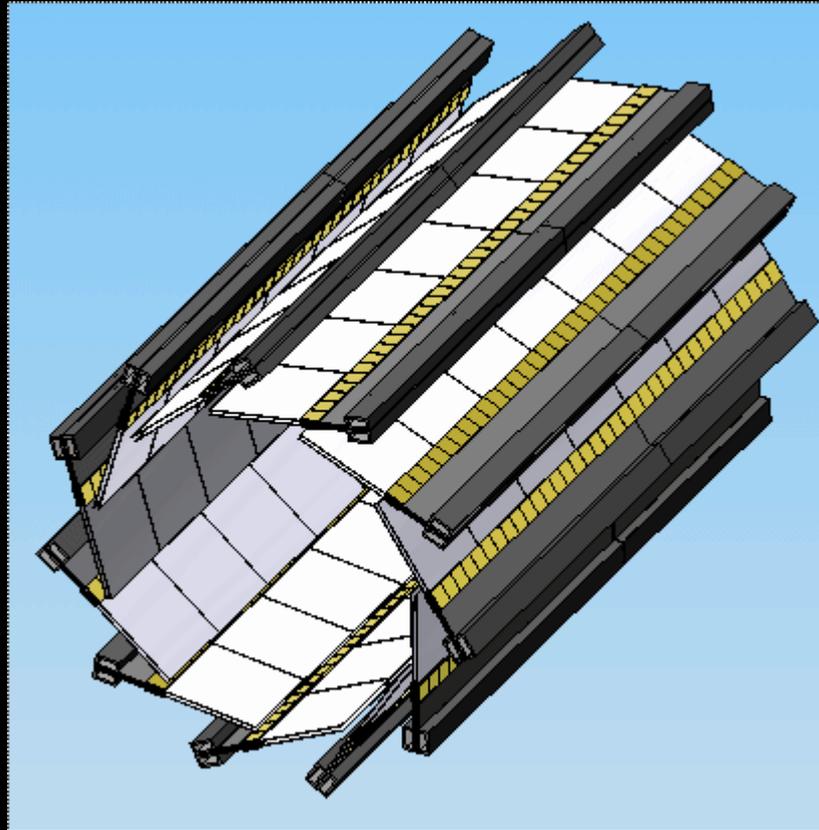


# Heavy Flavor Tracker

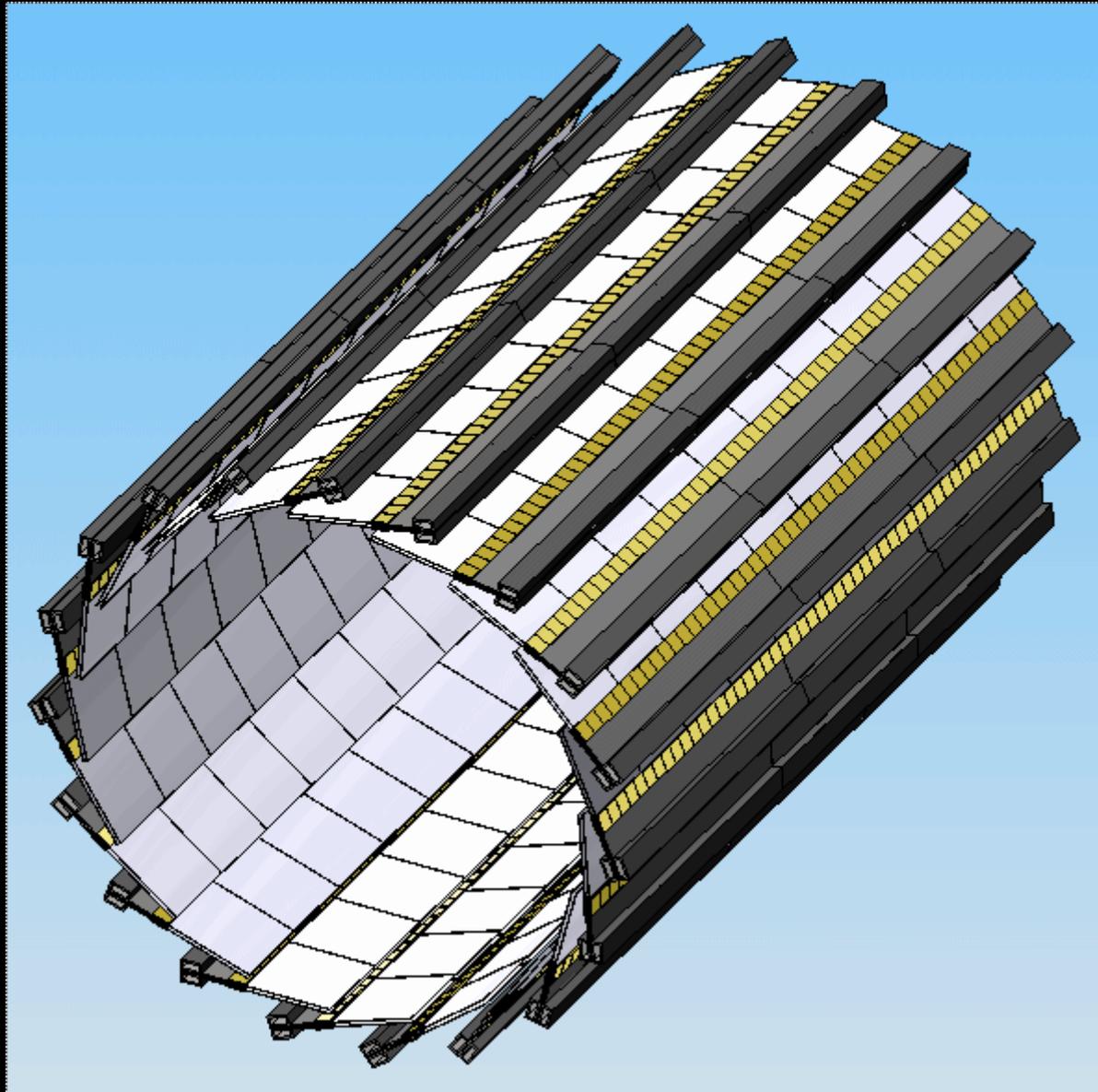


Complicated mechanical design

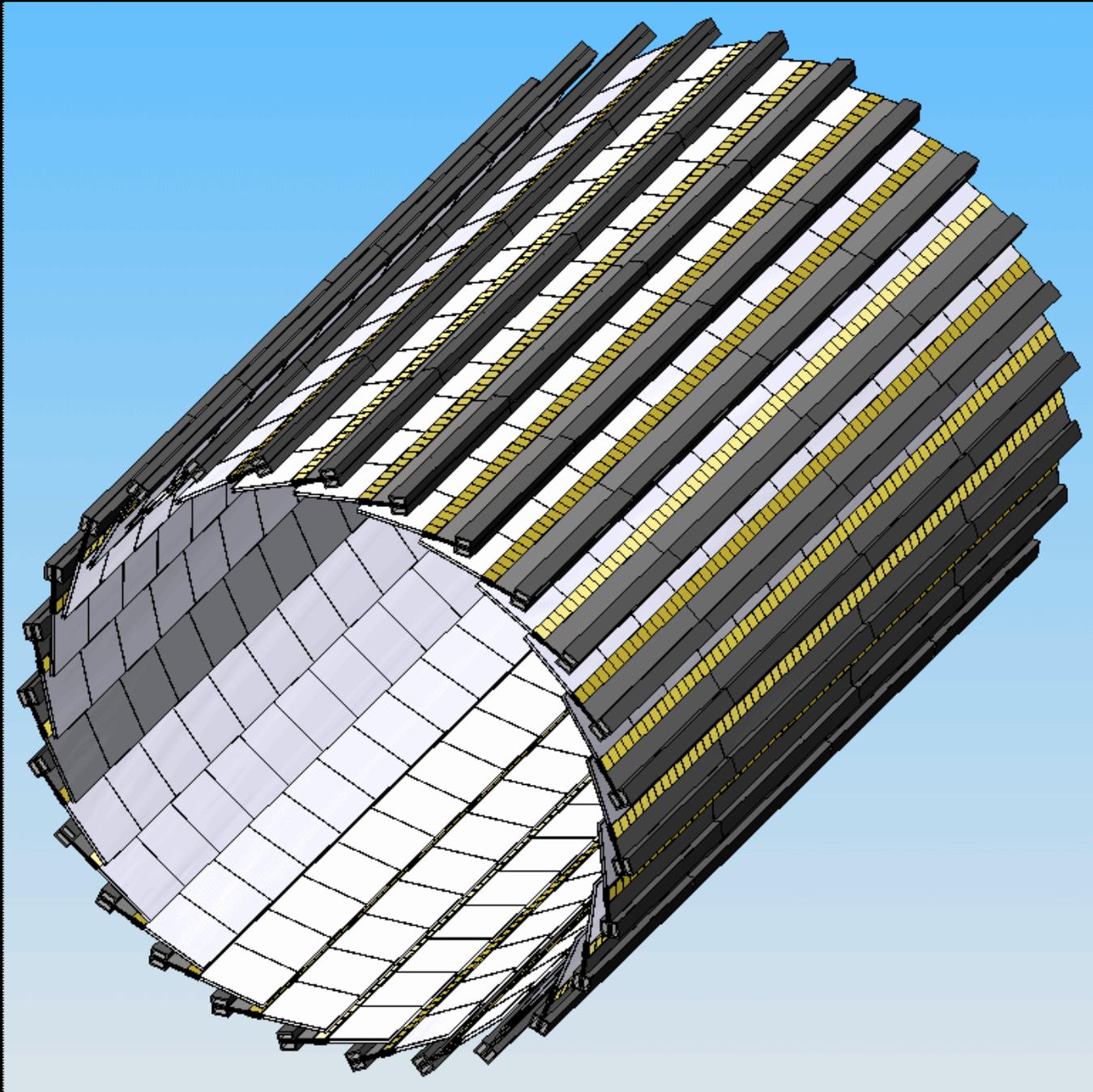
# Inner Star Tracker: Layer 1



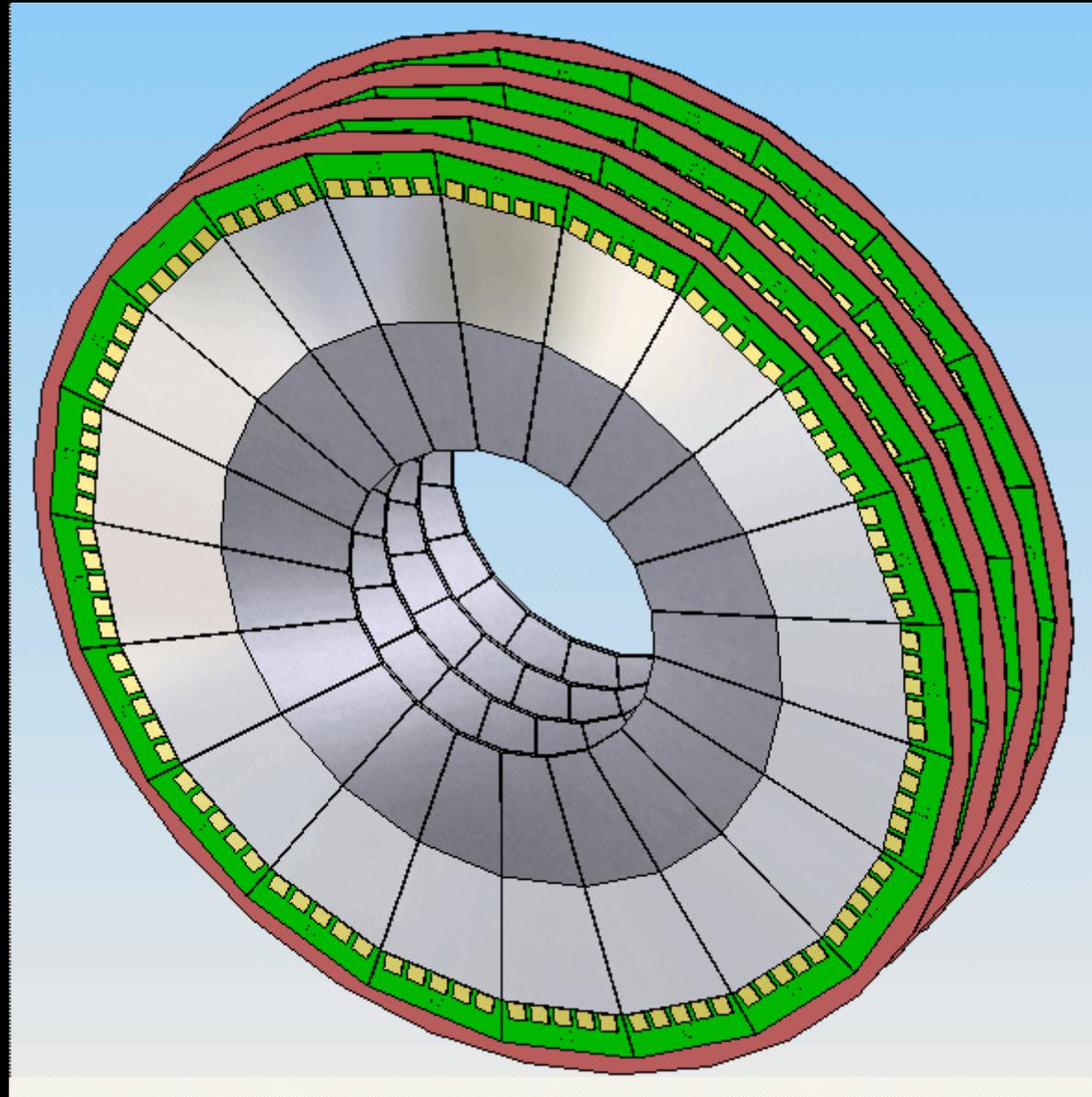
# Inner Star Tracker: Layer 2



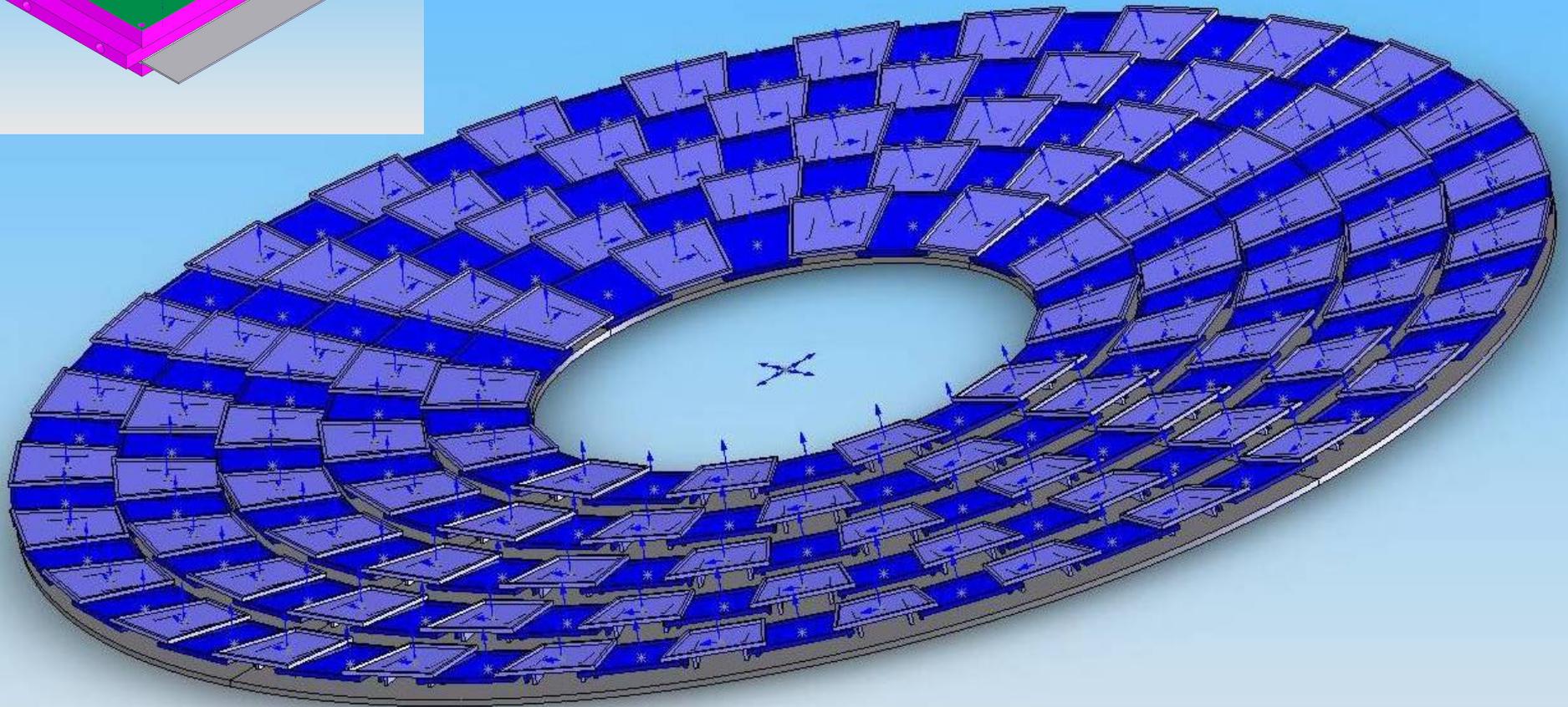
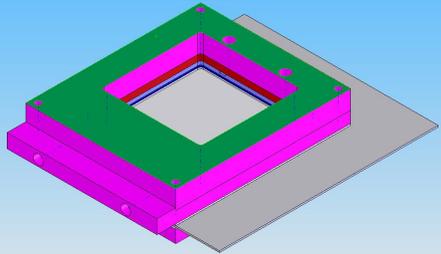
# Inner Star Tracker: Layer 3



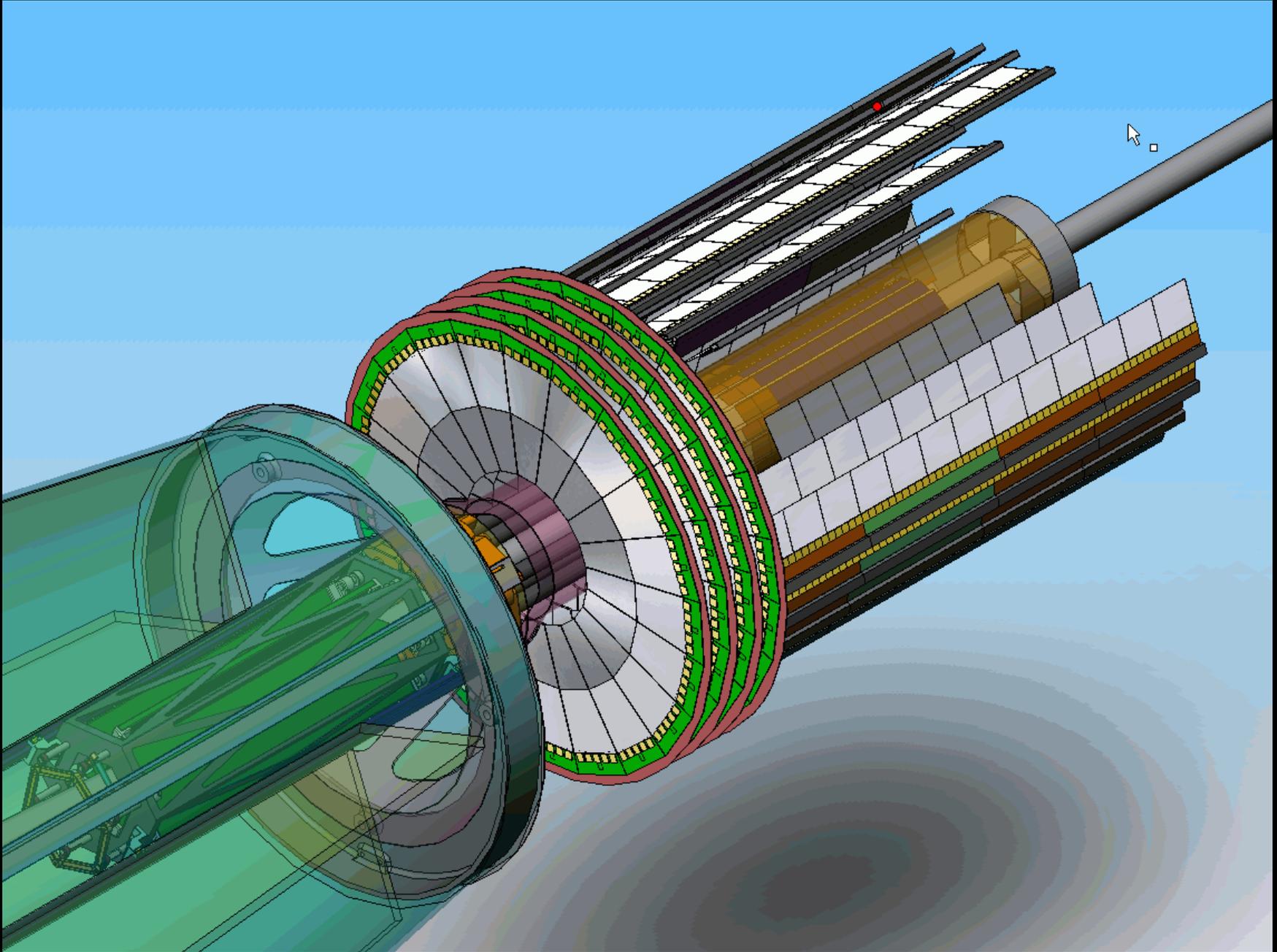
# Forward Star Tracker



# Forward GEM Tracker



Putting (most of) it together



# To Do

- 🌀 Implementing proper designs for IST and FST
- 🌀 Designing mechanical support structure
- 🌀 Getting AutoCAD designs for the SSD
- 🌀 Making global design for HFT, IST, SSD and FST
- 🌀 'Nuts and bolts'