



**First look into**  
**SVT Mechanical Structure**  
**Layers 1-5**

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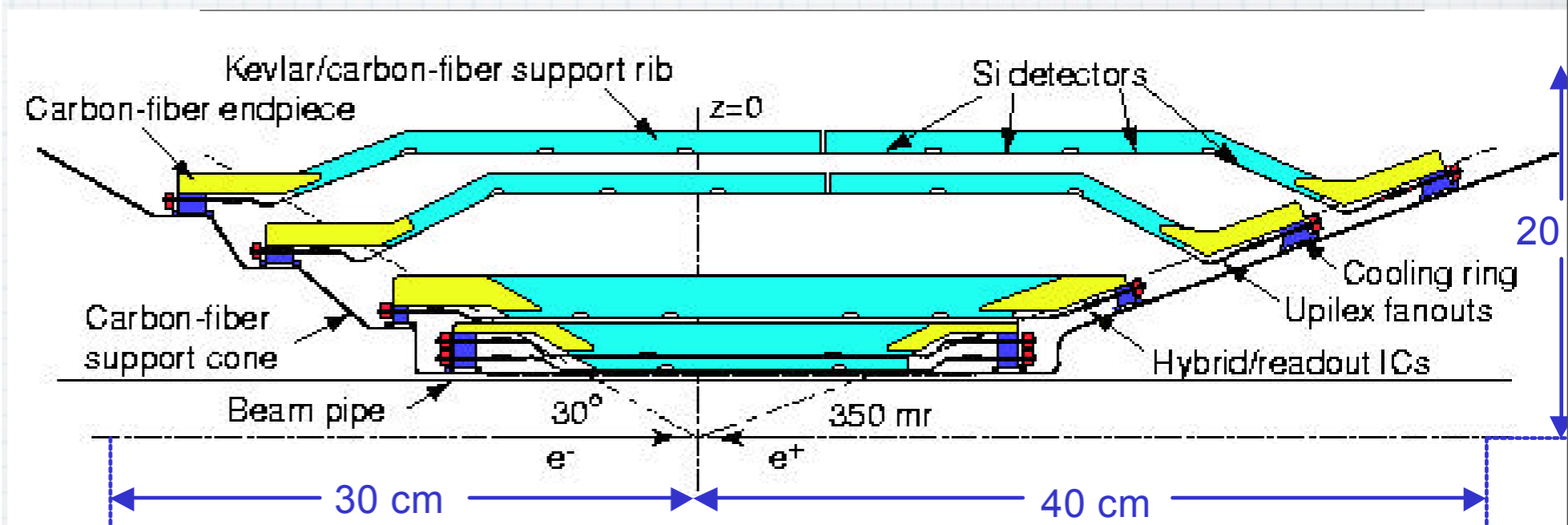
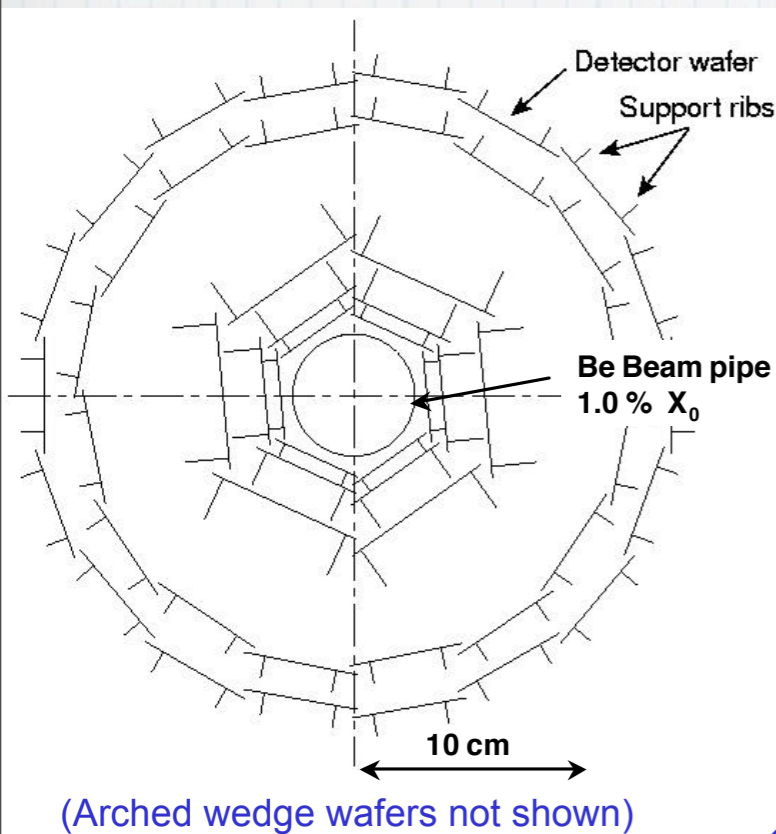
# Outline

- \* **Starting Points**
- \* **Working Hypothesis**
- \* **Basic Drawing**
- \* **Start FEA**
- \* **What Next**

# Starting points

- \* BaBar SVT Scheme
- \* 5 Layers
- \* External Layers Lamp shaped
- \* Symmetric vs I.R.
- \* 300 mr acceptance B-F

# \* SVT BaBar Scheme

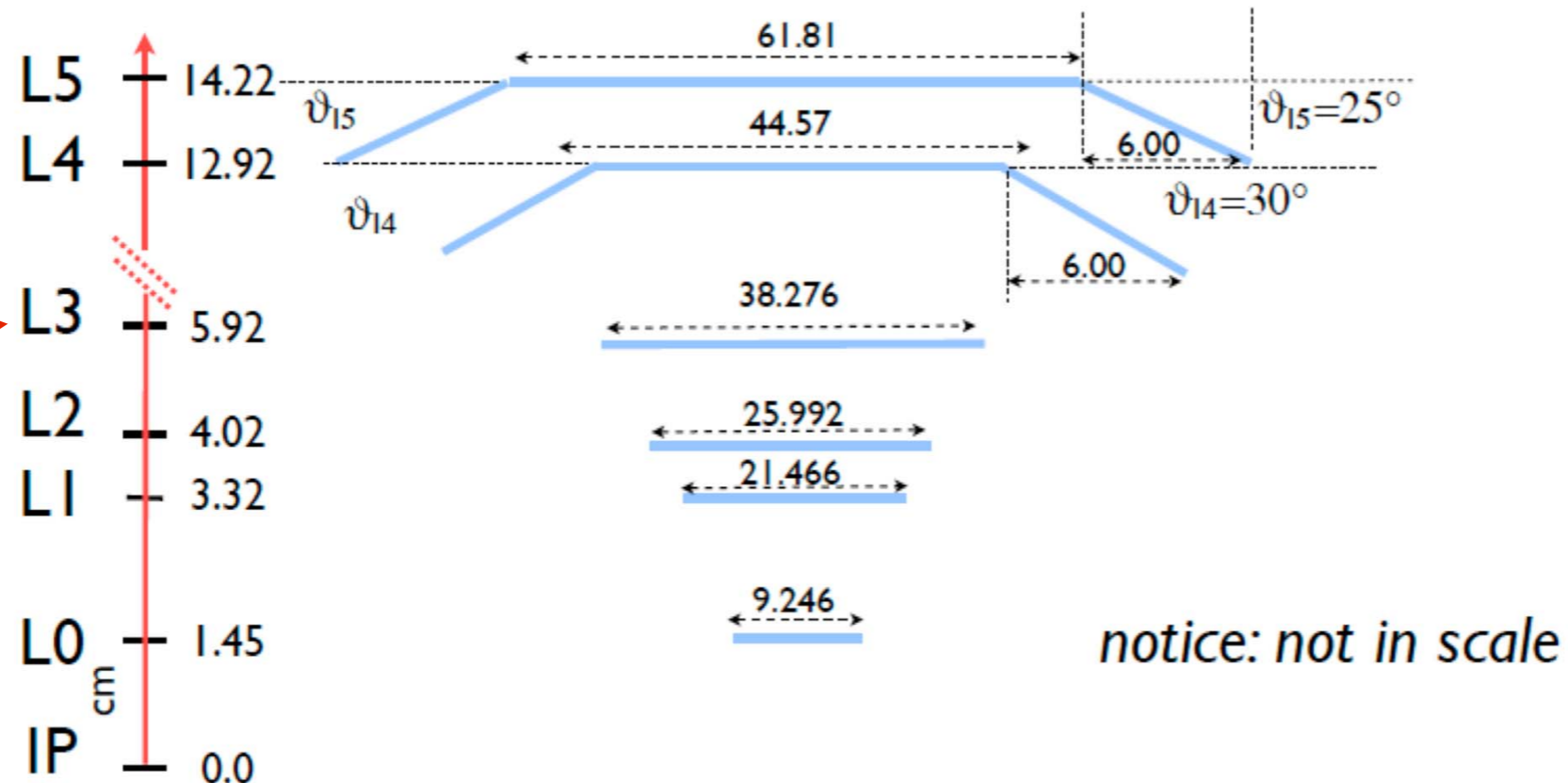


# SVT Geometry as used in simulation

6.12



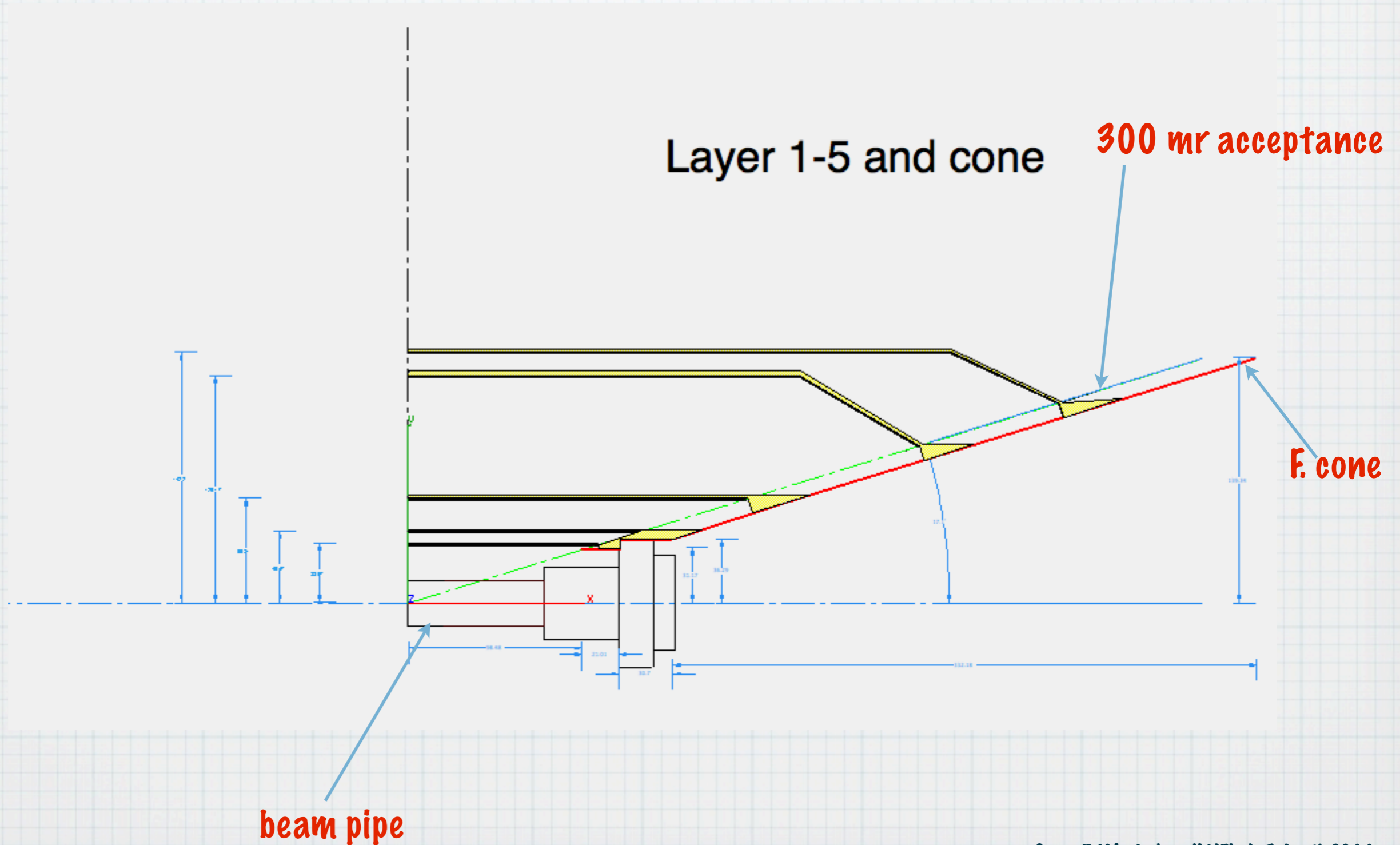
## SVT Baseline Geometry



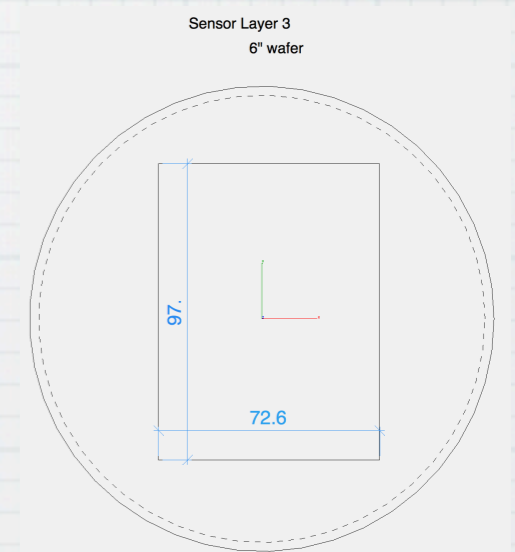
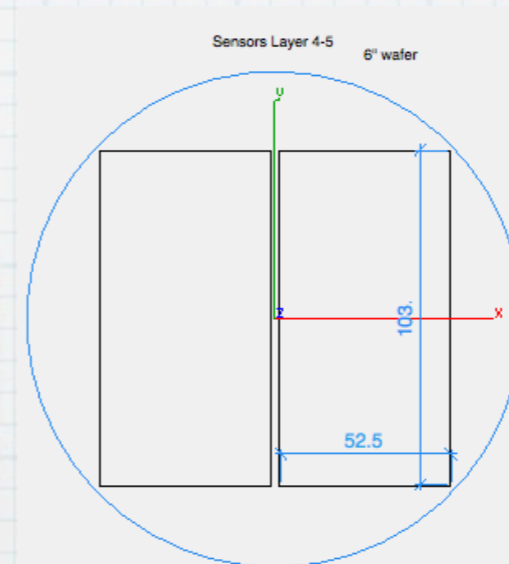
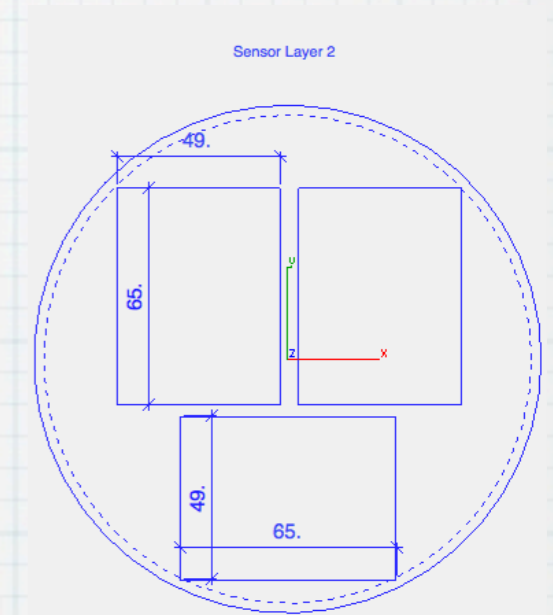
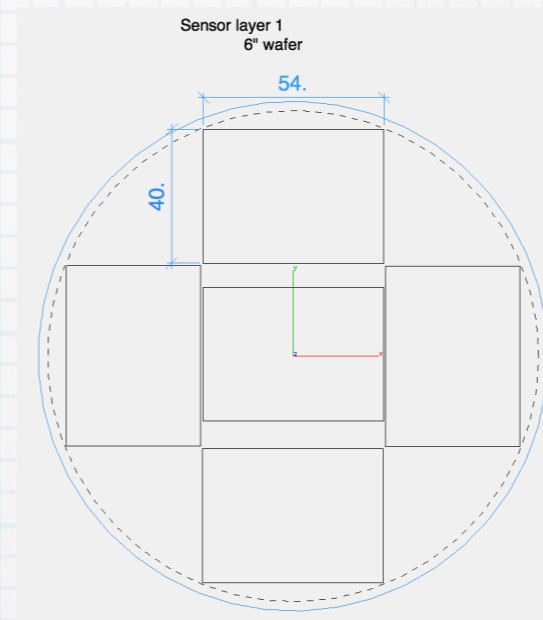
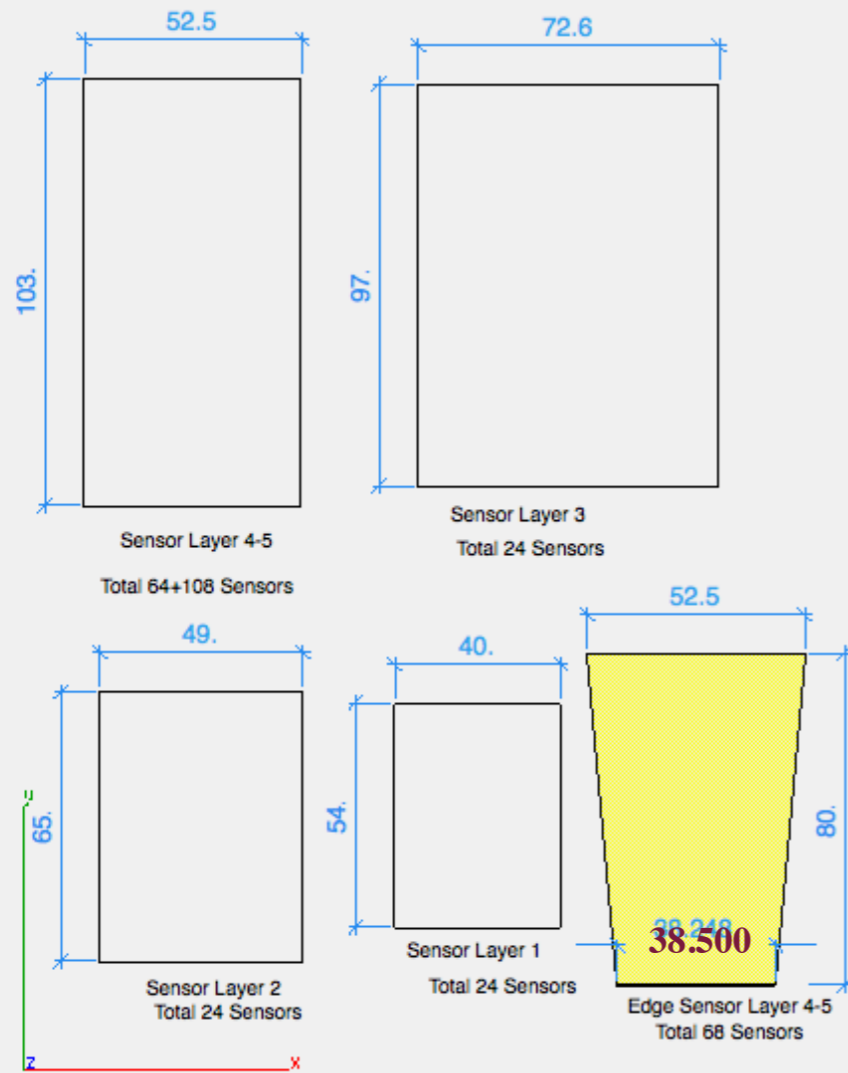
Coverage down to 300 mrad FW and BW

Plot from Nicola Neri

# Raw layout



# Sensors geometry



# Working Hypothesis

- \* **DSS microstrips in all layers**
- \* **Minimum # of DSS masks**
- \* **Minimum # of DSS**
- \* **DSS out of 6" wafers**



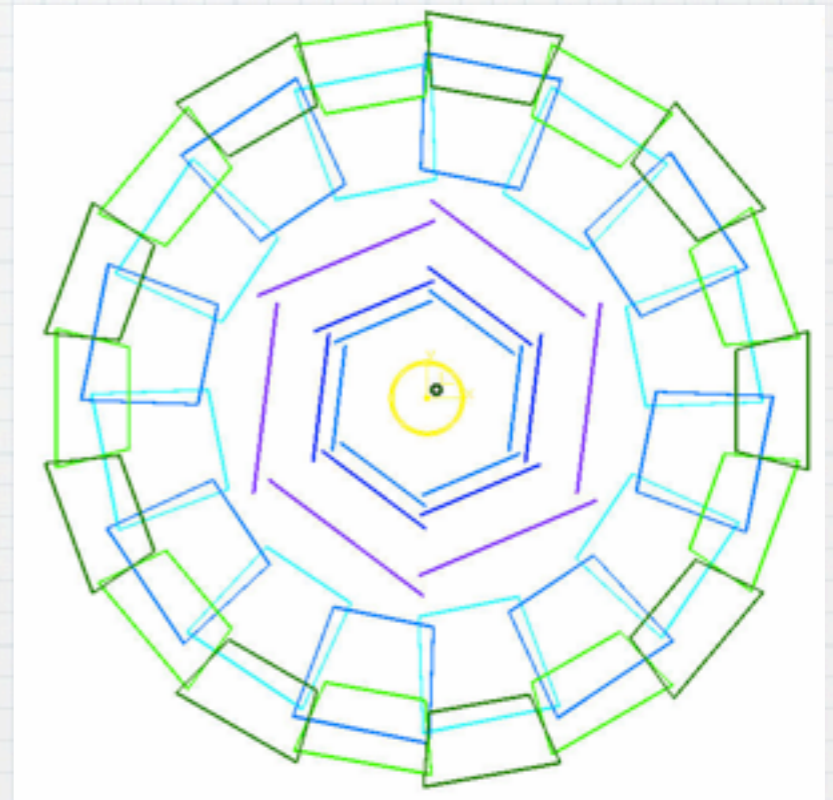
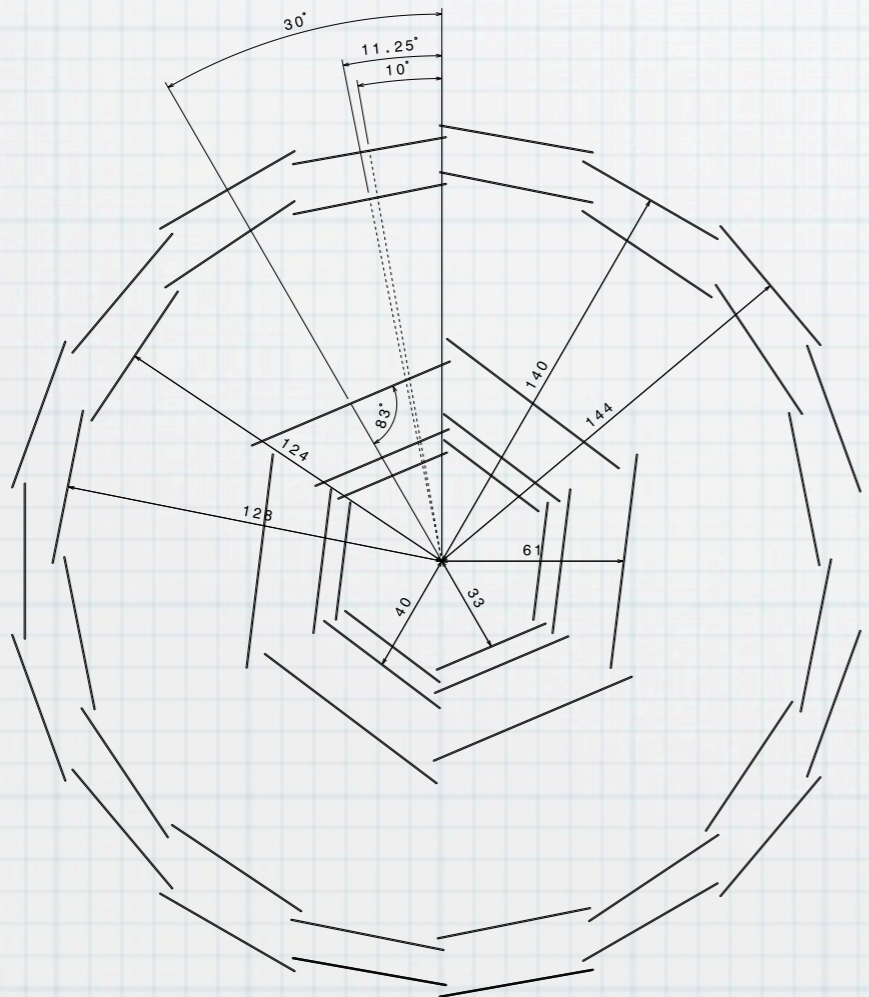
# Sensors table

6" wafers

Detector type	I	II	III	IV	V
Z length (mm) φ width (mm)	54x 40	65x 49	97x 72.6	103x 52.5	80x 52.5-38.5
Layer 1	24	-	-	-	-
Layer 2	-	24	-	-	-
Layer 3	-	-	24	-	-
Layer 4a	-	-	-	32	16
Layer 4b	-	-	-	32	16
Layer 5a	-	-	-	54	18
Layer 5b	-	-	-	54	18
Total	24	24	24	172	68

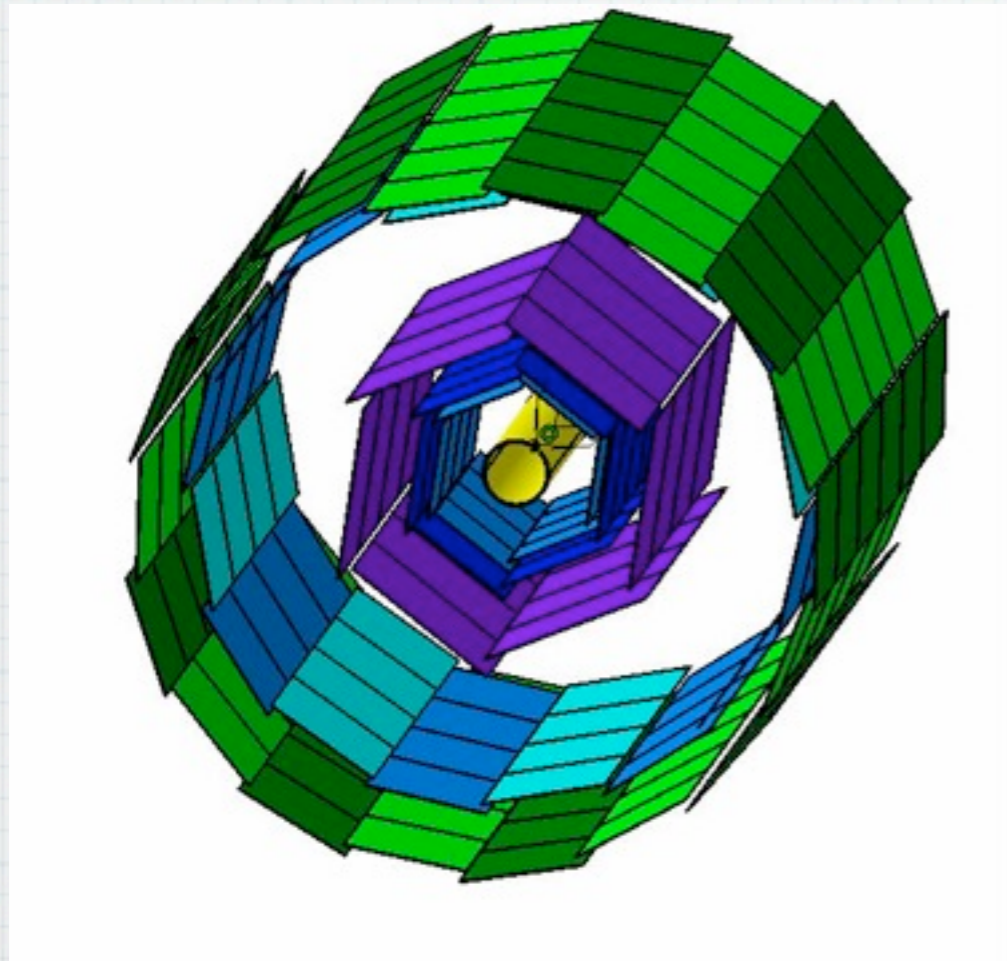
**Grand Total # 312 DSS**

# Wire scheme without and with arched edges

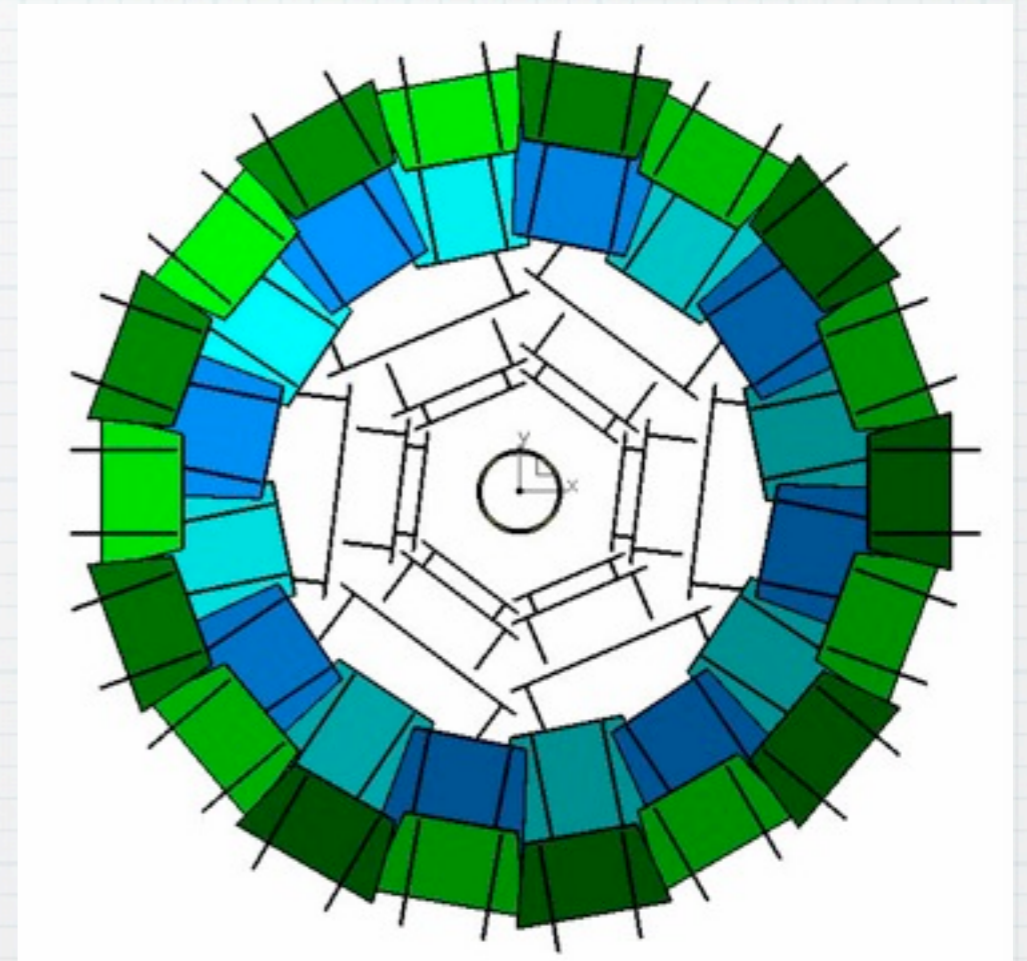


# Barrel

Naked barrel

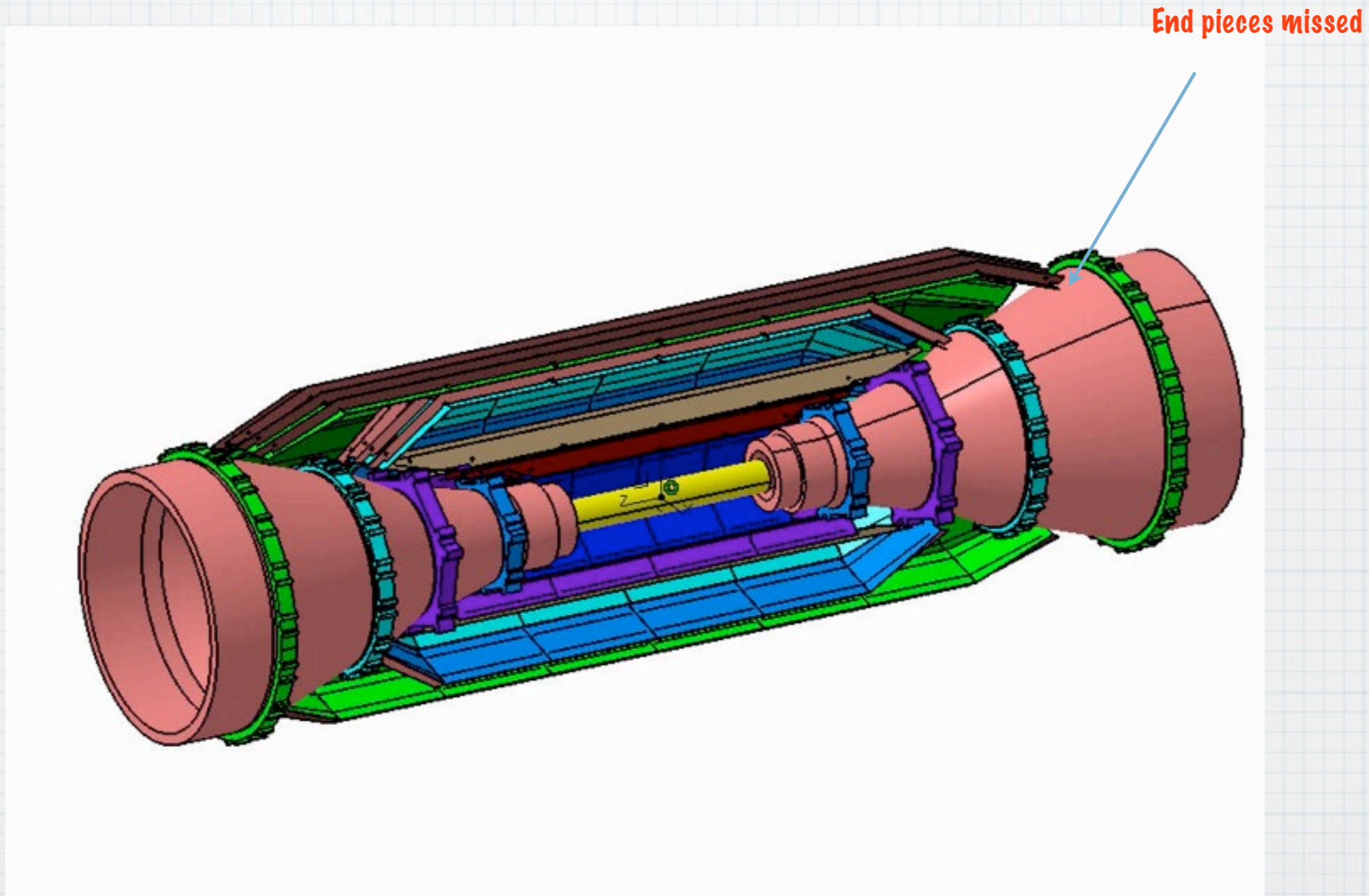


Front view with arched edges

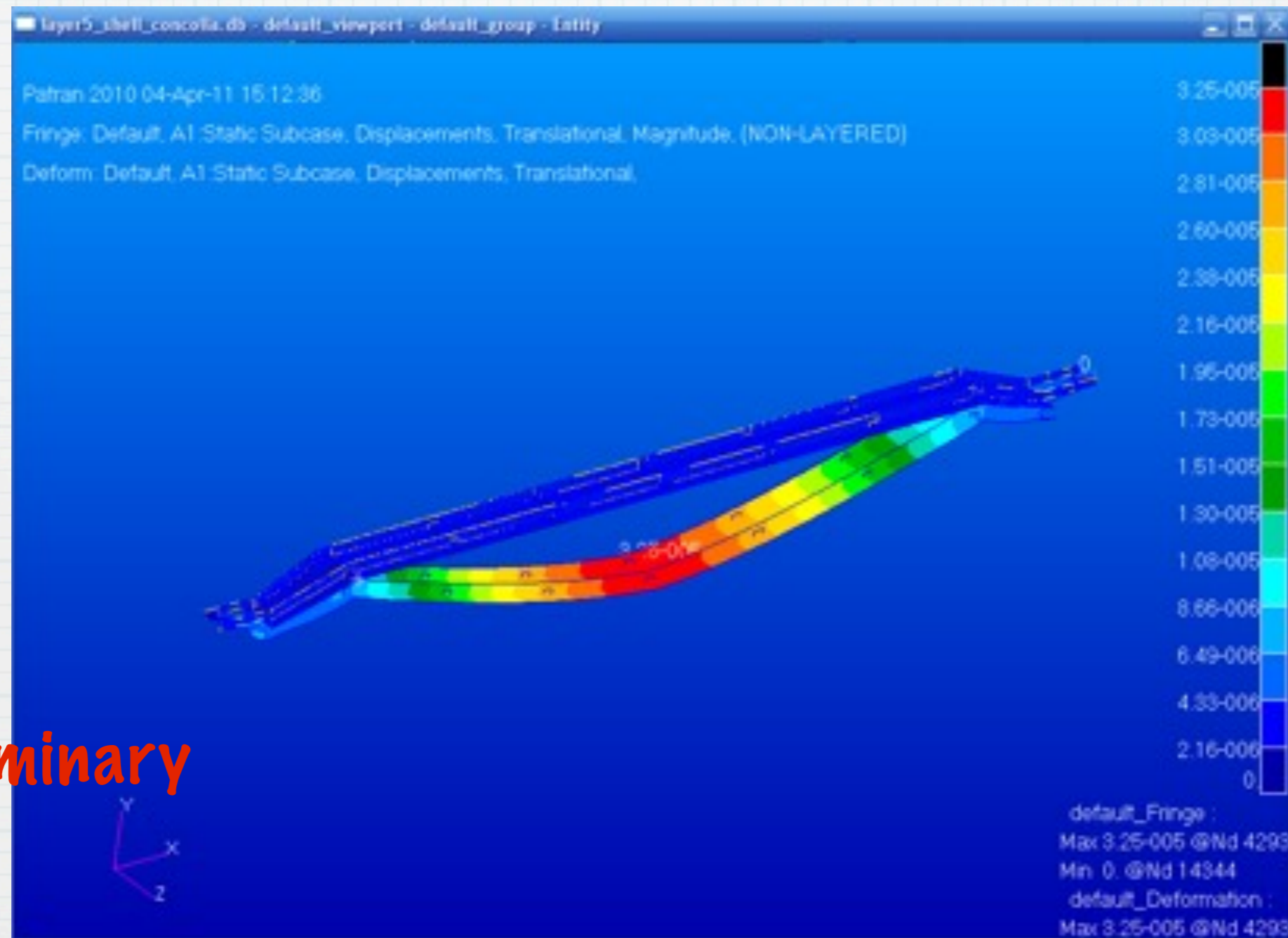


 **Ribs**

# Full Detector and cones



# FE mechanical Analysis long external ladder



# A lot of work to do!!

- \* Optimize the design with MDI
- \* Interface with LO
- \* Define all parts, ribs, end pieces
- \* Space frame
- \* Materials
- \* Cooling
- \* Cables trails
- \* FEA
- \* USW

A long list to share with .....