

# New BESIII Inner Tracker

Possible layouts

# The 3 possible models

- Model 0: the Inexpensive  
3 layers
- Model 1: the Moderate  
3 layers
- Model 2: the Hard Way  
4 layers

# Model 0 (the Inexpensive)

- 6 measured points
- Layer 2 same as KLOE2 layer 1
- Layer 2 is swapped Readout in/Cathode plan out for better radial uniformity

# L1 (all models) length 532 mm

Component	Rin	Rout	Material
Cathode	78.0	81.0	3 mm Honeycomb
Conversion + drift	81.0	84.0	3 mm gas
Transfer 1	84.0	86.0	2 mm gas
Transfer 2	86.0	88.0	2 mm gas
Induction	88.0	90.0	2 mm gas
Readout	90.0		
Outer shield	90.0	93.0	3 mm honeycomb
			15 mm

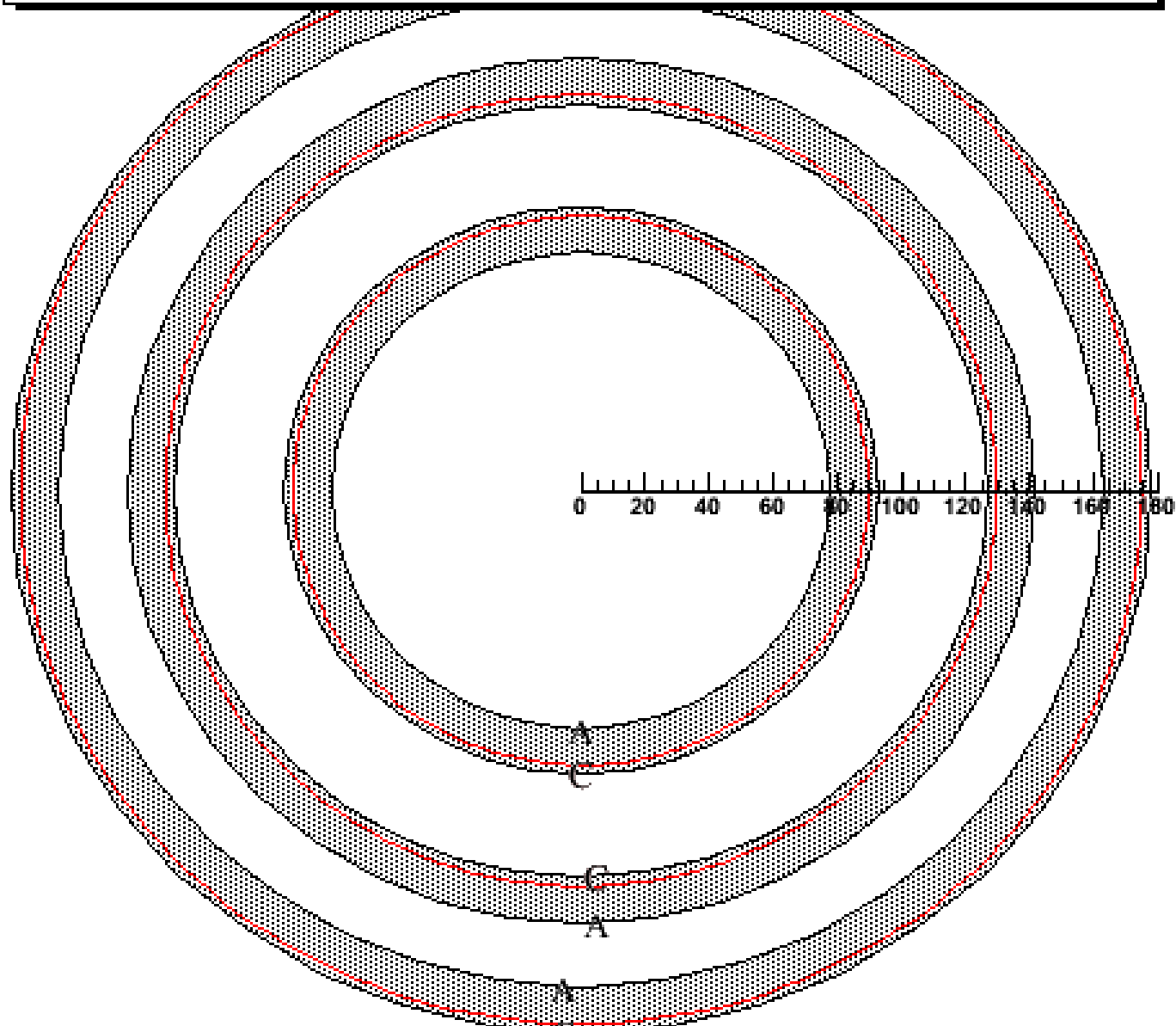
# Model 0, L2 (KLOE2 layer 1 swapped) length 695

Component	Rin	Rout	Material
Inner shield	126.8	129.8	3 mm Honeycomb
Anode	129.8		
Induction space	129.8	131.8	2 mm gas
Transfer 2	131.8	133.8	2 mm gas
Transfer 1	133.8	135.8	2 mm gas
Conversion + drift	135.8	138.8	3 mm gas
Cathode	138.8	141.8	3 mm honeycomb
			15 mm

# Model 0 or 1, L3 length 847 mm

Component	Rin	Rout	Material
Cathode	163.0	166.0	3 mm Honeycomb
Conversion + drift	166.0	169.0	3 mm gas
Transfer 1	169.0	171.0	2 mm gas
Transfer 2	171.0	173.0	2 mm gas
Induction	173.0	175.0	2 mm gas
Readout	175.0		
Outer shield	175.0	178.0	3 mm honeycomb
			15 mm

Radii (mm): L1 78.0- 93.0, L2 126.8-141.8, L3 163.0-178.0



# Model 1 (the Moderate)

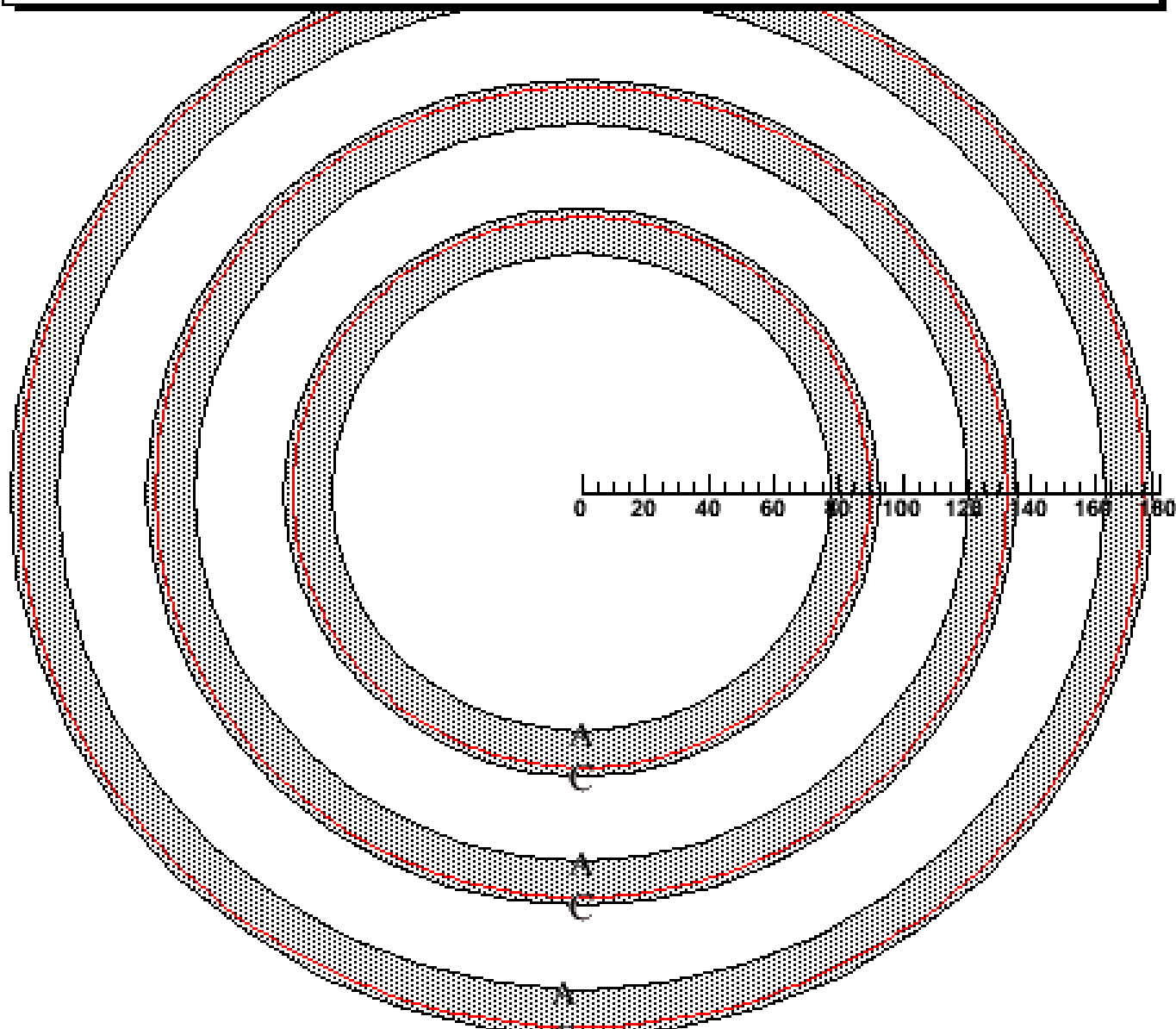
- As model 0 but layer 2 is new
- No component from KLOE2 reused
- No swap in/out



# Model 1, L2 length 690

Component	Rin	Rout	Material
Cathode	120.5	124.5	3 mm Honeycomb
Conversion + drift	123.5	126.5	3 mm gas
Transfer 1	126.5	128.5	2 mm gas
Transfer 2	128.5	130.5	2 mm gas
Induction	130.5	132.5	2 mm gas
Readout	132.5		
Outer shield	132.5	135.5	3 mm honeycomb
			15 mm

Radii (mm): L1 78.0- 93.0, L2 120.5-135.5, L3 163.0-178.0



# Model 2 (the Hard Way)

- 8 measured points
- 4 layers equally spaced
- No component from KLOE2 reused
- No swap in/out
- Layer 1 like models 0 or 1
- Layer 4 like model 0 or 1 layer 3

# Model 2, L2 length 637

Component	Rin	Rout	Material
Cathode	106.3	109.3	3 mm Honeycomb
Conversion + drift	109.3	112.3	3 mm gas
Transfer 1	112.3	114.3	2 mm gas
Transfer 2	114.3	116.3	2 mm gas
Induction	116.3	118.3	2 mm gas
Readout	118.3		
Outer shield	118.3	121.3	3 mm honeycomb
			15 mm

# Model 2, L3 length 742

Component	Rin	Rout	Material
Cathode	134.7	137.7	3 mm Honeycomb
Conversion + drift	137.7	140.7	3 mm gas
Transfer 1	140.7	142.7	2 mm gas
Transfer 2	142.7	144.7	2 mm gas
Induction	144.7	146.7	2 mm gas
Readout	146.7		
Outer shield	146.7	149.7	3 mm honeycomb
			15 mm

Radii (mm): L1 78.0- 93.0, L2 106.3-121.3, L3 134.7-149.7, L3 163.0-178.0

