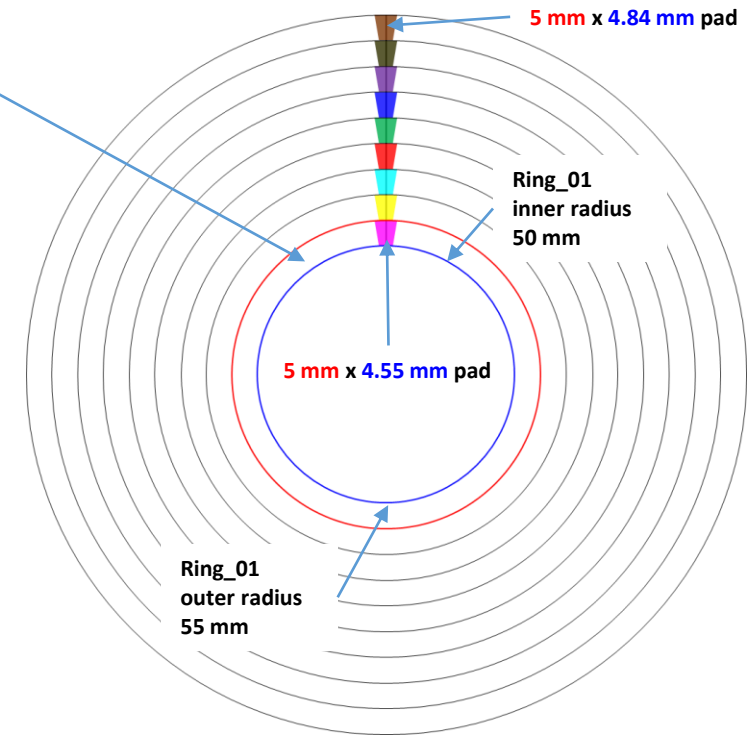


TDIS mRTPC: Trapezoid pad readout: **Current design**

20 concentric rings of 5 mm width (outer diameter - inner diameter)

- Each ring has a **different number** of trapezoid-shaped pads \Rightarrow Ring_01 has 69 pads and ring_20 has 188
- Pad outer radius is fixed (5 mm) for all rings **but inner radius varies from ring to ring** \Rightarrow 4.55 mm for ring_01 to 4.84 mm for ring_20
- **Ring outer radius and pad outer radius** \Rightarrow **define the number of pads / ring**
- **And number of pads / ring and ring inner radius** \Rightarrow **define pad inner radius**
- **Total number of pads = 2576** \Rightarrow **65 ALICE 40 pins connectors**

ring inner radius (mm)	ring outer radius (mm)	pad outer radius (mm)	pad inner radius (mm)	nb pads / ring	
Ring_01	50	55	5	4.55	69
	55	60	5	4.6	75
	60	65	5	4.59	82
	65	70	5	4.64	88
	70	75	5	4.67	94
	75	80	5	4.66	101
	80	85	5	4.69	107
	85	90	5	4.72	113
	90	95	5	4.75	119
	95	100	5	4.73	126
	100	105	5	4.76	132
	105	110	5	4.78	138
	110	115	5	4.76	145
	115	120	5	4.78	151
	120	125	5	4.8	157
	125	130	5	4.81	163
	130	135	5	4.8	170
	135	140	5	4.81	176
	140	145	5	4.83	182
Ring_20	145	150	5	4.84	188
			Total number of pads		2576



TDIS mRTPC: Trapezoid pad readout: **Alternative design**

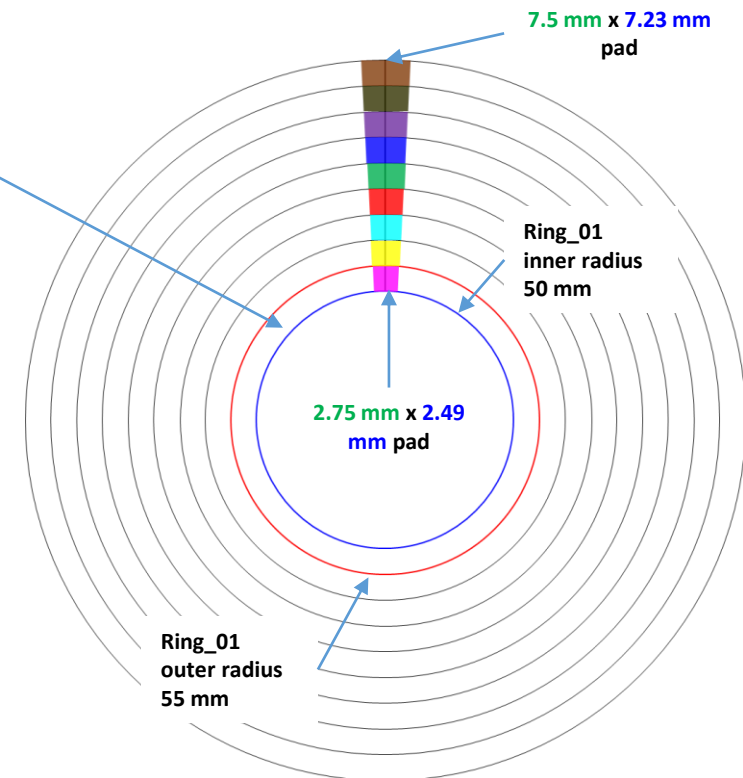
20 concentric rings of 5 mm width (outer diameter - inner diameter)

- Each ring has a fixed number of trapezoid-shaped pads (126 pads / ring), Total number of pads = 2520 \Rightarrow 63 ALICE 40 pins connectors
- Both inner and outer radius of the pads **varies from ring to ring** Proportionally to the outer radius
- **Pad outer radius = ring outer radius / 20, Pad inner radius defined by ring inner radius and number of pads (126)**

Advantages: (Was also suggested during TDIS coll. Meeting)

- smaller pads in inner region of the TPCs \Rightarrow **design will deal with pile up and truncated tracks**
- More intuitive design \Rightarrow Natural arrangement of the pads to connectors (2 sets of 20 pads in the radial directions to one connector **see side 4**)

ring inner radius (mm)	ring outer radius (mm)	pad outer radius (mm)	pad inner radius (mm)	nb pads / ring	
Ring 1	50	55	2.75	2.49	126
	55	60	3	2.74	126
	60	65	3.25	2.99	126
	65	70	3.5	3.24	126
	70	75	3.75	3.49	126
	75	80	4	3.74	126
	80	85	4.25	3.98	126
	85	90	4.5	4.23	126
	90	95	4.75	4.48	126
	95	100	5	4.73	126
	100	105	5.25	4.98	126
	105	110	5.5	5.23	126
	110	115	5.75	5.48	126
	115	120	6	5.73	126
	120	125	6.25	5.98	126
	125	130	6.5	6.23	126
	130	135	6.75	6.48	126
	135	140	7	6.73	126
	140	145	7.25	6.98	126
Ring 20	145	150	7.5	7.23	126
			Total number of pads	2520	



TDIS mRTPC: Trapezoid pad readout: 40-pins connectors

(4x, 2x20 ERNI, 1.27 pitch)

2 × 40 pins connectors for 4 sets of 20 pads arranged in the radial direction

