2007 detectors study at CERN

SiPM time resolution
MAPD S60
Blue sensitive MAPD
New 16ch board
New HV













MAPD S60

5 detectors

Ubias=57.6-58.6v Id=130-170nA Gain=1.64 \cdot 10⁶-1.86 \cdot 10⁶ Gpix=1.19 \cdot 10⁶ -1.28 \cdot 10⁶ Cross-talk n=1.38-1.47 PDE λ =460 nm







MAPD BS 2x2 mm² 3800 pixels sensitivity shifted to the blue light region





















New MAPD S60s

1. Sensitivity shifted to the blue region

2. Pixel's density of 40k per mm² is reached



VIRTEX4



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Main parameters of 16-channel BV cells for Si- photo detectors.

	1	Range of max output voltage	Up to 250V
	2	Range of output voltage regulation	Umax/2 - Umax
	3	Precision of output voltage regulation	10 bit or 12 bit
	4	Output voltages spread (channel from channel)	1%
	5	Stability of an output voltages	0,005 %
	6	Temperature coefficient of an output voltage	200 ppm/K
	7	Maximal average output current	Up to 5 mkA
	8	Self-diagnosis of the BV channel	Yes
	9	Dimensions of 16- channel cell (preliminary)	50x40x4 mm
2	10	System bus	6 line flat cable
	11	Max length of system bus	Up to 100 m
	12	Number of cells per system bus	Up to 127
	13	Number of cells per system controller SC508	508 (8128 channels)

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BV System interface



Conclusions

- 1.Study on time resolution of CALICE tiles was continued
- 2. New light detector MAPD S60 was studied
- 3. New MAPD 1,8x1,8 mm, with 3800 pixels and sensitivity shifted to the blue light region was tested
- 4. New 16 ch ADC board was designed and under construction now
- 5. Multi-channel base voltage system for Si- photo detectors was designed and under construction now