

# CERN ACTIVITY

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## **Activity:**

- Cross-talk monitoring
- Wrapping of the optical fibers with black polythene to reduce the cross talk
- Vertical cosmic muons measurements are ongoing

# Cross-talk monitoring

Sectors: ABCD																
L = laser intensity = 6.26 if not specified																
Dates: 2020-02-03 – 06																
	A				B				C				D			
1	HV=+1.030				HV=+1.100				HV=+1.100				HV=+0.94			
	0 $\Rightarrow$ 0.5				< 0.5 $\Rightarrow$ < 0.5				0 $\Rightarrow$ 0				0 $\Rightarrow$ 0			
	$\Rightarrow$ 0				$\Rightarrow$ 0				$\Rightarrow$ 0.5				$\Rightarrow$ 0			
2	HV=+1.030 – 1.100				HV=+1.150				HV=+1.090				HV=+1.040			
	0 $\Rightarrow$ 0.5				< 0.5 $\Rightarrow$ 0				0 $\Rightarrow$ 0				0 $\Rightarrow$ 0			
	$\Rightarrow$ 0				$\Rightarrow$ 0.5				$\Rightarrow$				$\Rightarrow$ 0			
3	HV=+1.090 – 1.150				HV=+1.040				HV=+1.050				HV=+1.080			
	$\Rightarrow$				$\Rightarrow$				0 $\Rightarrow$				$\Rightarrow$			
	$\Rightarrow$ 0				$\Rightarrow$ 0				$\Rightarrow$ 0				$\Rightarrow$			
4	HV=+1.040 – 1.1000				HV=+1.040				HV=+1.120				HV=+1.110			
	$\Rightarrow$				$\Rightarrow$				$\Rightarrow$				$\Rightarrow$			
	$\Rightarrow$ 0				$\Rightarrow$ 0				$\Rightarrow$ 0				$\Rightarrow$ 0			
5	HV=+1.150		HV=+1.250		HV=+1.250		HV=+1.150		HV=+1.090		HV=+1.100		HV=+1.100		HV=+1.070	
	0 $\Rightarrow$		0 $\Rightarrow$		0 $\Rightarrow$		0 $\Rightarrow$		0 $\Rightarrow$		0 $\Rightarrow$		0 $\Rightarrow$		0 $\Rightarrow$	
	L=6.31		L=6.28		L=6.30		L=6.35		0 $\Rightarrow$ 0		0 $\Rightarrow$ 0		0 $\Rightarrow$ 0		0 $\Rightarrow$ 0	
	5-1		5-2		5-1		5-2		5-1		5-2		5-1		5-2	

Sectors: EFGH																
L = laser intensity = ~6.29 (calibrated on G2 having 3V signal for given HV); Ring 4 and 5: calibrated each time																
Dates: 2020-02-17 – 21																
	E				F				G				H			
1	HV=+0.99				HV=+0.91				HV=+0.94				HV=+0.94			
	0 $\Rightarrow$ 0				0 $\Rightarrow$ 0				0 $\Rightarrow$ 0				0 $\Rightarrow$ 0			
	$\Rightarrow$ 0				$\Rightarrow$				$\Rightarrow$ 0				$\Rightarrow$ 0			
2	HV=+1.04				HV=+0.97				HV=+0.95				HV=+1.01			
	0.5 $\Rightarrow$ 1				0 $\Rightarrow$ 2				1 $\Rightarrow$ 1.2				$\Rightarrow$ < 0.5			
	$\Rightarrow$				$\Rightarrow$				$\Rightarrow$				$\Rightarrow$ 0			
3	HV=+1.01				HV=+0.96				HV=+1.02				HV=+1.02			
	0.5 $\Rightarrow$ 0				1 $\Rightarrow$ 1				0 $\Rightarrow$ 0				0 $\Rightarrow$ 0			
	$\Rightarrow$ 0				$\Rightarrow$ 1				$\Rightarrow$ 0				$\Rightarrow$ 0			
4	HV=+1.02				HV=+1.01				HV=+1.02				HV=+0.98			
	$\Rightarrow$ < 0.5				$\Rightarrow$ 1.5				$\Rightarrow$ 0.5				$\Rightarrow$ 0.5			
	$\Rightarrow$ 0				$\Rightarrow$ 0				$\Rightarrow$ 0				$\Rightarrow$ 0			
	0 $\Rightarrow$		0 $\Rightarrow$		0 $\Rightarrow$		0 $\Rightarrow$		0 $\Rightarrow$		0 $\Rightarrow$		0 $\Rightarrow$		0 $\Rightarrow$	
5	HV=+1.02		HV=+1.04		HV=+1.03		HV=+1.02		HV=+0.99		HV=+1.02		HV=+1.0		HV=+1.0	
	0 $\Rightarrow$		0 $\Rightarrow$		0 $\Rightarrow$ 0		0 $\Rightarrow$ 0		0 $\Rightarrow$ 0		0 $\Rightarrow$ 0		0 $\Rightarrow$ 0		0 $\Rightarrow$ 0	
	5-1		5-2		5-1		5-2		5-1		5-2		5-1		5-2	

# Wrapping of the optical fibers with black polythene

Before



After



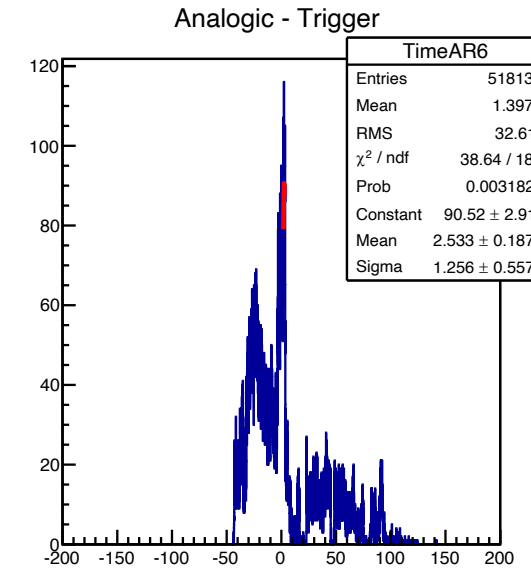
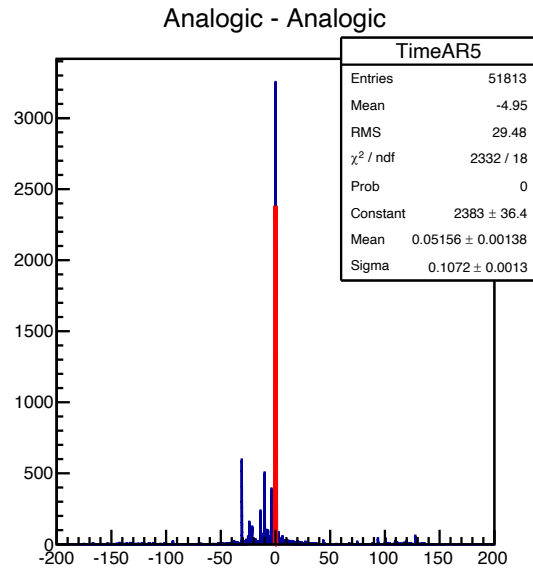
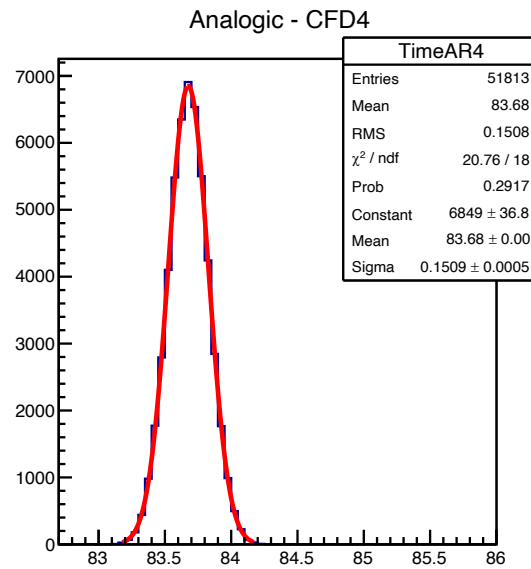
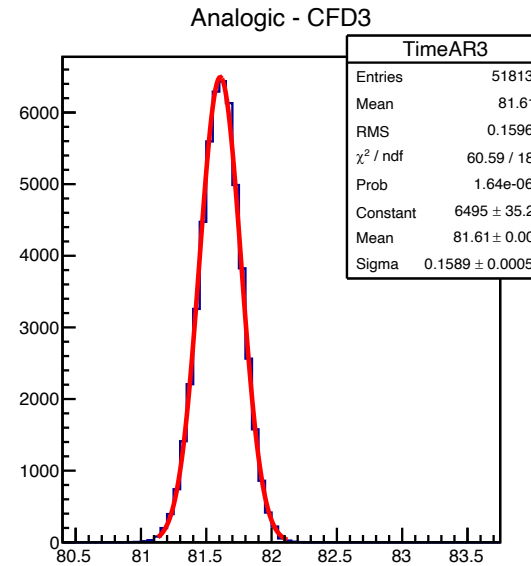
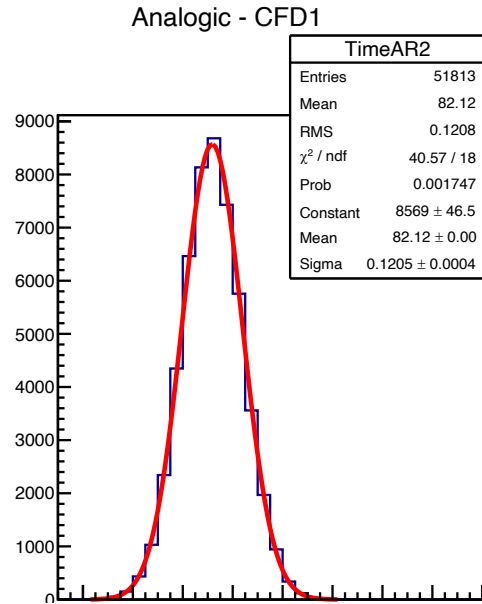
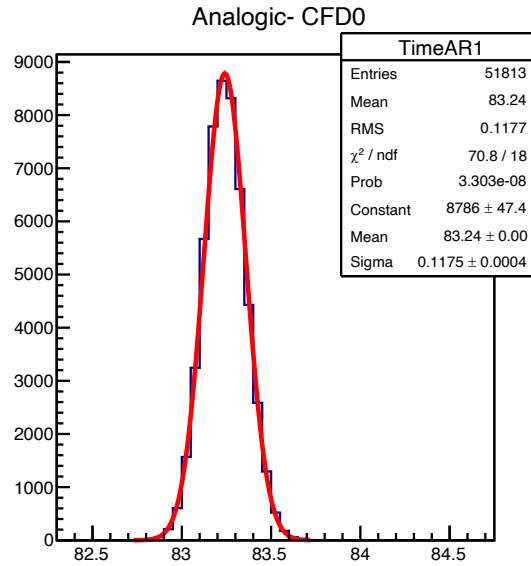
- Cross talk checked among the sectors and within the sector
- Configuration for 300 MIPS (3V)
- Cross talk improved after the wrapping of the black polyethene



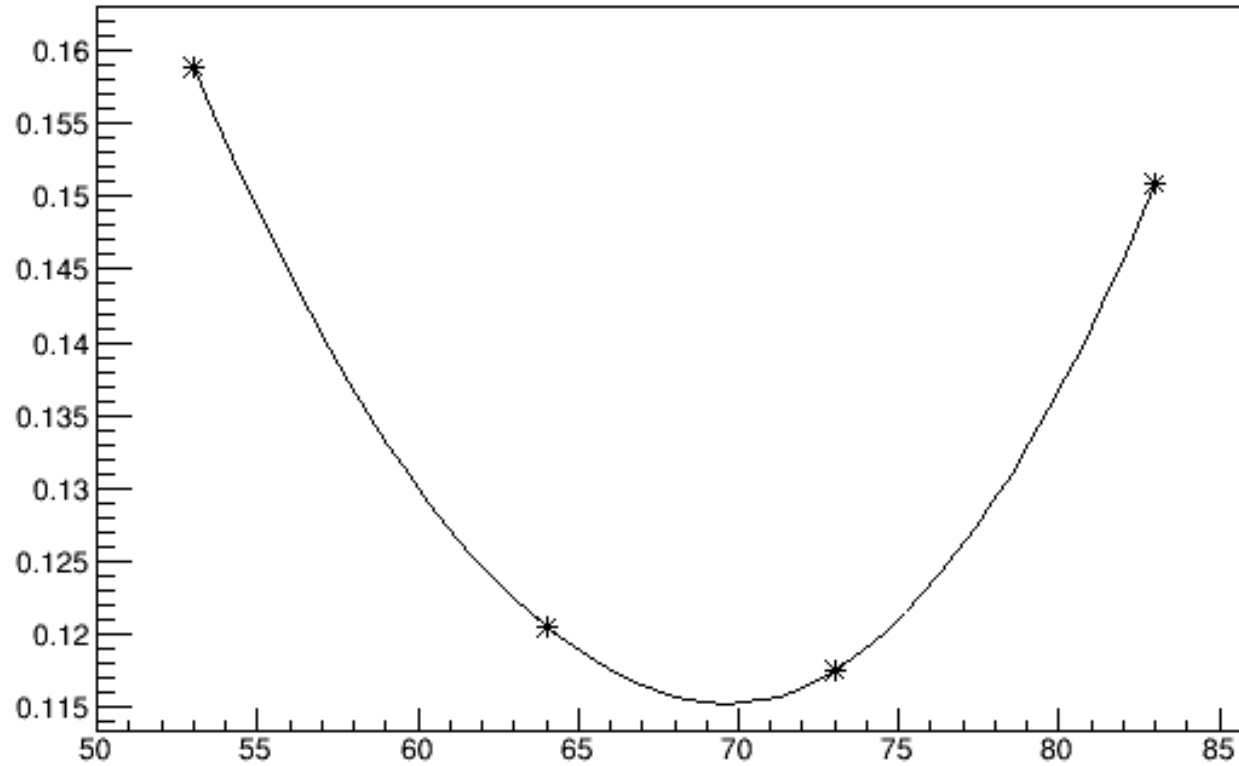
## Current status



# CFD delay measurement



Graph



- No change in resolution between 64 and 73 cm cable length
- Final cable length for CFD = 69 cm

