Scientific cryo-detectors instrumentation developments

Horacio Arnaldi

Biennale APC - 22/05/2024



Who am I?

Particle/radiation detectors

Auger (HEP)



SiPM

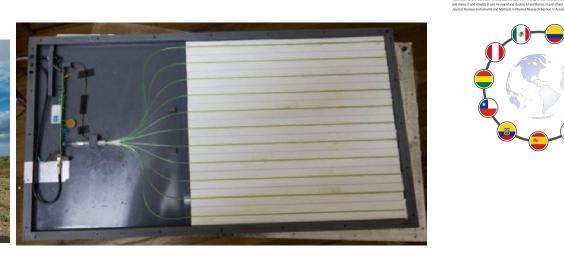
SWGO (GRBs) (~4000 masl)



LAGO (GRBs, Solar physics)

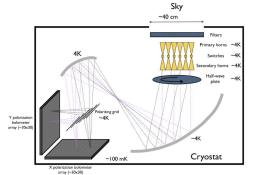


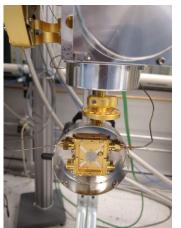
Journal: AIP Conference Proceedings (2009). DOI: 10.1063/1.3141355 5. The data acquisition system of the Latin American Giant Observatory (LAGO). Author(s): Haro, M Sofo and Arnaldi, Luis Horacio and Alvarez, W and Alvarez, C and Araujo, C



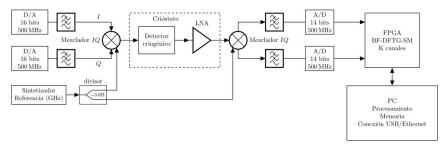


Who am I?

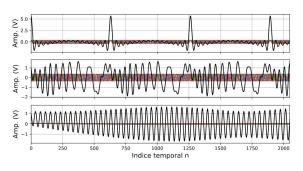


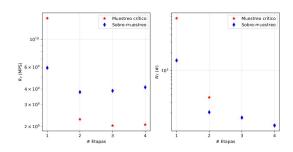


MKIDs detection chain developments (QUBIC)



- How to readout many (~10000) cryo-detectors
- Optimizing hardware usage in the process



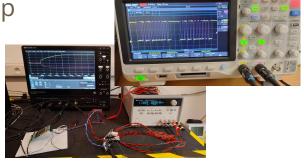


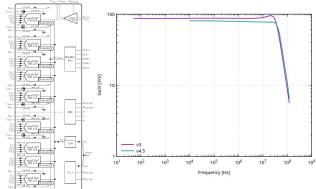
CMB-S4



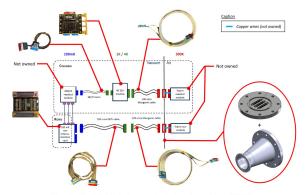
RO Working Group







Cryo setup at APC



Schematic of the APC-Lab dilution instrumentation for the read-out module test (CMB-S4)

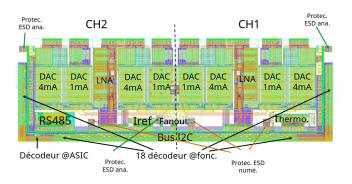
30/04/2024



Athena - WFEE

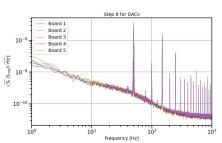
- ASIC developments/tests
- Irradiation test @Germany
- Low-noise detection chains

TDimensions: 2140 um x 6550 um





	ATHENA X-IFU WFEE AstroParticule et Cosmologie, Université Paris Cité	Ref.: AwaXe_v4-TID-report Issue: 1
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	AwaXe_v4 TID report	
	<u> </u>	
	2	X-ray Integral Field Unit
1 Objec	ative	





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Merci!