Opportunity for Contribution at CINVESTAV

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Workshop - Photon Detection System of DUNE Far Detector 2

July 27, 2021

Outline

- People and experience
- Equipment and resources
- Tests

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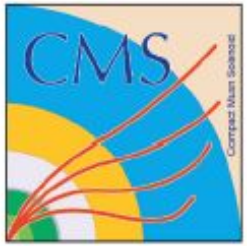
HEP group collaborations



Our group

G.Sánchez O.Sanders

O. Miranda L.Montaño M.Ayala

G.Moreno M.Fontaine

Luis Montaño - Header of the lab

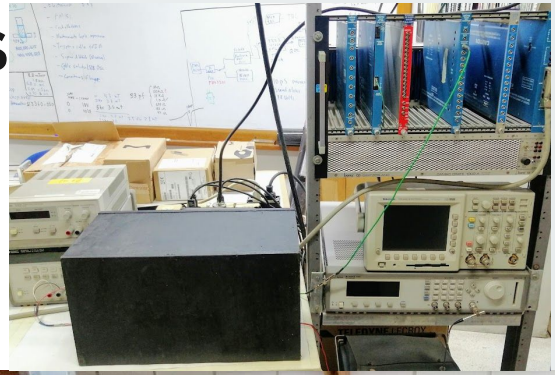
Marcos Fontaine - Electrical engineer

Marco Ayala - Ph.D. student

Sub-system	Experiment	Participation
E791	Fermilab	Summer fellowship (1994)
V0A / ITS(SDD) / New ITS	ALICE, CERN	Mechanical design, module tests, radiation damage studies, light collection improvements, assembly, beam tests, shifts (1998-2008, 2018-2019)
Barell detector	BM@N, JINR	Module tests (2018)
BeBe, mBB	MPD-NICA, JINR	Mechanical design, prototype tests, light collection improvements (2017-2020)
X-ARAPUCA	Lab. Leptons, UNICAMP	Prototype test (2019)

EQUIPMENT AND RESOURCES

- Equipment: Oscilloscopes, digitizer, analog signal generator, pulse generator, power supplies, NIM, CAMAC, ...
- Detectors/materials: radioactive sources, PMTs, SiPMs (Hamamatsu, SensL) plastic scintillators(BC-400 series), optical fibers, optical grease, leds UV and VIS, ...
- Cryogenic related: Dewars, vacuum pumps, flanges, ...
- Founding per year (USD):
  - ~$7k (with technical limitations)
  - Maybe next year we can get another ~$15k
- CINVESTAV other institutions facilities: Gamma beam (radiation damage studies)



TESTS

At room temperature and LN_2 baths:

- SiPMs characterization (led pulses): I-V curve, gain, crosstalk, after-pulse, S/N ratio, dark noise, ...

Radiation damage analysis on prototypes/materials using Gamma beam facility (previously requested).

Thank you!

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