



Ariel Matalon

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1st Year PhD Student,
Department of Physics, UChicago

NSF Graduate Research Fellow,
Kavli Institute for Cosmological Physics



Research Interests

- Detector development for particle physics, astrophysics, and astronomy
- Nanofabrication, semiconductor physics

Programming

- ROOT/C++, Python, Mathematica

Relevant Coursework

- Particle Physics, Particle Detectors
- Advanced Methods of Data Analysis
- Computational Physics

Skills & Other Interests

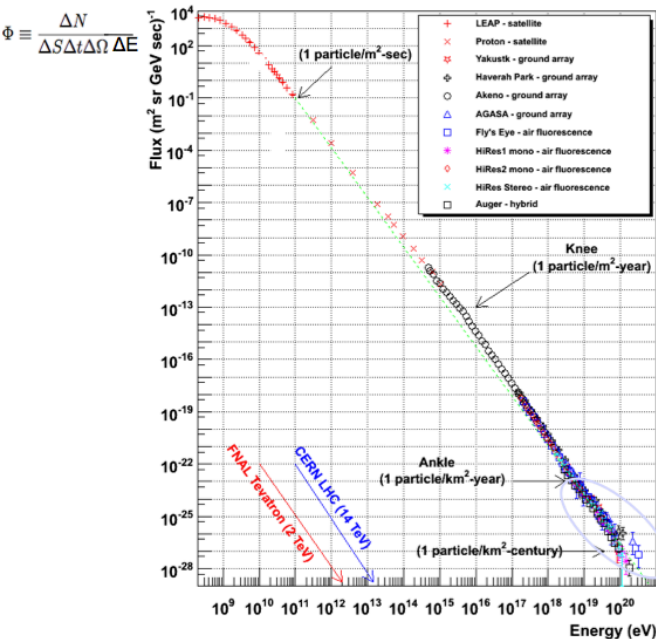
- Language: Hebrew, Italian
- Scientific communication, science outreach

February 23, 2017

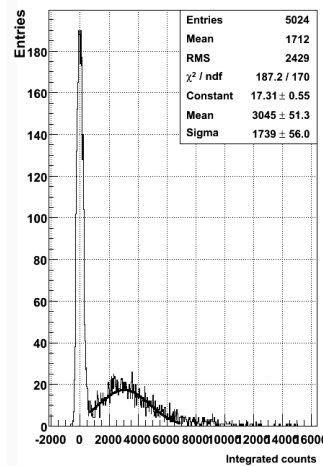


Precision Characterization of PMTs for the Fluorescence detector Array of Single-pixel Telescopes (FAST): 2013-16

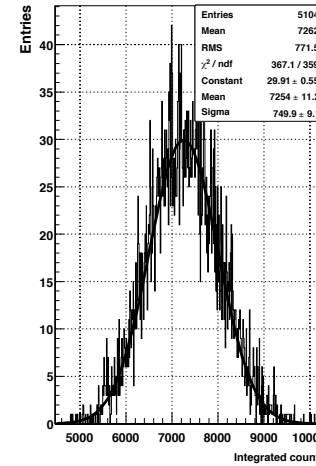
Cosmic Ray Energy Spectrum



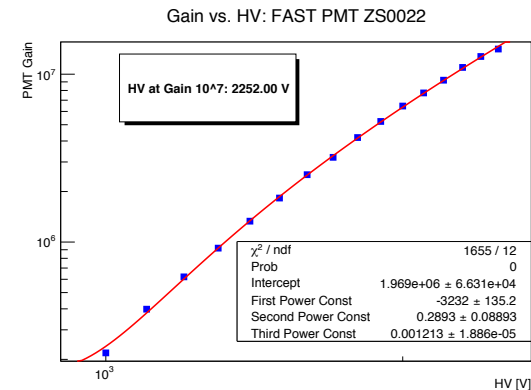
SPE



Many PE

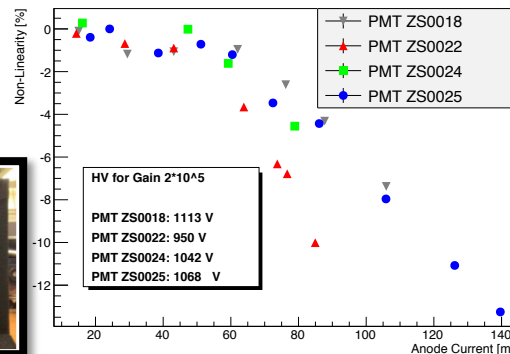


Gain



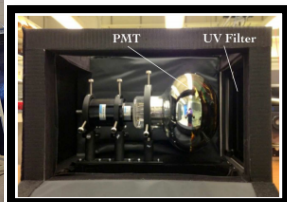
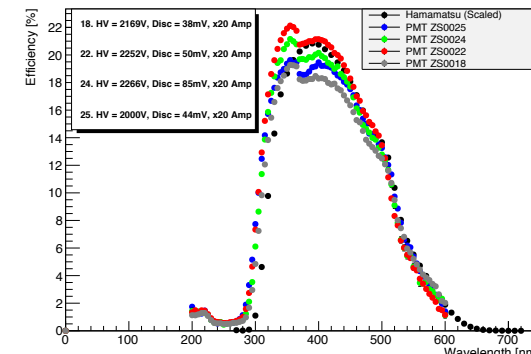
Diff. Non-Linearity

Non-Linearity: FAST PMTs

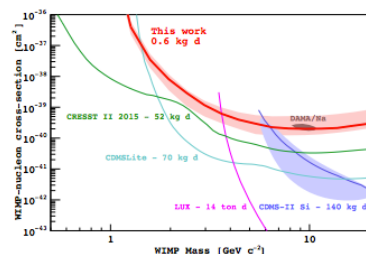
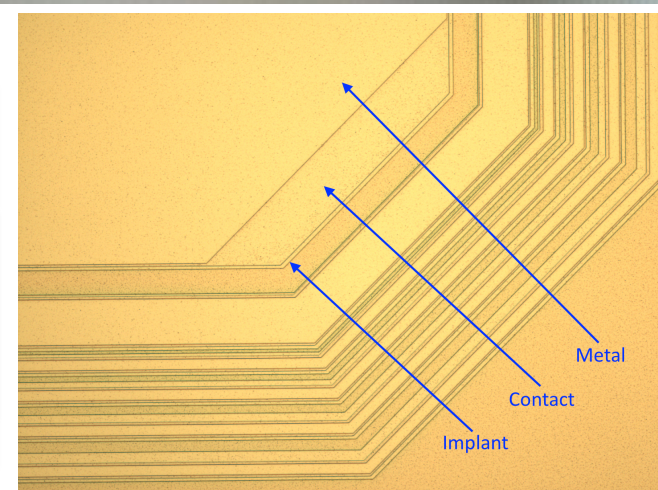
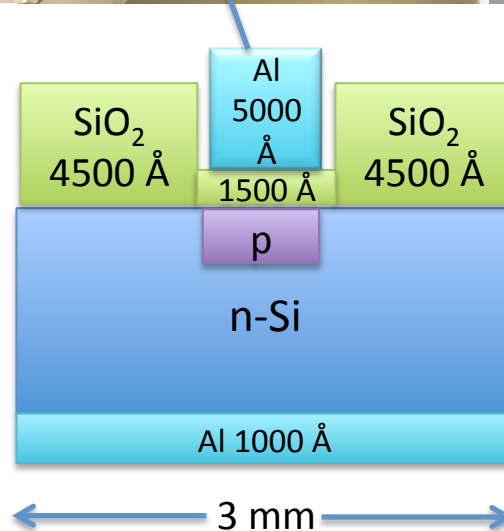
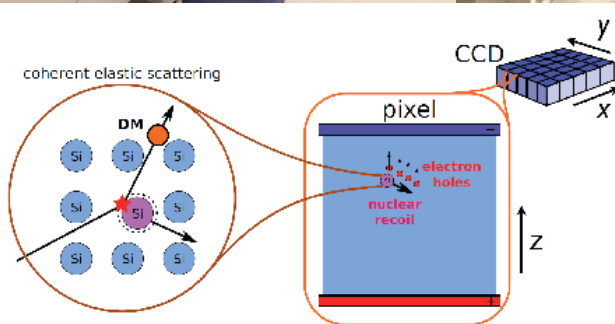
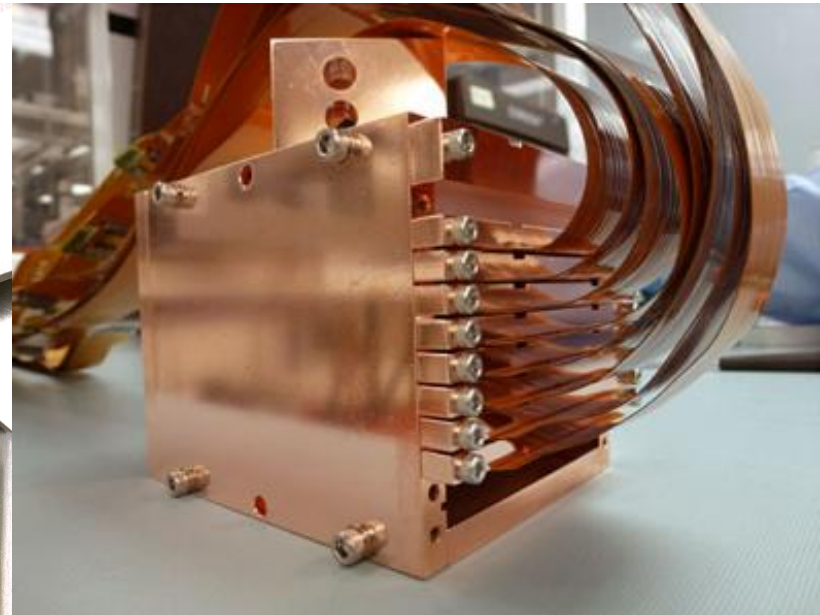
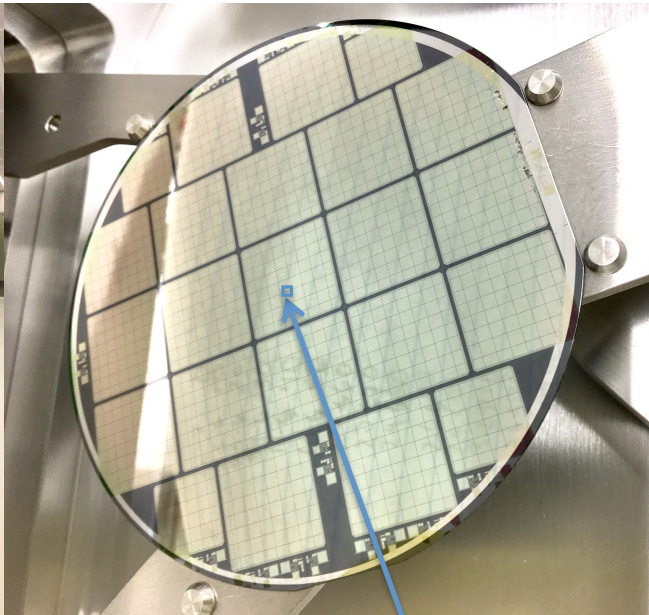


Detection Eff.

Detection Efficiency: FAST PMTs



DAMIC1kg Detector Fabrication at the Pritzker Nanofabrication Facility: 2016-Present



Implant/Contact/Metal Masks (5x)