



Contribution ID: 2296 Contribution code: SUPG054

Type: **Poster Presentation**

## SiPM integration testing for FACET-II pair spectrometer

*Sunday, 19 May 2024 16:00 (2 hours)*

A pair spectrometer, designed to capture single-shot gamma spectra over a range extending from 10 MeV through 10 GeV, is being developed at UCLA for installation at SLAC's FACET-II facility. Gammas are converted to electrons and positrons via pair production in a beryllium target and are then subsequently magnetically analyzed. These charged particles are then recorded in an array of quartz Cherenkov cells attached to silicon photomultipliers (SiPMs). As the background environment is challenging, both in terms of ionizing radiation and electromagnetic pulse radiation, extensive beamline testing is warranted. To this end, we present the results of our tests, correlated with electromagnetic finite-element and Geant4 Monte Carlo studies.

### Footnotes

### Funding Agency

### Paper preparation format

LaTeX

### Region represented

North America

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**Session Classification:** Student Poster Session

**Track Classification:** MC6: Beam Instrumentation, Controls, Feedback, and Operational Aspects: MC6.T03 Beam Diagnostics and Instrumentation