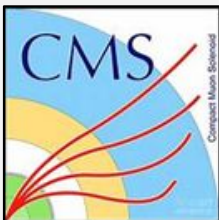


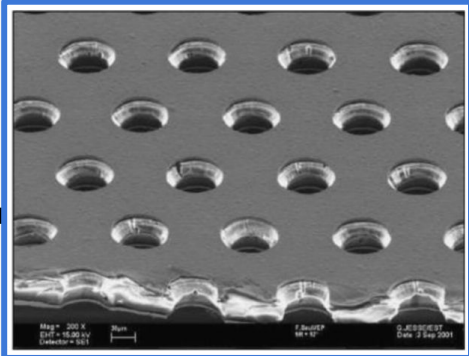
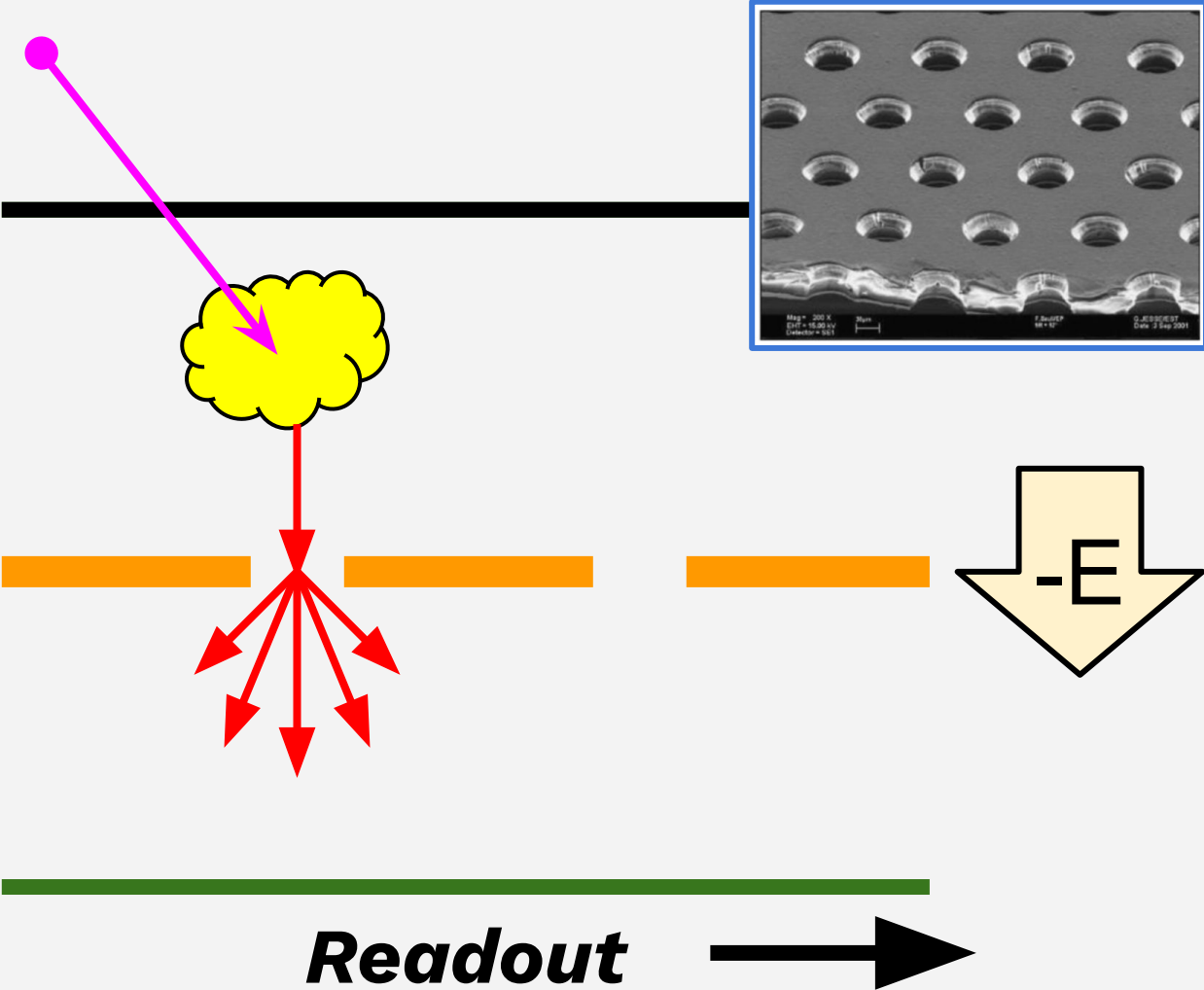
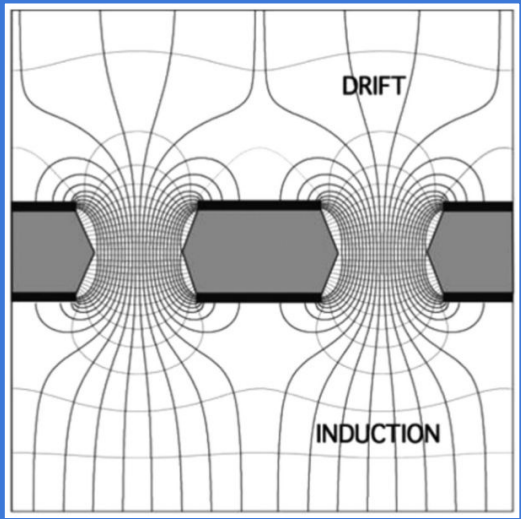
Performance of ME0 GEM Detectors with Cosmic Rays and in Test Beam



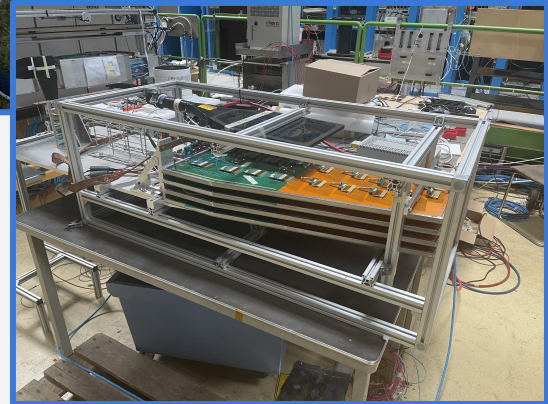
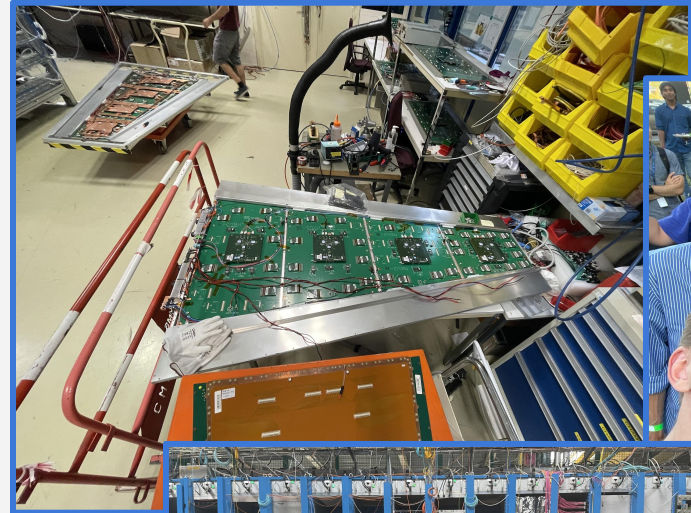
Nicholas Kurth
Antonello Pellecchia, Ph.D.

June 22, 2023

GEM Basics



GEM Lab



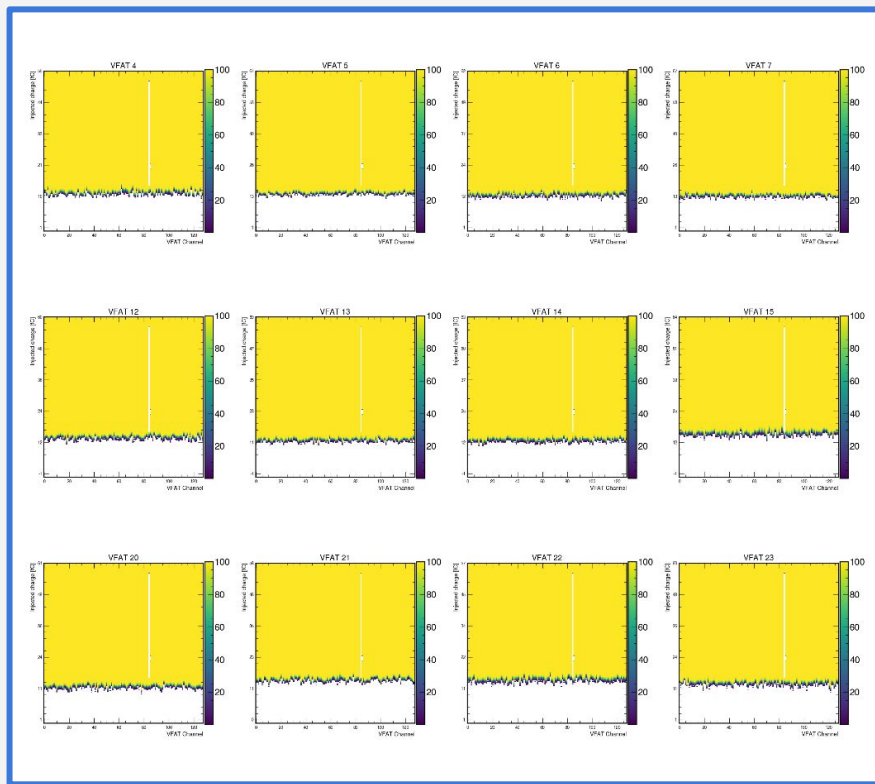
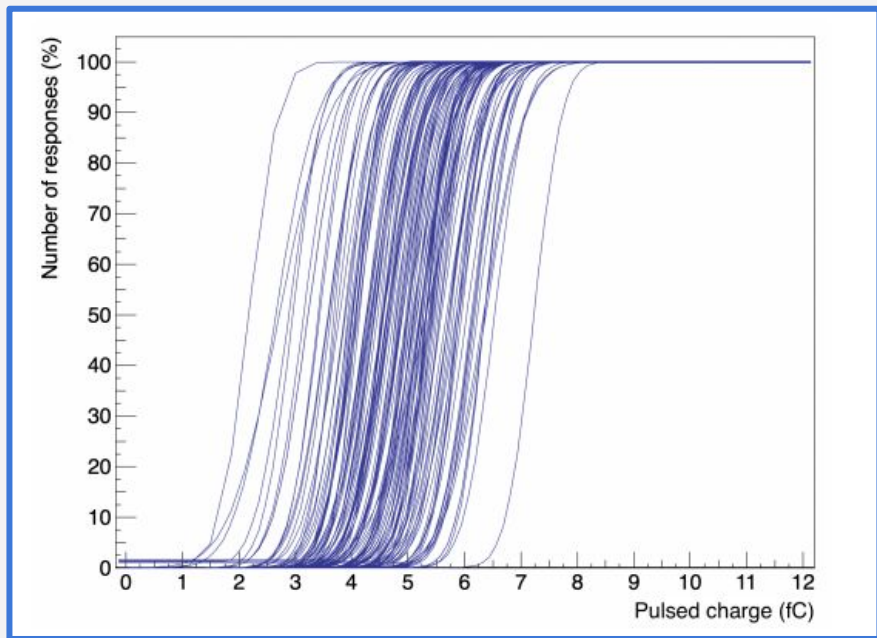
Research Project

Performance analysis of ME0 GEM detectors when irradiated with cosmic rays and a test beam

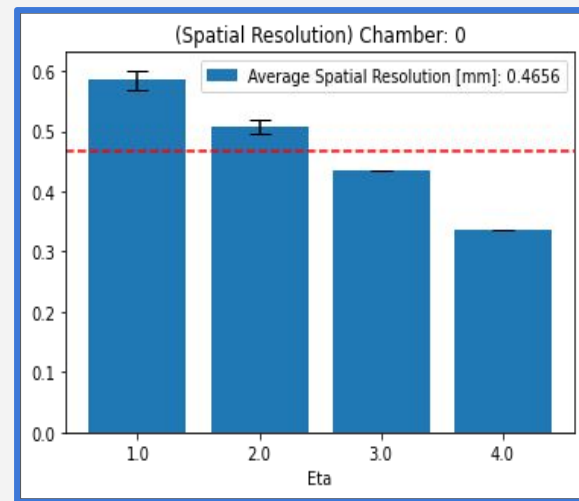
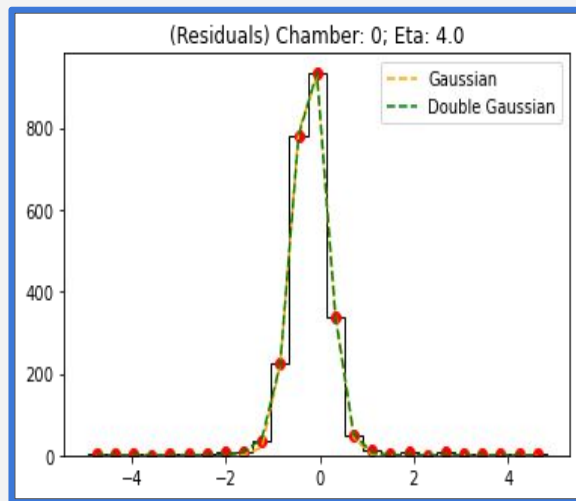
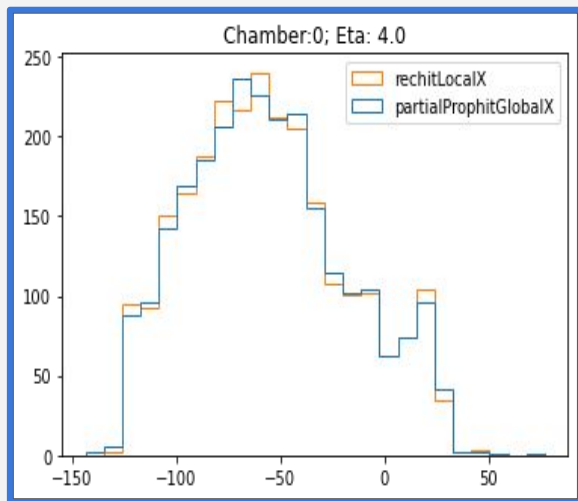
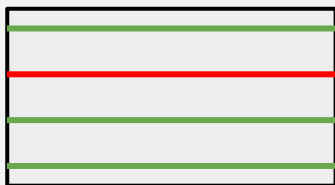
Progress Thus Far

- Understanding the design, production, and quality control of GEM detectors
- Using Uproot, Matplotlib, Numpy, etc. for data analysis
- Creating S-curves and understanding their relation to detector performance
- Collection of data from exposure to cosmic rays

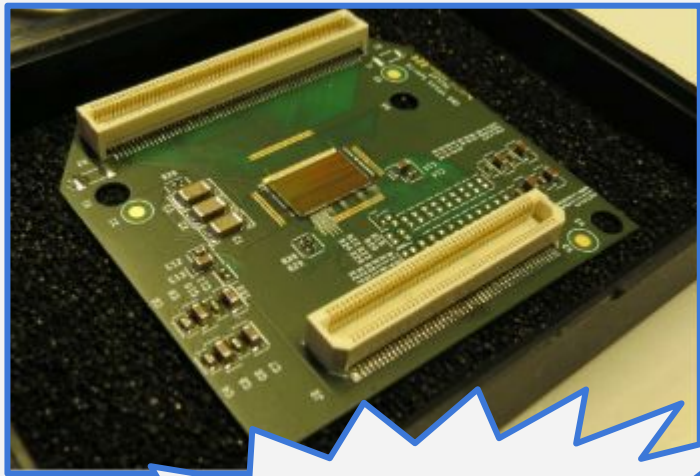
Progress Thus Far



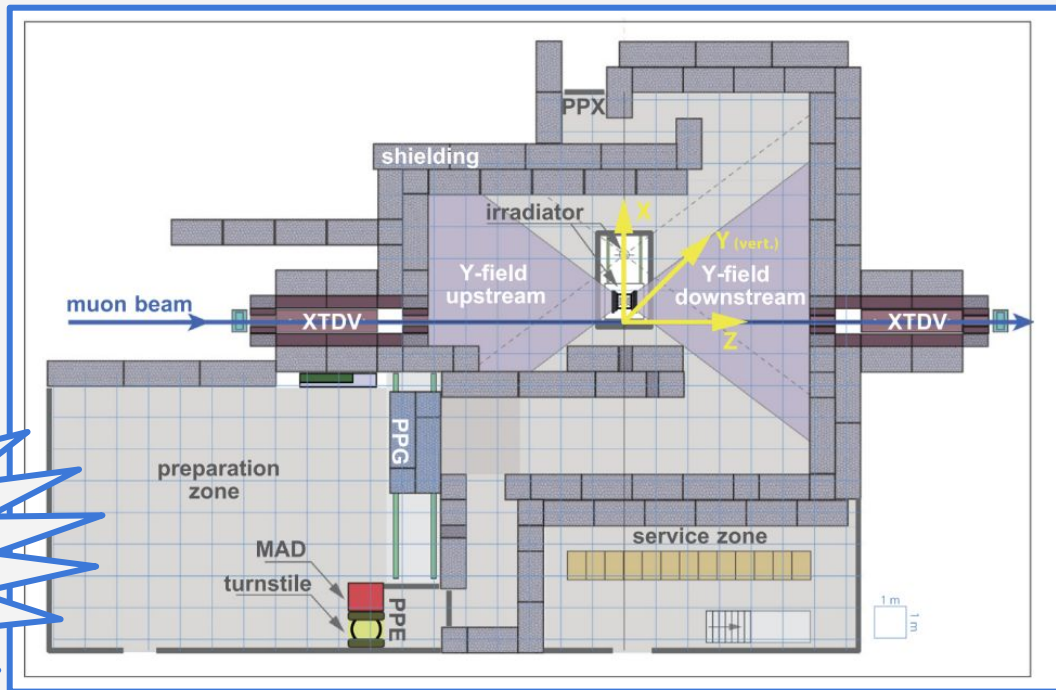
Progress Thus Far



Future Challenges



**Chips and
Test Beam**



Sources

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***Performance of
ME0 GEM Detectors with
Cosmic Rays and in Test Beam***

Questions?

Tell us what experiment you are working on, what your role is and what you have accomplished, so far, as well as any potential roadblocks you foresee.

- Project: GEM detectors for CMS
- Role: data analysis and acquisition
- So far: re-learned Python. How the detectors work and the associated electronics. How to collect and analyze data
- Roadblocks ahead: test beam! → we have a short time frame to collect data