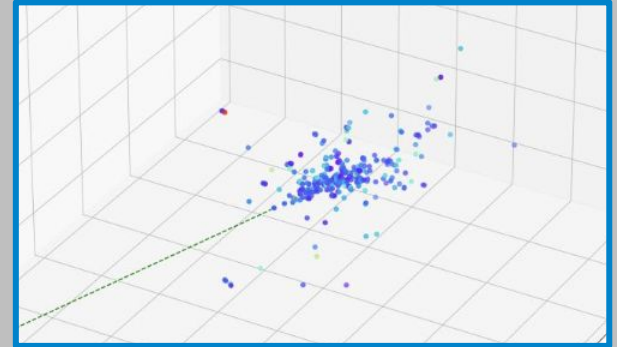


Imaging Calorimetry for EM Barrel with ToF



ANL EIC Calorimetry Team

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Imaging calorimeter based on monolithic silicon sensors

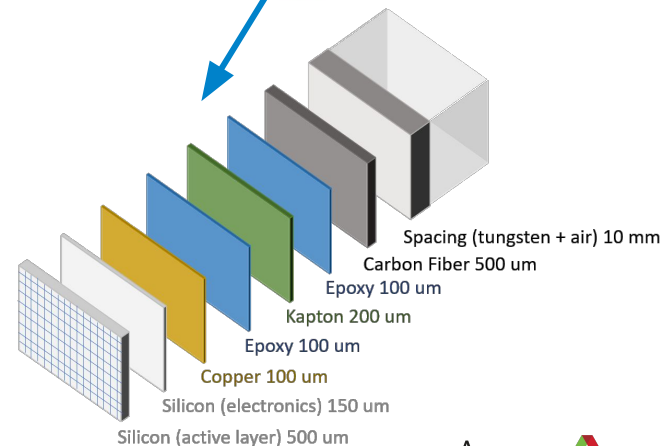
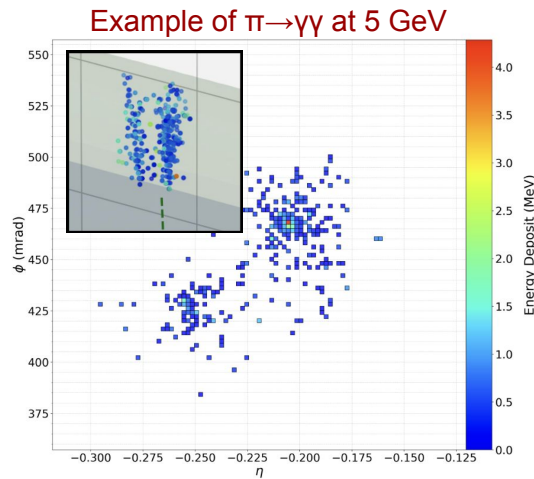
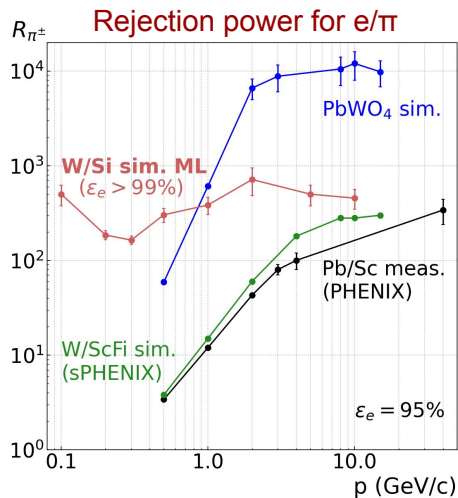
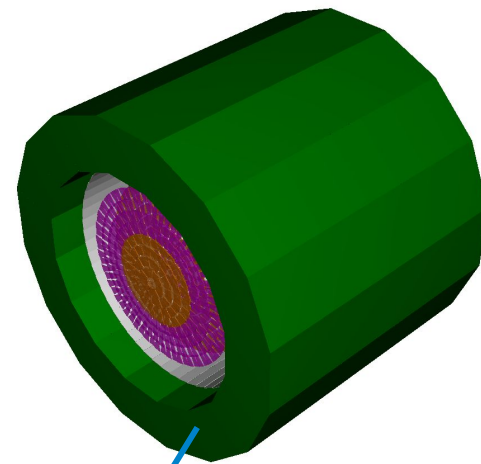
AstroPix (developed for NASA, off-the-shelf)

<https://arxiv.org/pdf/2101.02665.pdf>

- Have no stringent power and cooling requirements (used in space)
- Energy resolution: 2% within dynamic range (20 keV ~ a few MeV)
- Time resolution: 50 ns

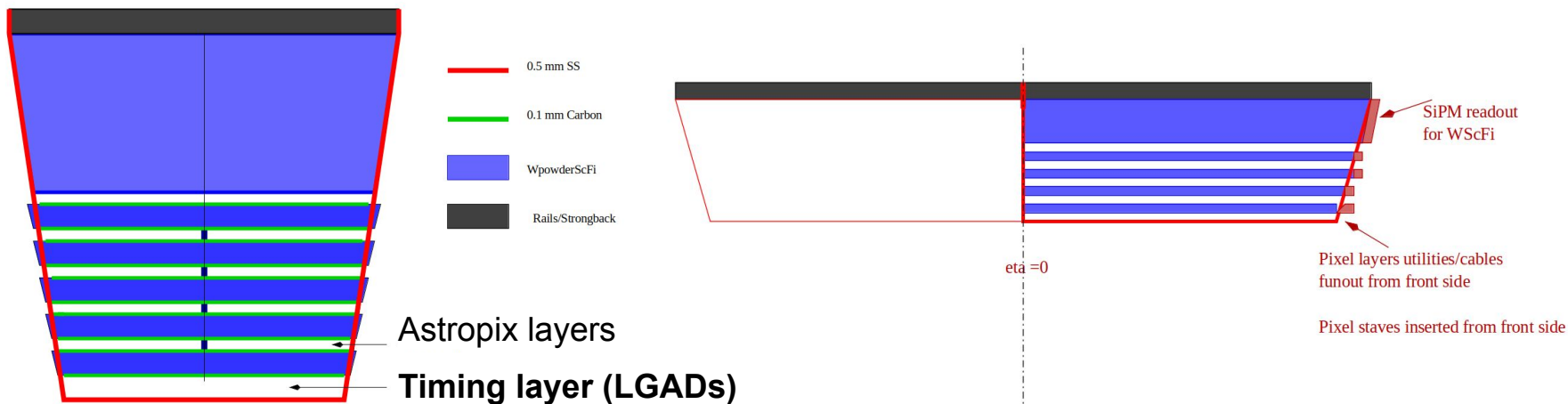
Ongoing design optimization using the simulation with IP6@EIC software framework with **AstroPix digitization, 3D clustering, ML algorithms, ...**

Tests against **YR benchmarks**: separation, shower separation, spatial and



SiFi/W Calorimeter

Alternative to use instead of W layers + ToF Layer



Barrel ECal Dimensions

- length: 370 cm
- bore: 115 cm
- radius: 152 cm