babyMOSS Beam Tests – Summary and Outlook

- **Beam Tests at Fermilab Test Beam Facility**
  - Commissioned a 7-plane babyMOSS telescope and took data with 120 GeV protons at FTBF 5/22-6/4
    - Spatial resolution consistent with expectation; Strong dependence of the cluster size on incident angle
    - Finish data analysis and report the findings
  - Retake data at large incident angles and large VCASB on 6/26-7/12 with
    - improved power cable connection (led to power loss from first run)
    - improved holder (secondary shower at large incident angles)
    - longer trigger delay window (loss of synchronization by the DUT at large VCASB)
    - add DC-LGAD+ETROC2 planes with precision timing reference (next page)
  - Future beam tests at FTBF, Jlab, DESY in the fall/spring
    - Temperature dependence of efficiency, fake hit rate and cluster size
- **SEL Tests at Berkeley Accelerator Space Effects Facility**
  - Searched for SEL-sensitive areas on babyMOSS with motion-controlled collimators on 5/22-5/23
    - Confirmed SEL and identified sensitive areas with Xe beam (incomplete)
    - Finish data analysis and report the findings
  - 2nd SEL test on 7/1
    - Modified software with extended time interval to check the DAC values after SEL
    - Measure SEL cross-section as a function of LET (~8 hours)
    - Complete the search for SEL-sensitive areas with X-Y scan

BabyMOSS+ETROC2 Telescope - 202406