

Monolithic Si work at SCIPP

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Have a lot of experience building conventional heterogenous modules and investigating associated components (ASICs, sensors, data transmission, assembly) for different HEP experiments:

- ATLAS SCT, CMS, LHCb in the past.
- Current very strong involvement in ATLAS ITk Strips (building 2000 modules, testing 6000 sensors).

Consider monolithic sensors to be VERY important for the future of tracking.

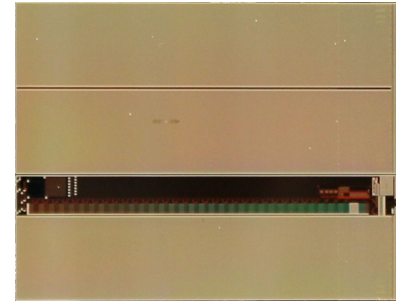
- Needed “even” for outer tracking layers for a future electron collider

Have done monolithic R&D in the past (CHESS chips, to investigate the technology for ITk Strips)

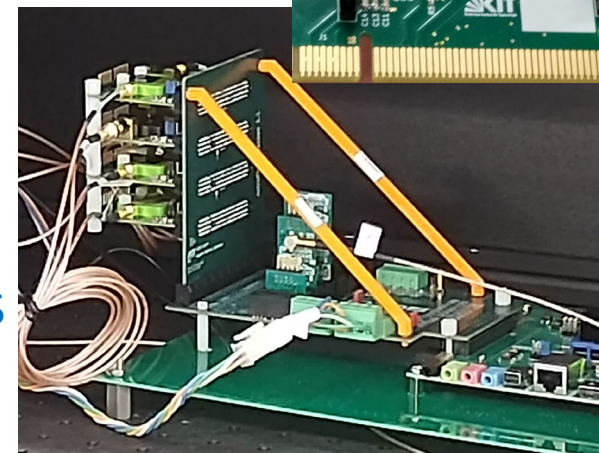
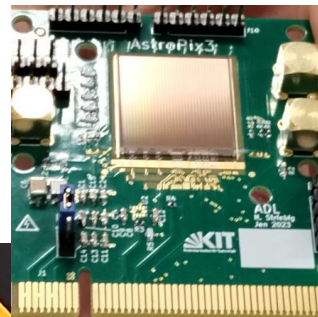
Were invited to participate in Barrel EM Calorimeter for ePic (EIC).

- The imaging calorimeter is based on AstroPix chip, developed by a collaboration of **NASA (Goddard), Argonne and KIT**.
 - Maturing design, currently on version 4
- Plan on contributing to the topics of module design, testing, sensor performance until ATLAS ITk contribution is fulfilled
 - To switch to the module+stave+tray production after that.

→ Consider this as a synergistic activity, that should provide the necessary experience for large-scale monolithic active area experience for the next HEP collider.



CHESS-2



AstroPix v3 test card and telescope at Argonne