

# Cambridge HEP Silicon: current activities

- Current Cambridge HEP Silicon activities focused on ATLAS ITk:
  - Barrel Strip Sensor Quality Control: ~3300 sensors, and
  - Barrel Strip Module Assembly & QC tasks: ~1000 modules
- Studies on operational characteristics of silicon sensors and novel devices
  - Radiation induced performance degradation towards end-of-life (M. Arratia)
  - Detailed studies of long-term operational characteristics (C. Klein)
  - Radiation hardness and reliability of GaN devices for HV switching (Perovič, Chiang, Mullin)
- Full size sensor prototype studies
  - Design validations: characterisation and performance evaluation
  - R&D to arrive at, and validate, Quality Control protocols
- Starting activities to contribute to LHCb Mighty Tracker work
  - Characterisation of new CMOS detector designs
  - Radiation damage investigations

- Build on experience gained from ATLAS ITk & LHCb MT work:
  - Quality Control, Quality Assurance of sensors, modules
  - Operational stability of sensors, modules
  - Full size prototype validations
  - Radiation damage characterisations
- Looking ahead: beyond monolithic Silicon sensors
  - Radiation damage mechanisms in integrated (CMOS) designs
  - Module design, assembly and performance evaluation
- Cambridge HEP will be part of the new Cavendish Laboratory National Facility
  - World class cleanroom facilities
  - Device fabrication facility
  - Ample opportunities to cooperate with colleagues from other fields