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## Mu3e vertex and tracking system

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The Mu3e experiment is searching for the lepton flavour violating decay  $\mu^+ \rightarrow e^+ e^- e^+$ . In an environment of up to  $10^9$  muon decays per second the detector needs to provide precise vertex, time and momentum information to suppress both physics and accidental background. The detector consists of cylindrical layers of 50  $\mu\text{m}$  thin High Voltage Monolithic Active Pixel Sensors (HV-MAPS) placed in a 1 T magnetic field, which allow a precise vertex and momentum reconstruction. Additional layers of fast scintillating fibre and tile detectors are providing sub-nanosecond time resolution.

The development of the Mu3e vertex and tracking system are described, showing the R&D progress on the chip technology and module construction.

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**Session Classification:** Detectors in design and construction