

ATLAS Canada Collaboration

Alberta
Carleton
Montréal
Simon Fraser
Toronto
TRIUMF
UBC
Victoria
York



32 University/Lab. physicists Over
80 people, including Engineers,
Technicians, Students

Educational Role

20 UG Summer Students
25 Graduate Students
16 Post Docs

Focus on Liquid Argon Calorimetry

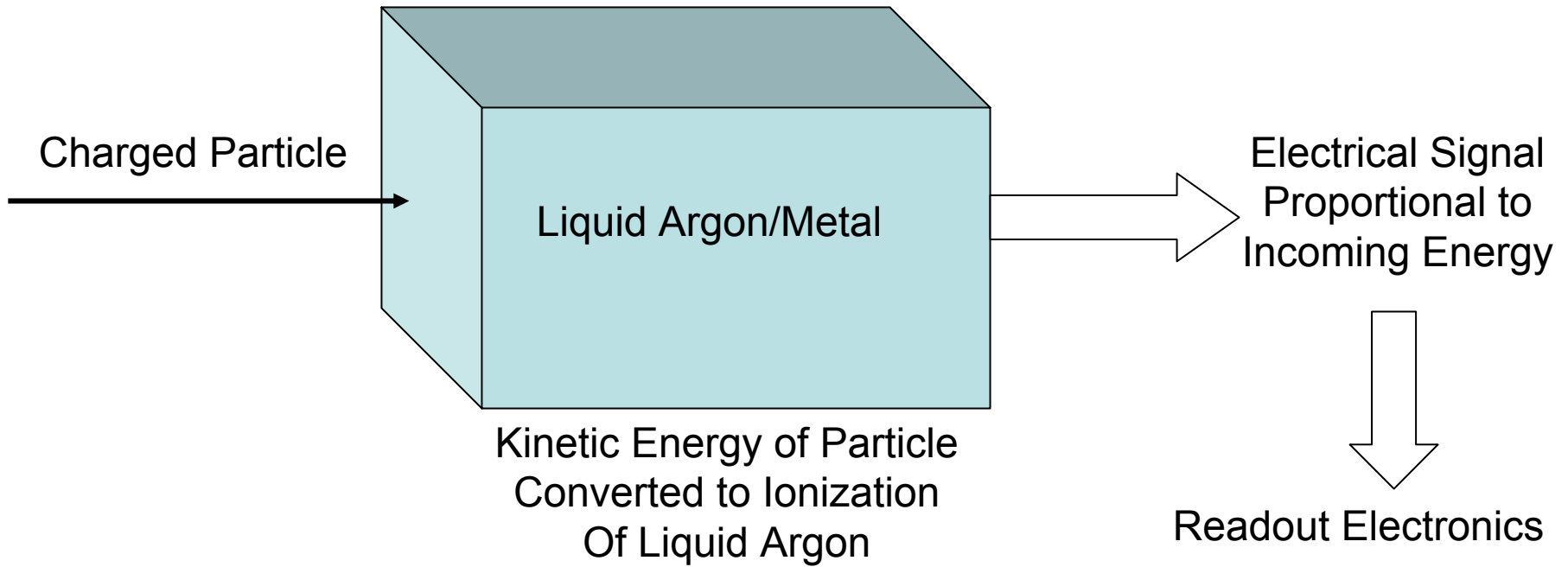
- 4 NSERC Funded Construction Projects

- Endcap Hadronic Calorimeter
- Forward Hadronic Calorimeter
- Front-End-Board Electronics
- Endcap Signal Cryogenics Feedthroughs

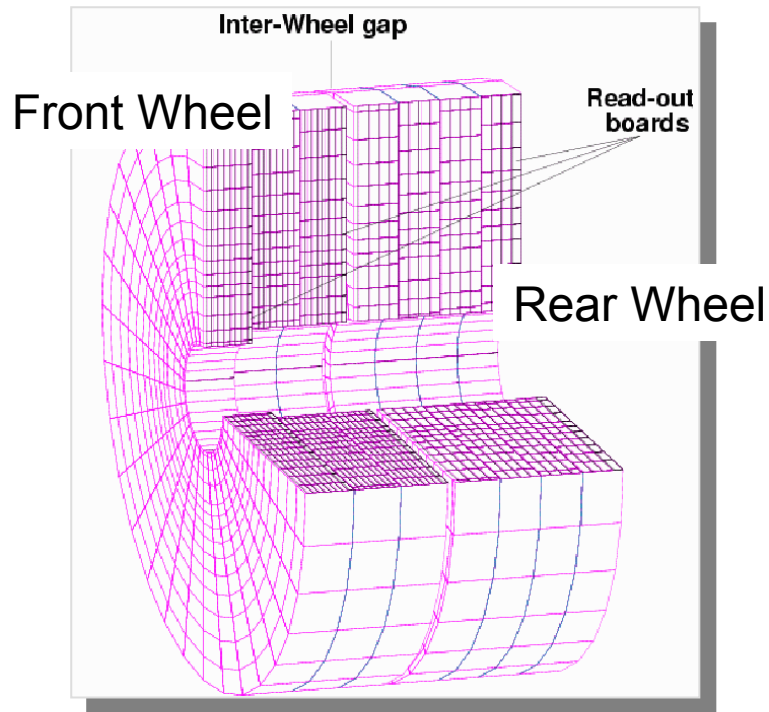
- Other Important Activities

- Radiation Hardness Studies
- Physics Studies
- Event Filter Processor Farm
- Computing - soft/hard
- Pixel testing & assembly

Why Is It Called a Calorimeter?



Hadronic Endcap Calorimeter



2 Front and Rear Modules

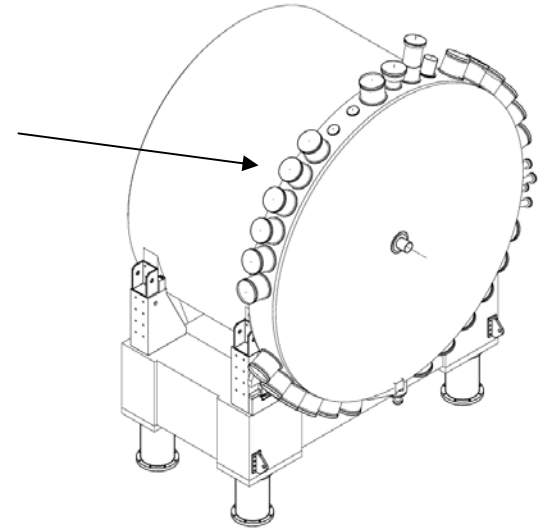
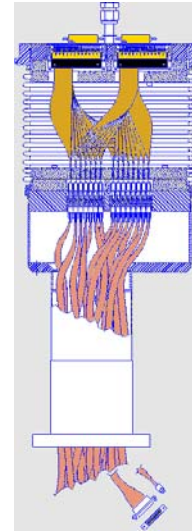
Composed of 2 wheels per end
Front wheel: 67 t 25 mm Cu plates
Back wheel: 90 t 50 mm Cu plates

TRIUMF, Alberta



Wheel Assembly

Cryogenic Signal Feedthroughs



Over 180k signal channels in the LAr calorimeter
High density and reliability required:
1920 pins per feedthrough unit

University of Victoria
TRIUMF



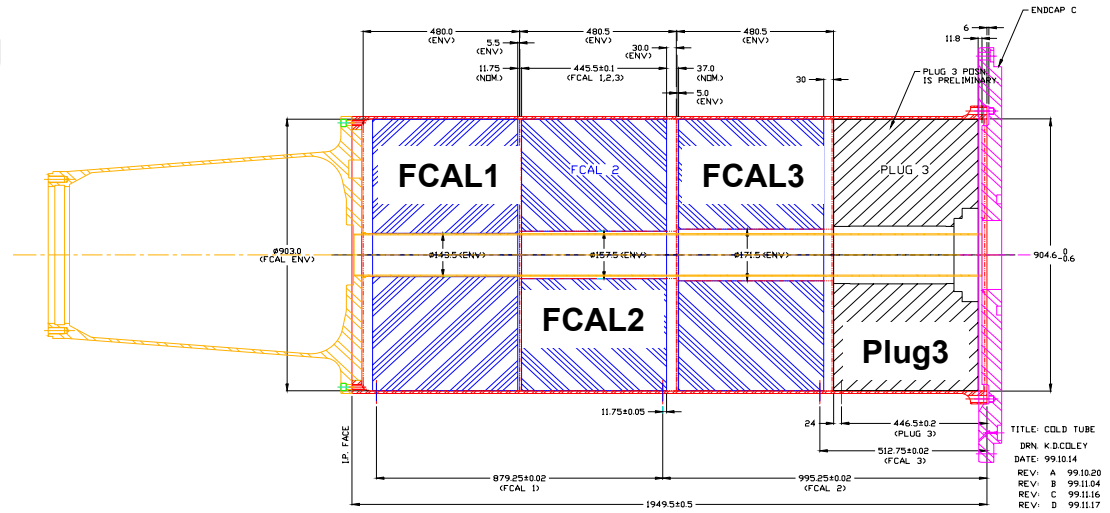
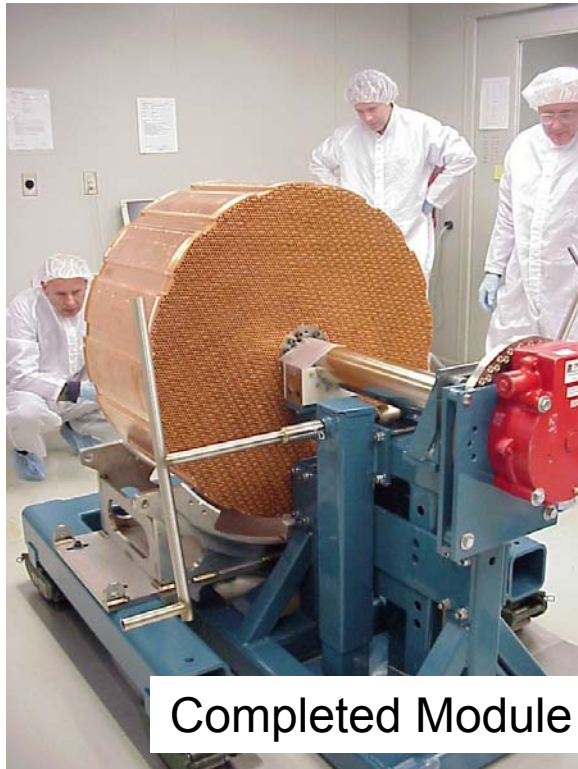
Forward Calorimeter

Four Modules

Each 0.9 m Diam, 0.45 m long

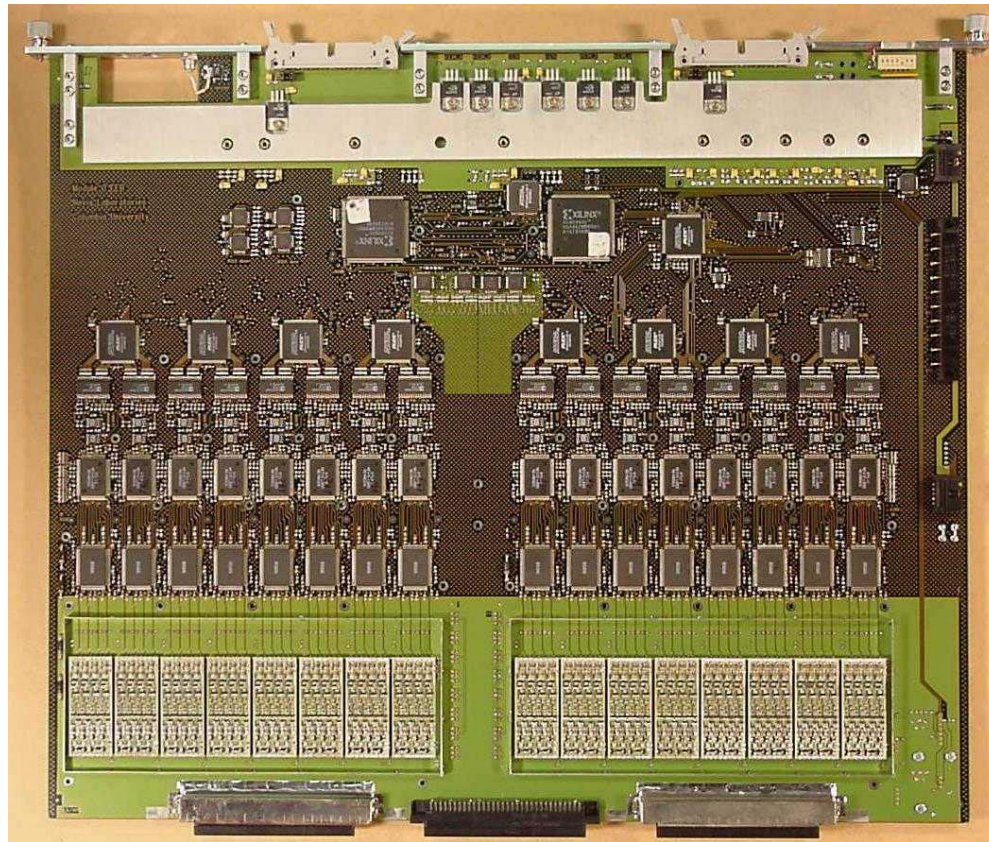
Total 20 Tonnes Tungsten

Carleton, Toronto



Tungsten-Copper Internal Structure

Calorimeter Front-End-Board Electronics

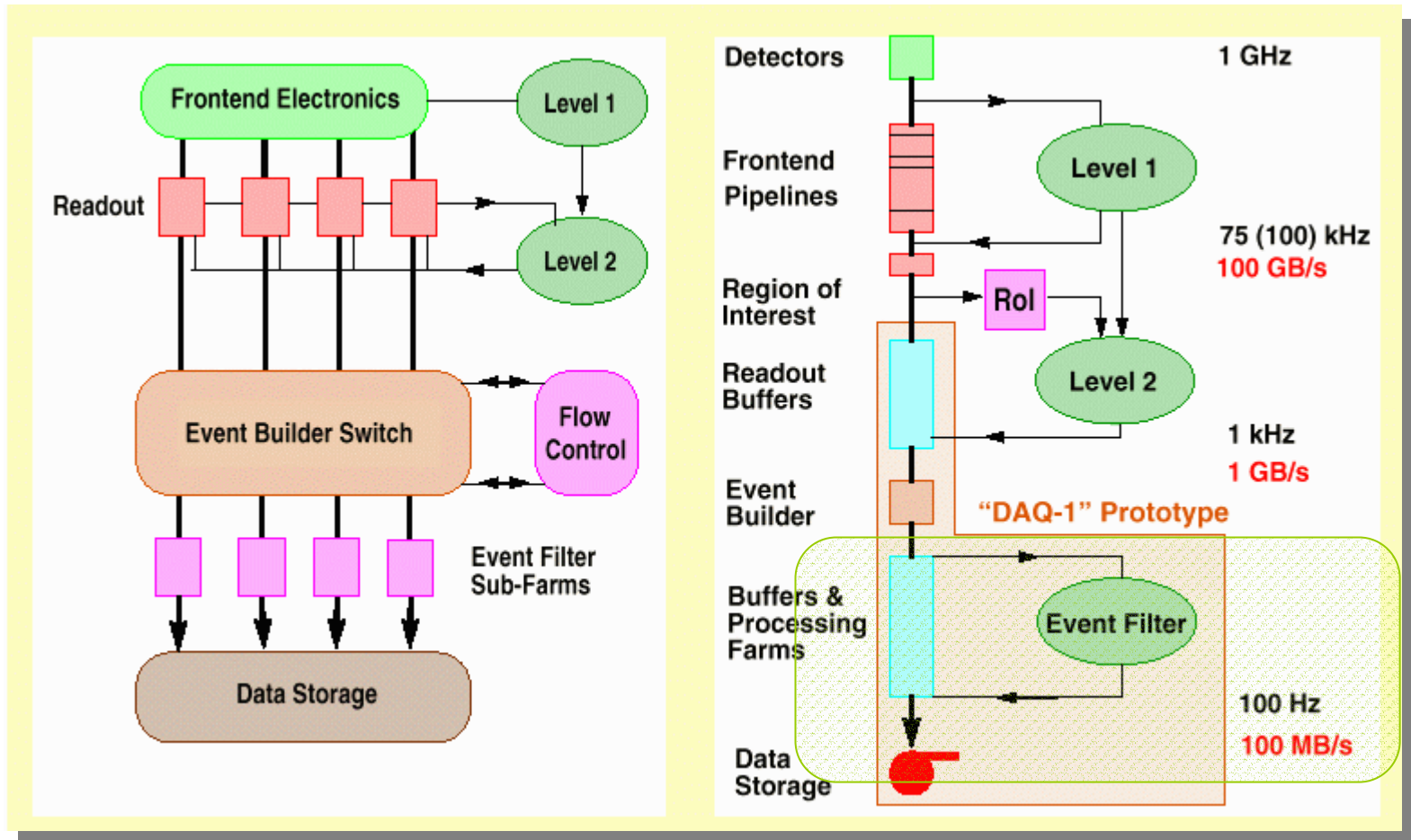


Radiation Hard Logic to Control Calorimeter Signal Readout
Design, Testing, Implementation

Alberta

8/1/2002

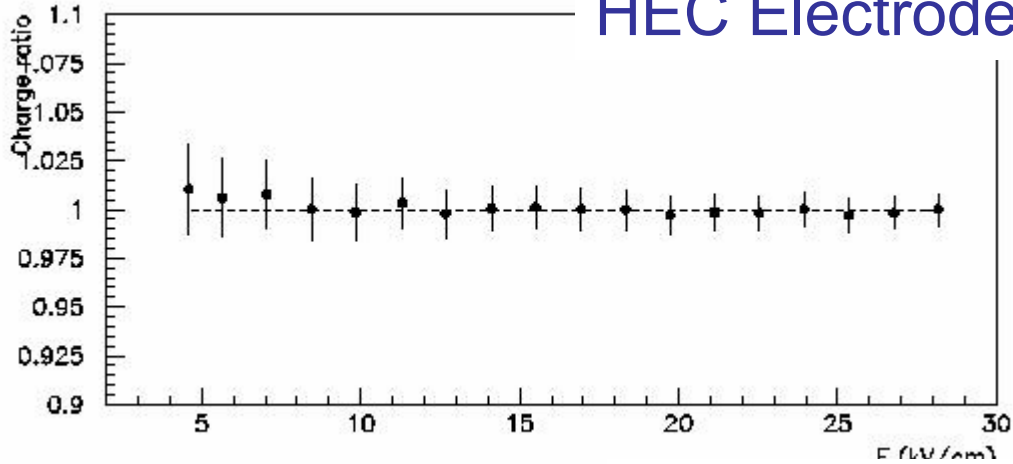
The Event Filter



Online Computer Farm to Select Events Recorded by Experiment

Irradiation Studies

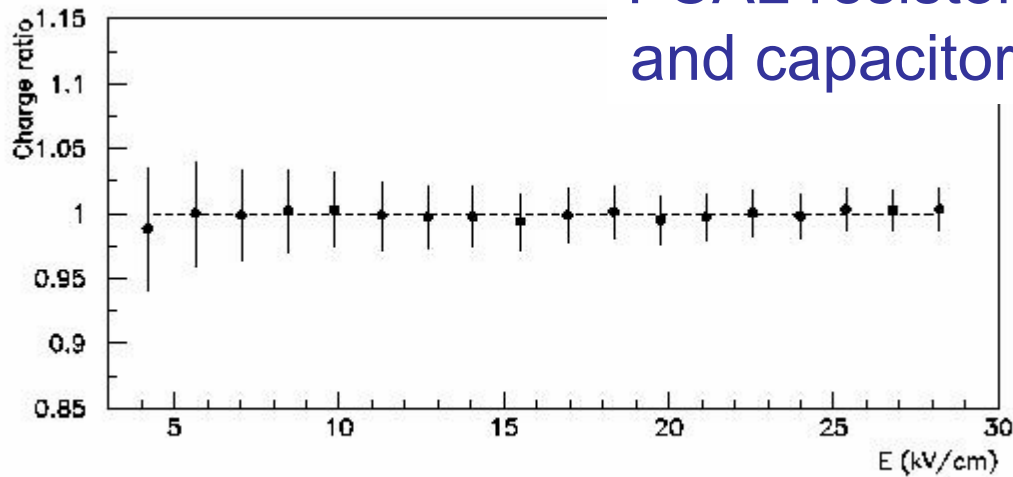
HEC Electrodes



Canada Responsible for:

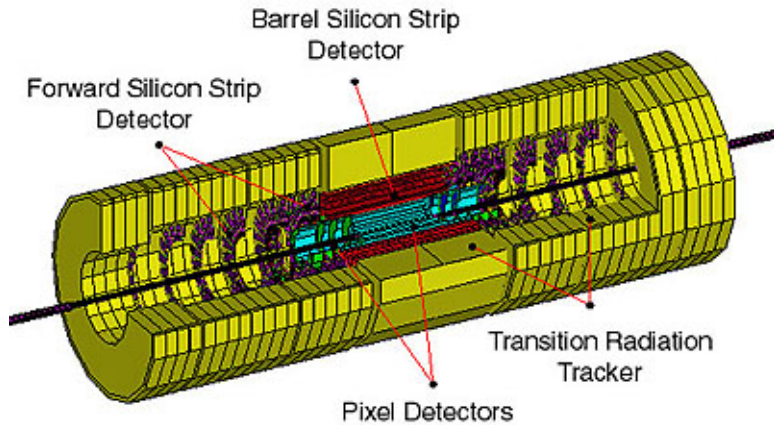
Coordination of Materials
Certification for the complete
LArg system

FCAL resistors and capacitors

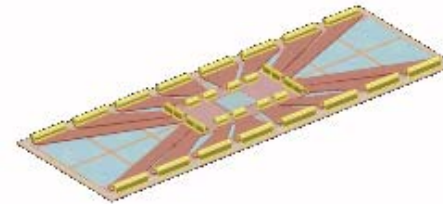


Montréal

Pixel Detector



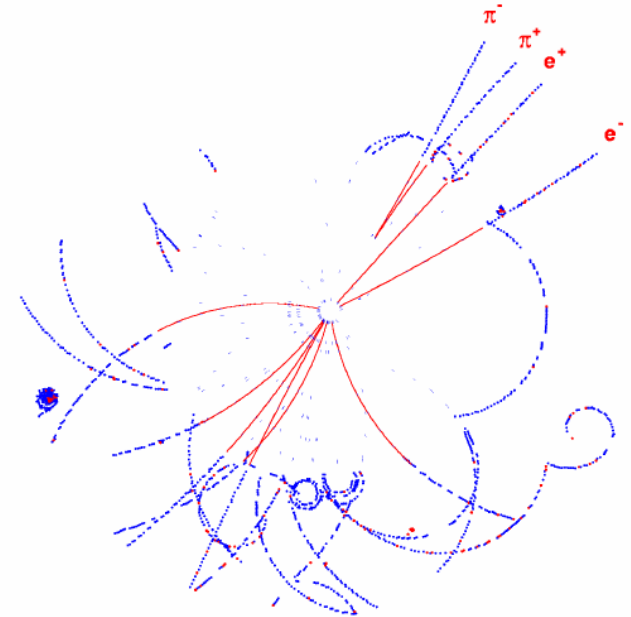
Pixel sensor



Inner Tracker



Material Activation Studies
Sensor Testing
Installation & Commissioning



Montréal, Toronto