(Come and see my) Poster Session

Mário José Sousa, on behalf of several presenters...

INFN-GE

October 16th, 2023

CMS tracking performance in Run 2 and early Run 3

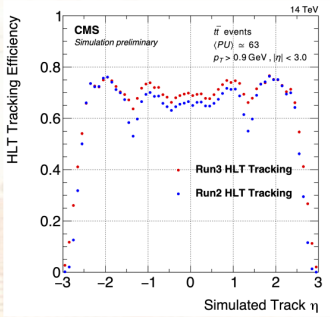
Walaa Elmetenawee (INFN Bari) on behalf of the CMS collaboration

A Iterative Tracking at CMS

B Algorithmic improvements for Run 3

D Tracking Performance using Tag&Probe Technique

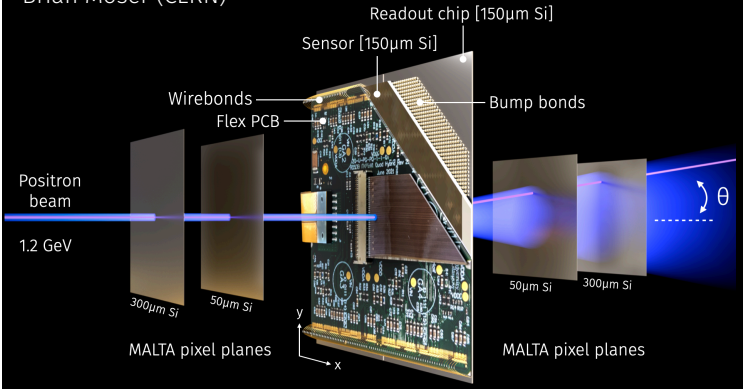
E Performance of tracking @ HLT

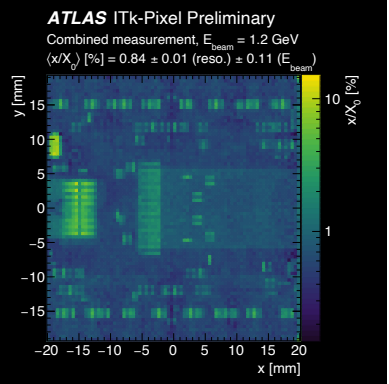


The 32nd International Workshop on Vertex Detectors

Material Measurement of an ATLAS Pixel Module via Multiple Scattering

Brian Moser (CERN)





If you want to know more about the measurement, and whether it agrees with the design expectations or not - meet me at my poster!

Passive CMOS Strip Detectors Response with Alpha Particles

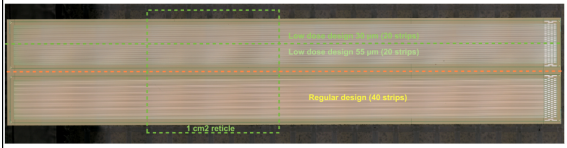
Marta Baselga et al.

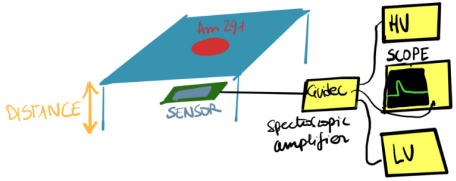
technische universität dortmund

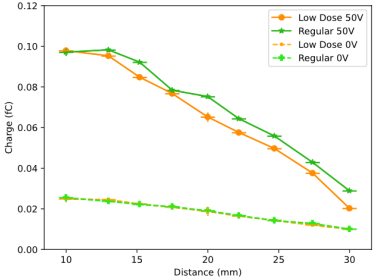
DESY. UNI FREIBURG UNI BONN Fachhochschule Dortmund University of Applied Sciences and Arts

Passive CMOS Strip Detectors

* Passive CMOS strips show great results without any effect of the stitching
* Here we show results for Alpha particles





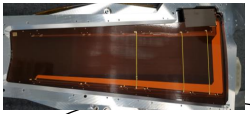


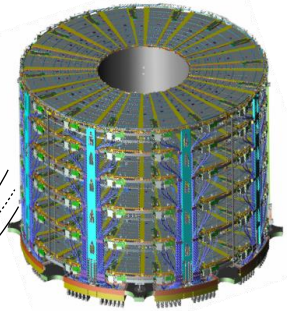
Results

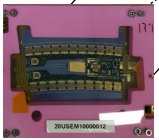
* Charge at 0V and 50 V bias voltages
* At 0 V we can see alpha particles
* At 50 V more charge collected
* Passive CMOS strips show excellent results with alpha particles

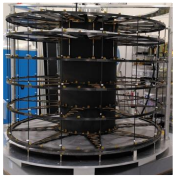
Towards the construction of the ATLAS ITk Strip Endcap detector for the HL-LHC phase.

Laura Franconi (DESY),
for the ATLAS ITk Collaboration



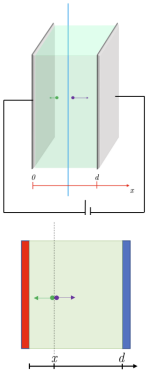


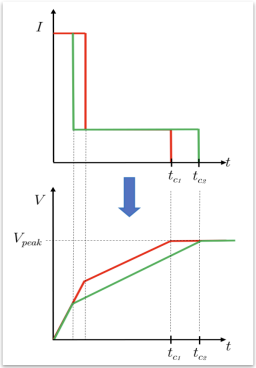


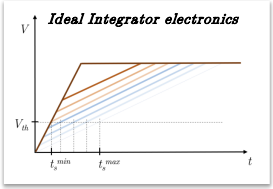


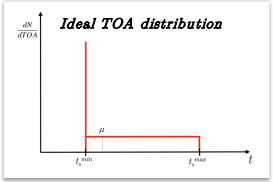
Intrinsic timing properties of simulated ideal 3D-trench silicon sensor with fast front-end electronics

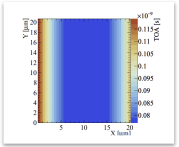
Gian Matteo Cossu, Davide Brundu and Adriano Lai

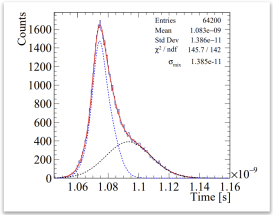












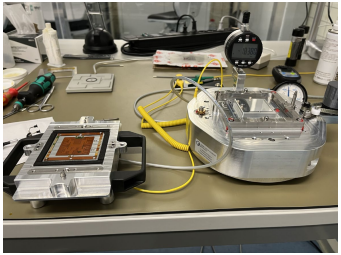
Simulated TOA distribution with realistic fast electronics with noise

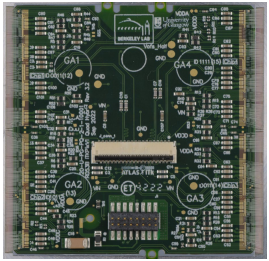
ITk pixel module assembly and testing experience

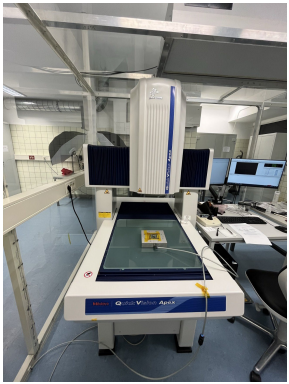
A. Petrukhin
On behalf of the ATLAS-ITk collaboration

Center for Particle Physics Siegen (CPPS)
Universität Siegen

- ITk pixel detector introduction
- Pixel detector concept
- Description how we build the modules with technical details
- Pixel detector testing setup and results







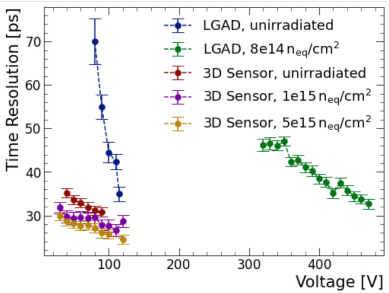
FAST TIMING WITH 3D SILICON SENSORS

3D sensors as an **alternative to Low Gain Avalanche Diodes** (LGADs) limited radiation hardness in future high luminosity experiments

We evaluate existing 3D strip and pixel sensors and compare to standard LGADs

Time resolution in 3D sensors comparable to LGADs, but 3Ds are radiation harder

↓ Time resolution comparison 3D strip sensor and LGADs before and after irradiation



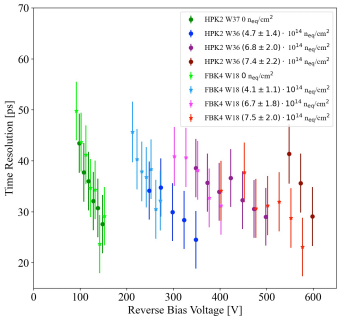
universität freiburg

Iveta Zatocilova iveta.zatocilova@cern.ch

Investigation of LGADs exposed to proton fluences beyond 10^{15} n_{eq}/cm^2

J. Sorenson[1], M. R. Hoeferkamp[1], G. Kramberger[2], S. Seidel[1], J. Si[1]
[1]Department of Physics and Astronomy, University of New Mexico
[2]Department of Experimental Particle Physics, Josef Stefan Institute

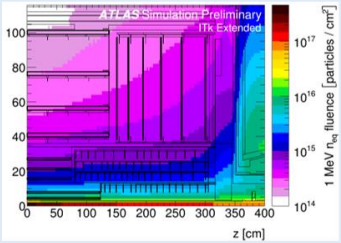
- This study encompasses Los Gain Avalanche Detectors (LGADs) from HPK irradiated with 500 MeV protons at the Los Alamos Neutron Science Center (LANSCE) and LGADs from FBK irradiated with 400 MeV protons at the Fermilab Irradiation Test Area (Itk).
- I am presenting the leakage current, capacitance, timing resolution, charge collection, and inter-electrode isolation measurement results.
- I will compare the results of these irradiations with similar neutron irradiations and discuss the results in the context of requirements for the HL-LHC upgrade detectors.



Qualification of irradiated FBK 3D pre-production pixel sensors for the ATLAS ITk detector

VERTEX 2023 – 32nd International Workshop On Vertex Detectors – Sestri Levante

A NEW ALL-SILICON TRACKER FOR THE ATLAS DETECTOR



Including safety factor at the half of HL-LHC before replacement the **Innermost layer** will reach up to

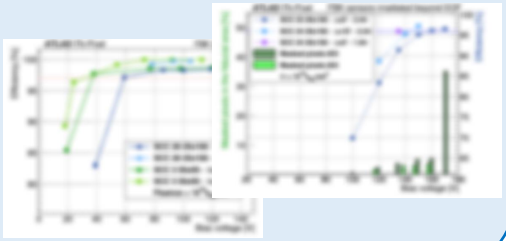
- **1 GRad TID**
- **1.9e16 n_{eq}/cm^2 - End-of-life Fluence (EOF)**

ATLAS tracking performance will require

- Efficiency higher than 97%
- Number of disabled pixels < 3%

3D pixel sensors will instrument the innermost layer

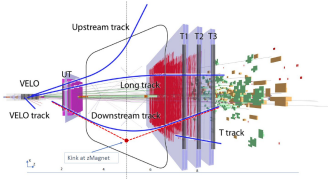
WILL THESE SENSORS BE ABLE TO WITHSTAND SUCH A HIGH LEVEL OF RADIATION ???

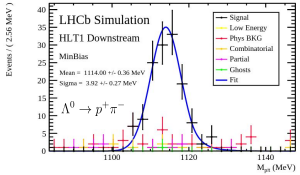


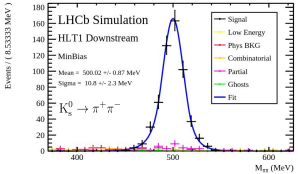
RAVERA SIMONE

Tracking and vertexing *downstream* the LHCb magnet at the first stage of the trigger

Jiahui Zhuo, Arantza de Oyaguren Campos, Brij Kishor Jashal, Volodymyr Svintozelskyi, Valerii Kholoimov
(IFIC, Universitat de València-CSIC, Spain), on behalf of the LHCb RTA project

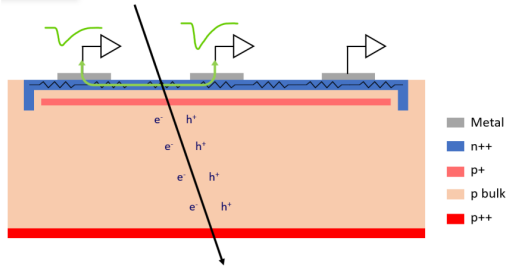






DC-coupled Resistive Silicon Devices: a new approach to detectors for 4D tracking

LUCA MENZIO, INFN TORINO



Novel detector concept for 4D Tracking.

Aims at improving aspects of the more traditional AC-coupled resistive readout detectors.

Measuring Efficiency of SINTEF 3D Pixel Sensors

- 3D silicon pixel sensors:
  - Electrodes are embedded as columns in the active material - high radiation hardness.
- SINTEF 3D pixel sensors have been tested at CERN before and after irradiation.
- Calculate pixel efficiencies and track residuals.